



Installation and operating instructions



HM, HMK, HMN, HMC

Horizontal Multistage
Centrifugal Pump

Approvals

		CB TEST CERTIFICATE	Ref. Certificate No. CH-3431
IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME			
Issued by:	Electrosuisse		
Product:	Horizontal and vertical multistage pumps		
Applicant:	Swiss Pump Company AG	Schönenstrasse 48 CH-3643 Thun-Guest	Switzerland
Manufacturer:	Swiss Pump Company AG	Schönenstrasse 48 CH-3643 Thun-Guest	Switzerland
Factory:	Swiss Pump Company AG	Schönenstrasse 48 CH-3643 Thun-Guest	Switzerland
Rating and principal characteristics:	220 - 240V~, 50/60Hz, 0.27 - 1.5kW, class I, IP55, (see appendix 1) 3 x 220 - 480V~, 50/60Hz, 0.18 - 30kW, class I, IP55		
Trade mark (if any):	SPOC		
Model/type reference:	HM ... CHL ... VM ... GDL ... ND ... DC ... (see appendix 1)		
Additional information:	---		
Sample of product tested to be in conformity with IEC:	80395-1/64-E/Jan1 80395-2/166-E/Jan1	National differences: EU Group Differences, EU Special national Conditions, EU A-Deviations	
Test Report Ref. No.:	96-HQ-0218.01 + 02		
This CB Test Certificate is issued by the National Certification Body:			
Electrosuisse Luppenstrasse 1, CH-8320 Fehraltorf, Switzerland			
Signed by: Hans Rischmann			
Date of issue: 2006-11-16			



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Declaration of Conformity



**according to the Low Voltage Directive 2014/35/EU
and the Machinery Directive 2006/42/EC
and Electromagnetic Directive 2014/30/EU**

For the following equipment:

Product: Pump
 Trademark: Sewage Pump
 Type Designation: HM,HMC,HMN
 Manufacture's Name: Swiss Pump Company AG
 Manufacture's Address: Moosweg 36, CH-3645,
 Thun-Gwatt -Switzerland

is herewith confirmed to comply with the requirements set out in the Directive 2014/35/EU.
 And the Machinery Directive 2006/42/EC and Electromagnetic Directive 2014/30/EU.

For the evaluation of the compliance with this Directives, the following standards are applied:

EN ISO 12100:2010
 EN ISO 13857:2008
 EN 60204-1:2006
 EN 809:1998
 EN 6100-6-2:2005
 EN 6100-6-4:2007
 EN 60335-1:2012
 EN 953:1997
 EN 60335-2-41

Responsible for making this declaration is the:

Manufacture Authorized representative established within the EU

Authorized representative established within the EU (if applicable):

Company Name: Swiss Pump Company AG
 Company Address: Moosweg 36, CH-3645,
 Thun-Gwatt -Switzerland

Person responsible for making this declaration

Name, Surname: Michael Bähler
 Position/Title: production Manager

(Place) (Date) (Company stamp and legal signature)

Switzerland 12/09/2020

Handling

Before installation, these installation and operating instructions must be read carefully. The product must be lifted and handled with care.

Applications

HM, HMK: Designed to handle clean, thin and non-explosive liquid without particles.
Also suitable for light industry applications.

HMC, HMN: Designed to handle clean, thin, non-aggressive water and non-explosive liquids, no solid particles.

Working Limits

HM, HMK

- Max. operating pressure: 10 bar.
- Max. liquid temperature: HM-- $0^{\circ}\text{C} \sim +90^{\circ}\text{C}$, HMK-- $-15^{\circ}\text{C} \sim +120^{\circ}\text{C}$.
- Max. ambient temperature: $+40^{\circ}\text{C}$.
- Min. inlet pressure: According to the NPSH curve + a safety margin of 0.5m.
- Max. inlet pressure: Limited by the max. operating pressure.

HMC, HMN

- Max. operating pressure: 0°C to $+40^{\circ}\text{C}$ 10 bar, $+41^{\circ}\text{C}$ to $+90^{\circ}\text{C}$ 6 bar.
- Max. liquid temperature: $0^{\circ}\text{C} \sim +90^{\circ}\text{C}$.
- Max. ambient temperature: $+55^{\circ}\text{C}$.
- Min. inlet pressure: According to the NPSH curve + a safety margin of 0.5m.
- Max. inlet pressure: Limited by the max. operating pressure.

Installation

- The pump may be installed as shown in Fig. 1

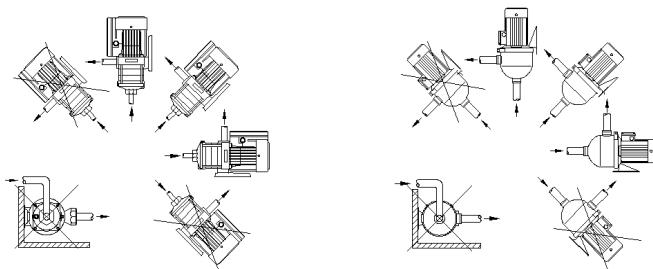


Fig. 1

- The terminal box can be turned to three positions before the pump is installed.

