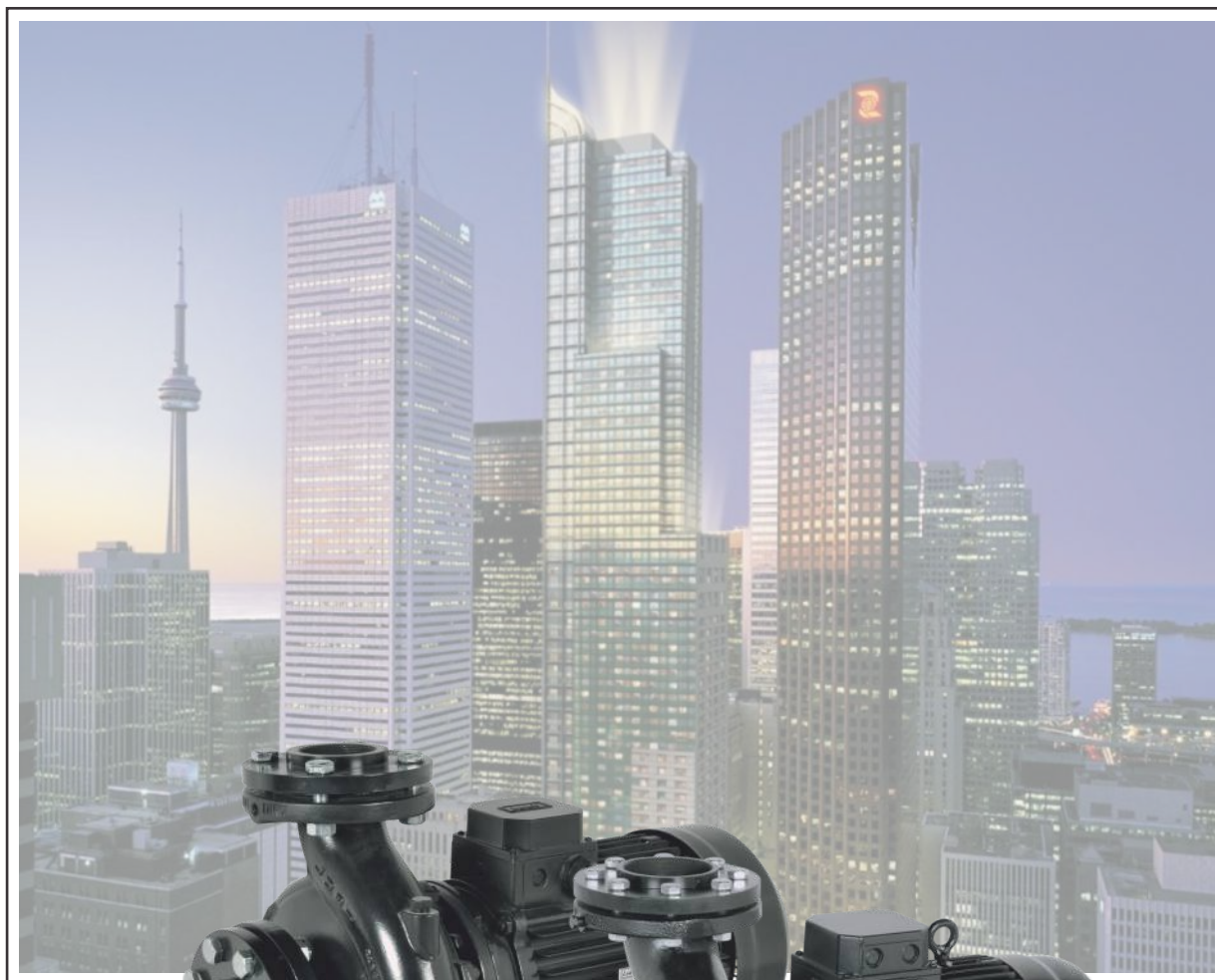
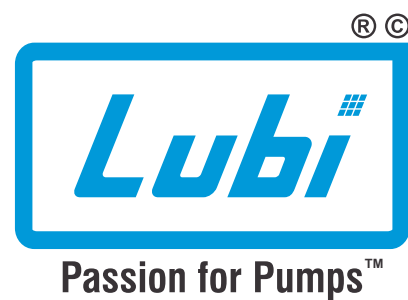


# LES SERIES

Single-stage end-suction pumps according to ISO 2858  
50 Hz



## INTRODUCTION

The Lubi **LES** series are single-stage end-suction pumps according to ISO 2858. Our range also includes several model of pumps which have been developed with duty condition which are not covered in ISO 2858.

