

Side Channel Pumps

Self-priming, canned motor pump with very low NPSH



SIHI^{PC-X}

Differential pressure: up to 10 bar
Maximum flow rate: 120 l/min

Design

The SIHI canned motor pump type PC-X is a self-priming side channel pump that includes the following features:

- Intelligent drive, leading to energy saving
- ATEX certification
- Low NPSH
- Reliable operation during summer or winter conditions
- Suction lift capacity during dry running phase
- Side-channel hydraulics with steep performance curves
- Leakage-free operation due to static sealing points
- Motor cooled by media
- No alignment between motor and pump necessary
- Easy installation
- No maintenance

The SIHI self-priming side channel pump PC-X is the ideal choice for Liquefied Petroleum Gas (LPG) car filling applications.



Applications

LPG car filling stations have different configurations, depending on the country and local regulations. The pumps can be loaded with above-ground tanks or work in suction lift conditions in the case of underground tanks. The SIHI pump type PC-X can fit both applications.

The intelligent drive, combined with the side-channel technology, enable the SIHI PC-X pump to operate in all seasonal conditions without a loss of performance.

Remarks

The SIHI pump type PC-X is an innovative product that can be dropped in place of the former CEHA 3106 currently used in most of the LPG car filling stations.

Due to its design, the PC-X only needs a simple priming kit to work in the suction lift operation. Its unique design makes it possible to run dry during the priming phases and to adjust automatically the pump's performance to the required duty point. For these reasons, the SIHI PC-X reduces installation costs and simplifies the complete system.

Additionally, the integrated motor doesn't need an accurate alignment between the pump and the motor. This removes the need for a mechanical seal, which is typically the most critical point of wear in other solutions. In other words, maintenance costs are kept at a minimum.

Technical data

Pump type	Unit	PCXA 3102 PA	PCXA 3102 PB
Design	-	Suction lift	Flooded suction
Maximum flow rate	l/min	120	120
Maximum differential pressure	bar	10	10
Maximum motor speed	1/min	variable	variable
Voltage 50hz / 60hz	V	400 / 480	
Maximum power consumption	kW	5,5	
Nominal pressure / flange connection	bar	PN 25 / PN 40	
Protection class	-	ATEX II 2G Ex db IIB T3 Gb	
Operating temperature	°C	-30°C to +50°C	

Values are calculated for LPG with specific gravity of 0.56 kg/dm³

Advantages of the PC-X

Low NPSH Impeller

Allows it to operate with low NPSH

Side Channel Hydraulics

Steep performance curve that prevents performance reduction between winter and summer operations

Canned Motor

Avoids risk of leakage (no shaft sealing)
Increases MTBF of the pump
No alignment of the pump needed
Reduction of total pump weight

Shell design

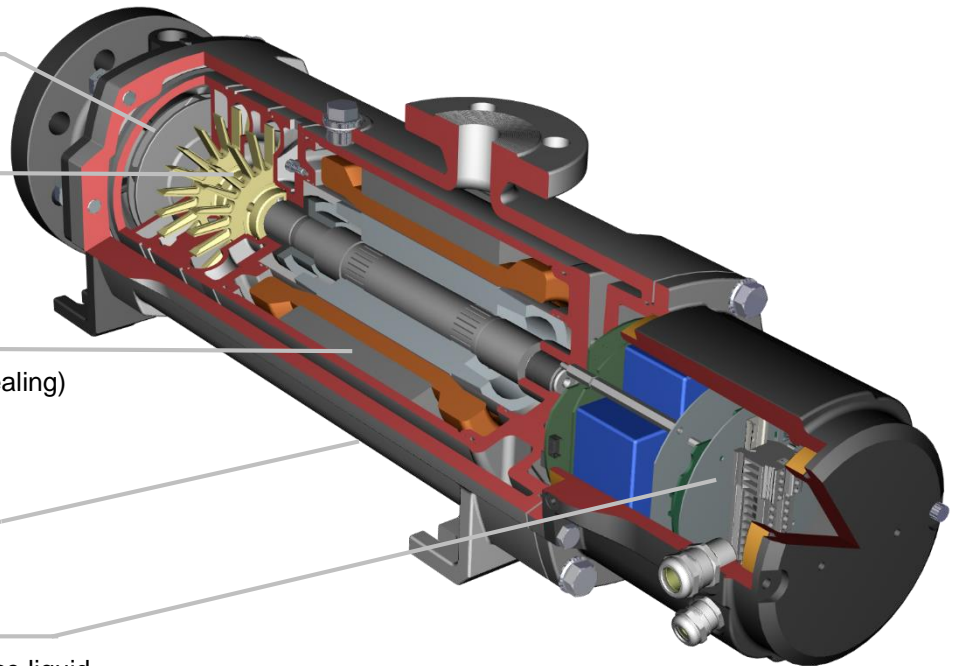
Reduces risk of leakage
Increases safety