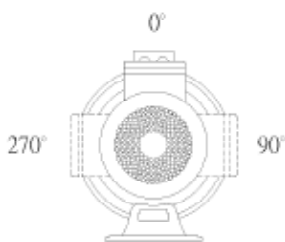


Fig. 2

Proper installation

- A= Eccentric adaptor
- B= Positive lift
- C= Good immersion
- D= Long radius bends
- E = Suction pipe diameter \geq pump port diameter
- F = Suction lift. Depends on pump and installation (*)
- G= Pipes must not exert stress on pump but on independent supports
- H= Foot valve.

(*) The suction lift is determined by liquid temperature, altitude, flow resistance and NPSH required by the pump.

Notes:

A general rule: 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.

Improper installation

- 1 = Tight bends: high flow resistance
- 2 = Insufficient immersion: air suction
- 3 = Negative lift: air pockets
- 4 = Pipe diameter $<$ pump port diameter: high flow resistance.

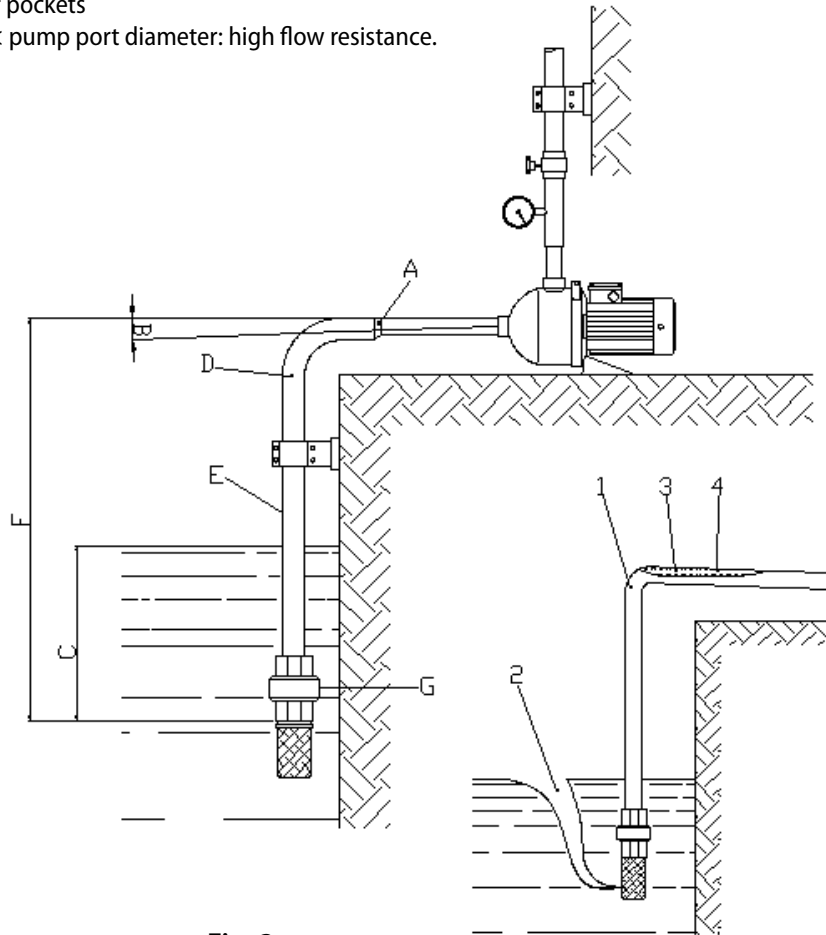


Fig. 3

Electrical Connection

- To connect (3 phase only), proceed as shown on the inside of the terminal board cover.
- Check the direction of rotation (3 phase motor only)—Anticlockwise rotation.

Priming

Before start up, to fill the pump body and suction pipe through the priming plug, bleeding off all the air.

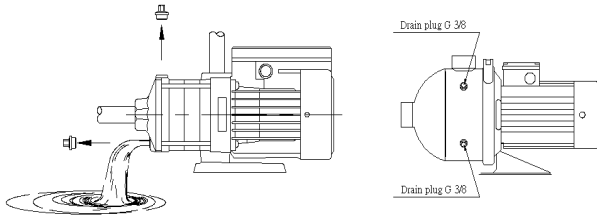


Fig. 4

Frost Protection

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

Remove the priming and drain plugs and allow the pump to drain. Do not replace the plugs until the pump is to be used again.

Trouble and troubleshooting

Fault	Cause
Pump does not run when the motor is turned on	<ul style="list-style-type: none"> - Supply failure. - Main contacts in motor starter are not making contact or the motor coil is faulty. - Control circuit fuses have blown or are defective. - Pump is blocked by foreign material - Motor failure
Pump runs but no water delivered	<ul style="list-style-type: none"> - Pump is not primed - Pump is blocked by foreign material - Suction or discharge pipe blocked - Foot valve or non-return valve is blocked - Suction pipe is leaking - Suction lift is too great - Air in suction pipe or pump.
Pump capacity is not constant or is reduced	<ul style="list-style-type: none"> - Pump is sucking air - The pump, suction pipe or discharge pipe is partly blocked - Inlet pressure too low - Wrong direction of rotation (3 phase) - Suction lift is too great - Foot valve or non-return valve is partly blocked.
Starter overload cut off immediately when the power is switched on.	<ul style="list-style-type: none"> - Overload setting is too low. - Loose or faulty cable connection - One fuse is blown (3 phase) - Pump is not free to run. - Contacts in overload are faulty. - The motor windings are defective. - Low voltage (Especially at peak time).



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