## APPLICATIONS

- Water supply.
- Pressure boosting for high rise buildings, hotels industry etc.
- Industrial washing & cleaning systems.
- Fire protection systems.
- Cooling & Air Conditioning systems.
- Boiler feed and condensate transfer system.
- Irrigation systems for fields including sprinkler & drip irrigation systems.

## FEATURES AND BENEFITS

- The pumps are non-self priming, horizontal, single-stage, end-suction pumps with axial suction port & radial discharge ports.
- Standard flanges for suction and discharge ports will be PN 16 as per DIN standard EN 1092-2 and PN 25 as per DIN standard EN 1092-2. ANSI 125 and ANSI 250 as per ASME B16.1 are available on request.
- Performance and dimensions comply to ISO 2858.
- These pumps are close coupled pumps with TEFC squirrel cage induction motor with main dimensions complying to IEC standards.
- These pumps are available with mechanical shaft seal only.
- The pump impellers are dynamically balanced to grade 6.3 of ISO 1940.
- These pumps are available with our standard range of motors complying to EFF2 motors. They can also be supplied with EFF1 motors on request.
- These pumps feature the back pull-out design. The user can remove the motor, bearing bracket & impeller for servicing without disturbing the volute casing and the suction & delivery pipes.

## OPERATING CONDITIONS

Flow range	: 3 to 1060 m <sup>3</sup> /h
Head range	: 4 to 158 metres
Ambient temperature	: Max. + 45°C for EFF2 motors, Max. + 60°C for EFF1 motors.
Liquid temperature range:	0°C to +90°C (with Carbon/Ceramic/NBR/S.S.304 seal) 0°C to +90°C (with Sic/Sic/Viton/S.S.316 seal) 0°C to +140°C (with Carbon/Sic/Viton/S.S.316 seal)

## MOTOR

Motor type	: TEFC squirrel cage induction motor
Ratings	: 0.37 to 132 kW
Rated speed	: 2900, 1450, 960 rpm
Enclosure class	: IP 55
Insulation class	: F
Nominal voltage	: 3 phase 400 V (Tolerance +5% / -10%)
Supply frequency	: 50 Hz
Duty / Rating	: S1 / Continuous
Direction of rotation	: Clockwise as seen from the motor rear end

## PUMPED LIQUIDS

LES pumps are designed for non explosive liquids which are clean and thin without any solid particles. For aggressive liquid please ensure that material of construction is suitable for liquid to be pumped.

If liquids with a viscosity higher than that of water, are to be pumped the power consumption of the pump will increase with increase in viscosity. This will require a large motor for the pump. Head, discharge and pump efficiency will reduce with increase in viscosity.

When pumping liquids with a density higher than that of water, the power consumption of the pump will increase at a ratio corresponding to increase in density.

## MOUNTING

All LES pumps up to 132 frame come with pump volute casing with feet and motor without feet. Starting from 160 frame they come with volute casing with feet and motor with feet.

## VOLUTE CASING

The volute casing of the pumps are designed to be robust in construction to take the undue stress offered by the pipe work. They have an axial suction port and radial discharge port. Standard flanges are PN 16 as per DIN standard EN 1092-2 and PN 25 as per DIN standard EN 1092-2. ANSI 125 and ANSI 250 as per ASME B16.1 are available on request. The volute casing are provided with a priming and drain hole closed by plugs.

## MOTOR ADAPTOR & BACK COVER

Motor adaptors are robust in construction and are provided with an air vent screw in the shaft seal chamber.

## SHAFT

As shown in the figure an integral single shaft is provided for all pumps from 112 to 180 frame (see fig. 1). Remaining pumps are provided with stub shaft as shown below (see fig. 2) which has two drilled hole for set screws in the coupling.

