

Light Horizontal Multistage Centrifugal Pump Installation & Operating Instructions.

50 / 60Hz





Before beginning installation procedures, these installation and operation instructions should be studied carefully. The installation and operation should also be in accordance with local regulations and accepted codes of good practice.

1. General data

I Applications

The CHL, CHLK, CHLF(T) range of horizontal multistage centrifugal pumps are designed for the pumping of water and other thin, non-corrosive and non-explosive liquids, containing no solid particles or fibers.

I Operating conditions

A. Liquid temperature

0°C to +110°C

B. Ambient temperature

UP to + 40°C

C. Maximum operating pressure

0°C to + 40°C: UP to 10 bar

+41°C to + 90°C : UP to 6 bar.

D. Maximum Inlet Pressure

The actual inlet pressure plus the pressure when the pump is

operating against a closed valve should always be lower than the "maximum operating pressure".

E. Minimum inlet pressure

The table below applies to the maximum flow rates of the pumps and a barometric pressure of 55 m Head. The values stated are the minimum inlet pressures/ maximum suction lifts "H" [m head] at the pump suction port. The values are stated at different liquid temperatures. The head loss in the suction pipe should therefore be taken into account. The maximum suction lift may be limited by the actual head.

Type	H[m head]			
	20°C	40°C	55°C	90°C
50HZ				
CHL/CHLK	*4.1	*3.6	*2.7	2.8
CHL/CHLK	*4.1	*3.6	*2.7	2.8
CHL/CHLK	*7.5	*7.0	*6.1	*0.6
CHL/CHLK	*7.5	*7.0	*6.1	*0.6
CHL/CHLK	*6.3	*5.8	*4.9	0.6
60HZ				
CHL/CHLK	*3.1	*2.6	*1.7	3.8
CHL/CHLK	*3.1	*2.6	*1.7	3.8
CHL/CHLK	*6.8	*6.3	*5.4	0.1
CHL/CHLK	*6.9	*6.4	*5.5	0.0

"H" = minimum inlet pressure during operation.

"H" marked* =maximum suction lift during operation.

1 m head ~0.1bar.

Technical data

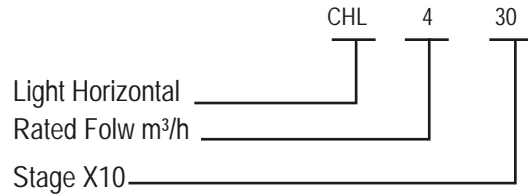
A. Electrical data

See the pump nameplate.

B. Dimensions

See Catalogue

Model code



2. Installation

I Pump location

The pump should be installed so that the suction pipe is as short and the suction lift as small as possible. The pump should be sitted in a well ventilated but frost-free position (see section 5 Frost protection). It may be sitted outside, but it should be protected from the elements by means of a suitable cover.

I Pipework

The pipes should be fitted so that any tension caused by variations in temperature does not affect the pump.

A. Suction pipe

If the pump is to draw liquid from a level lower than the pump suction port, a foot/non-return valve must be fitted to the end of the suction pipe, below the lowest liquid level, since the pump is not self-priming.

When the suction pipe is longer than 10 meters or the suction lift is greater than 4 meters, the diameter of the suction pipe must be larger than that of the pump suction port. Every joint of the suction pipe, must be completely tight. If a hose is used as suction pipe, must be non-collapsible. A strainer is recommended in cases where solids could enter the suction pipe and block the pump.

B. Discharge pipe

The discharge pipe should be at least the same diameter as the discharge port of the pump, to minimize pressure drop and noise.

C. Bypass

If there is any danger of the pump running against a closed discharge valve, a minimum liquid flow through the pump should be ensured by connecting a bypass/a drain to the discharge pipe. The drain can for instance be connected to a tank.

A minimum flow rate equal to 10% of the flow rate at maximum efficiency is needed at all times. Flow rate and head at maximum efficiency are stated on the pump nameplate.



Installation examples

The pump is suitable for applications such as transfer, pressure boosting of pure water, soften water, edible oil and other light chemical mediums.

3. Electrical connections

The electrical connections should be carried out in accordance with local regulations.

The operating voltage and frequency are marked on the nameplate. Please make sure that the motor is suitable for the electricity supply on which it will be used.



Never make any connections in the pump terminal box unless the electricity supply has been switched off.

The pump must be connected on an external mains switch.

- | Single-phase motors, 1X110/220v, 60Hz, do not incorporate motor protection and must be connected to an approved motor protection and must be connected to an approved motor starter. Other single-phase motors incorporate a thermal overload switch and require no additional motor protection.
- | Three-phase motors must be connected to a motor starter, the set nominal current of which must correspond to the electrical data on the pump nameplate. Do not start the pump until has been filled with liquid.

Connections should be made as shown on the inside of the terminal box cover.

Choose one of the two cable entries and knock out the precut disk.

- | Checking of direction of rotation
(Three-phase motors)

Arrows on the motor fan cover indicate the correct direction of rotation.

The pump should rotate counter-clockwise when viewed from the motor end.

To reverse the direction of rotation. switch off the electricity supply

and interchange any two of the incoming supply wires.
4. Starting the pump.

1 Priming

Do not start the pump until it has been filled with liquid and vented.

In Systems with hot liquids, extreme caution should be exercised when venting the pump to eliminate the risk of personal injury caused by escaping water



Booster systems and systems where the liquid level on the suction side is above the pump inlet:

1. Close the isolation valves either side of the pump
2. Remove the priming plug
3. Slowly open the suction valve and keep it open until a steady stream of liquid runs out the priming port.
4. Close the valve, replace the priming plug and tighten securely.
5. Open the suction valve.
6. Start the pump and slowly open the discharge valve until it is fully open.

Pumping from tanks and wells where the liquid level on the suction side below the pump inlet:

- 1 Close the discharge isolating valve.
2. Remove the priming plug.
3. Pour water through the priming port. Make sure that the suction

pipe and pump are completely filled with liquid and vented.

4. Replace the priming plug and tighten securely.
5. Start the pump and slowly open the discharge valve until it is fully open.

1 Frequency of starts and stops

Maximum 100 starts per hour.

5. Operation and maintenance

Under normal operating conditions, the pump does not require any maintenance.

If the pump has been used for pumping liquids that may leave impurities in the pump, it should be flushed through with clean water immediately after use.

1 Frost protection

Pumps which are not being used during periods of frost should be drained to avoid damage.

Remove the priming and drain plug.

Do not replace the plugs until the pump is to be used again.