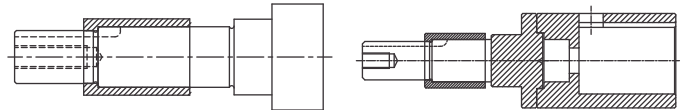


FIG.1 INTEGRAL SHAFT PUMP

FIG.2 STUB SHAFT PUMP

## IMPELLER

The impellers are closed impellers with extra smooth surface finish and machined completely from outside to ensure high efficiency. They are dynamically balanced to grade 6.3 of ISO 1940. All impellers can be trimmed to adopt them for the duty point requested by the customer. Suggested trimmed impeller diameter as shown on the performance curves in data booklet are theoretical. Performance may vary from what is shown on the performance curve.

## TEST PRESSURE

All impellers are hydrostatic tested for leakage as per the following test pressure using water containing corrosion inhibitor at room temperature.

PRESSURE RATING	OPERATING PRESSURE	TEST PRESSURE
PN 16	16 bar	24 bar
PN 25	25 bar	37.5 bar
ANSI 125	125 psi	188 psi
ANSI 250	250 psi	375 psi

## MOTORS

The motors are squirrel cage induction motors, Totally Enclosed Fan Cooled with main dimensions to IEC standards.

The standard motors with the pumps are all as per EFF2 efficiency. EFF1 efficiency motors can be available on request. Motors with frame sizes 71 to 160 are with aluminum construction. The remaining are cast iron construction.

## COUNTER FLANGES

**Cast iron pumps (version-A,B,C,D):** For threaded connection, flanges are made of cast iron. For welding connection, flanges are made of carbon steel.

**CF-8 & Bronze pumps (version-E,F):** For threaded connection, flanges are made of CF-8. For welding connection, flanges are made of stainless steel AISI 304.

**CF-8M pumps (version-G):** For threaded connection, flanges are made of CF-8M. For welding connection, flanges are made of stainless steel AISI 316.

A set consist of one counter flange, one gasket of rubber material and the requisite number of bolts and nuts.

## SECTIONAL DRAWING & MATERIALS

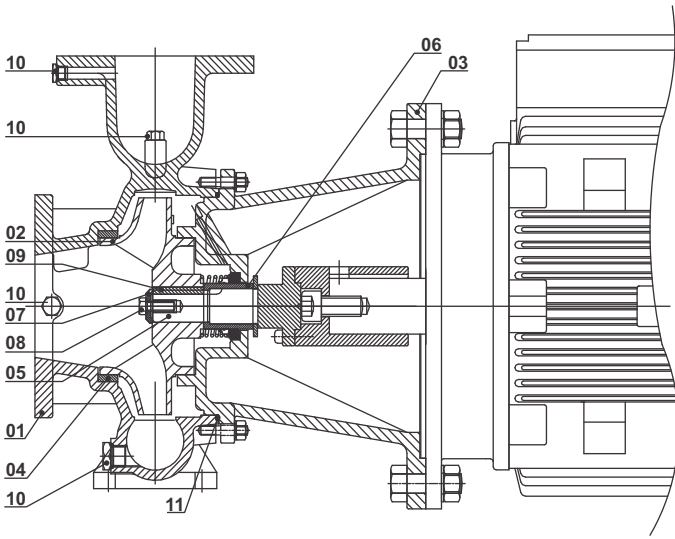


FIG. 3 71 TO 90 & 200 TO 315 FRAME

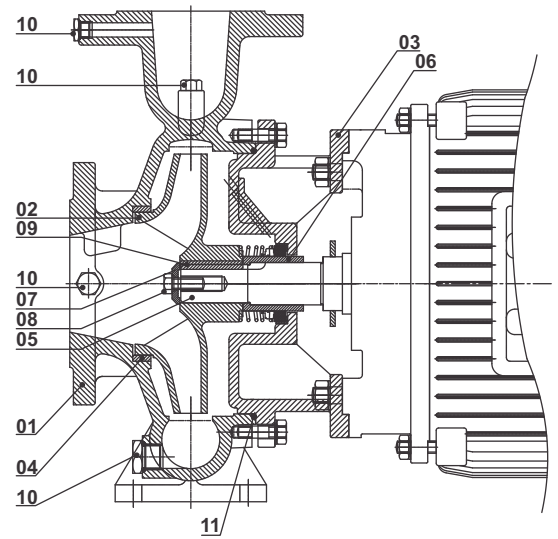
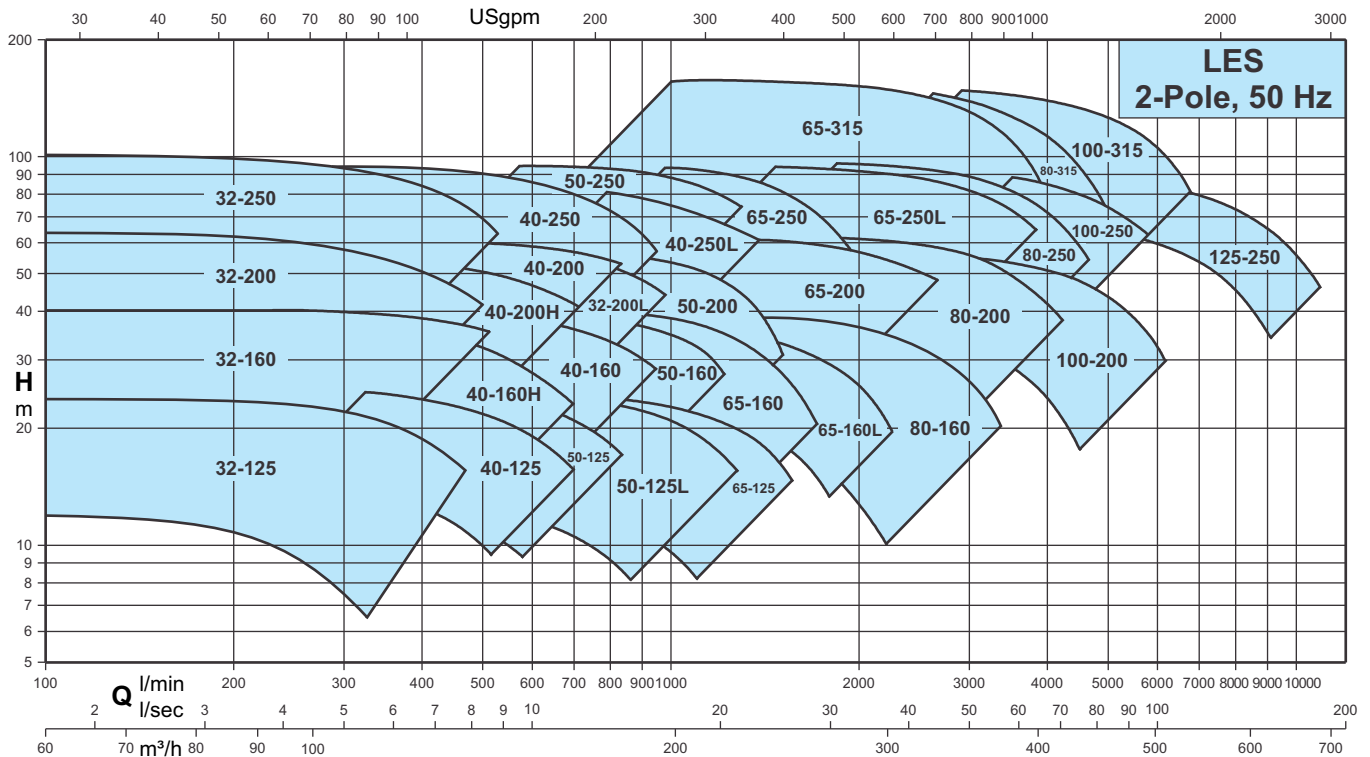


FIG. 4 112 TO 180 FRAME

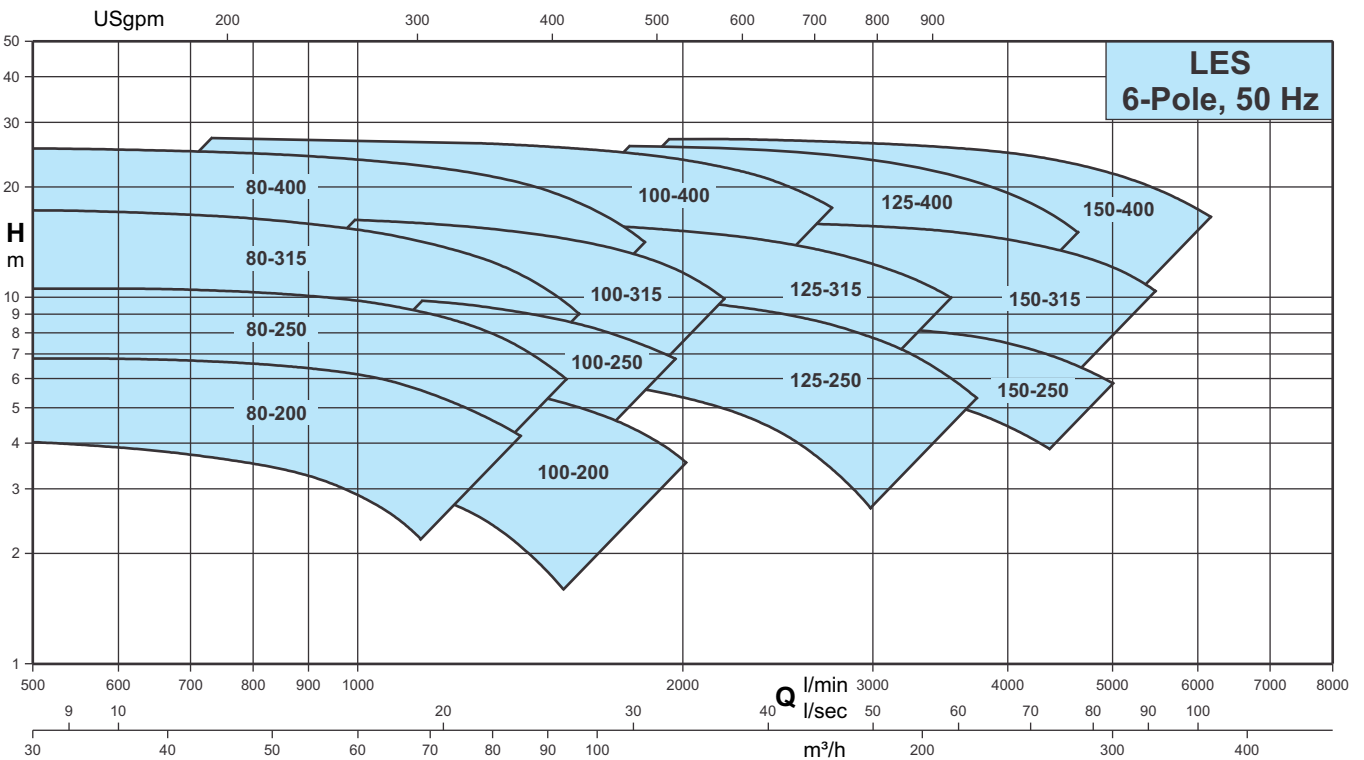
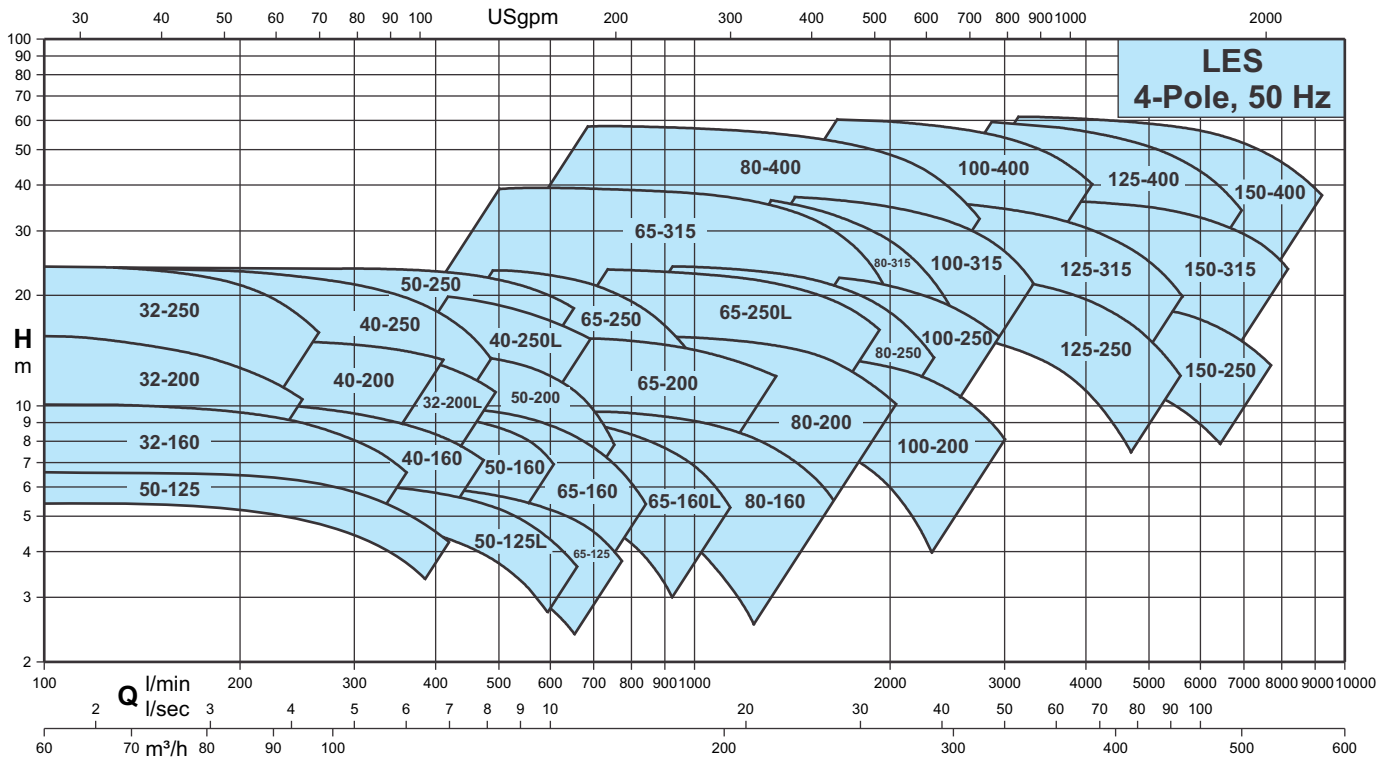
POS.	COMPONENT	A-VERSION	B-VERSION	C-VERSION	D-VERSION	E-VERSION	F-VERSION	G-VERSION
1	Volute casing	Cast iron	Cast iron	Cast iron	Cast iron	Bronze	CF-8	CF-8M
2	Impeller	Cast iron	Bronze	CF-8	CF-8M	Bronze	CF-8	CF-8M
3	Adaptor	Cast iron	Cast iron	Cast iron	Cast iron	Bronze	CF-8	CF-8M
5	Pump shaft	Carbon steel	Carbon steel	S.S. AISI 304	S.S. AISI 316	S.S. AISI 304	S.S. AISI 304	S.S. AISI 316
6	Shaft sleeve	S.S. AISI 410	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316	Bronze	S.S. AISI 304	S.S. AISI 316
7	Impeller washer	S.S. AISI 410	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316	Bronze	S.S. AISI 304	S.S. AISI 316
8	Impeller lock pin	S.S. AISI 410	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316
9	Impeller key	S.S. AISI 410	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316	S.S. AISI 410	S.S. AISI 304	S.S. AISI 316
10	Plugs	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Bronze	S.S. AISI 304	S.S. AISI 316
11	O-ring	NBR	NBR	NBR	NBR	Viton	Viton	Viton
4	Wear ring*	Cast iron	Bronze	S.S. AISI 304	S.S. AISI 316	Bronze	CF-8	CF-8M

Note: \* Wear ring is available on request only.

## PERFORMANCE RANGE



## 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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ISO 9001



ISO 14001

Customer Care Number : 09824200800