Intelligent electronic board

Suction lift operation without service liquid
Reduction of power consumption
Failure monitoring

Replacement of CEHA 3106 (or equivalent size) guaranteed

No modifications in installation needed (same pump axis, same feet fittings, same flange dimension)



Variants of PC-X

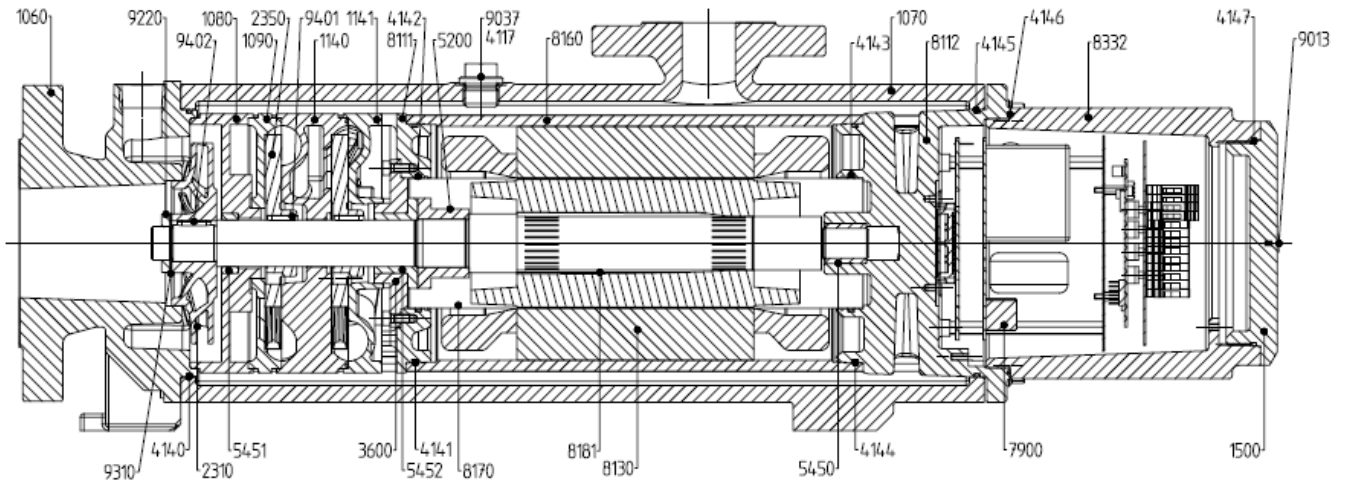
The SIHI pump type PC-X is available in two variants, depending on the number of nozzles needed in the filling station. The **PCXA 3102 PA** combined with the priming kit can be used in suction lift operation and the **PCXA 3102 PB** can serve flooded suction applications (above-ground tanks).

The owner of a PC-X pump can take benefit of a standard exchange at lower cost.

Explosive Area

The SIHI pump type PC-X is designed and certified to be used in explosive areas. The ATEX protection class is II 2G Ex db IIB T3 Gb for use between -30°C to +50°C. It is also certified IEC-EX for usage outside European countries with the following class: IECEx Ex db IIB T3 Gb.

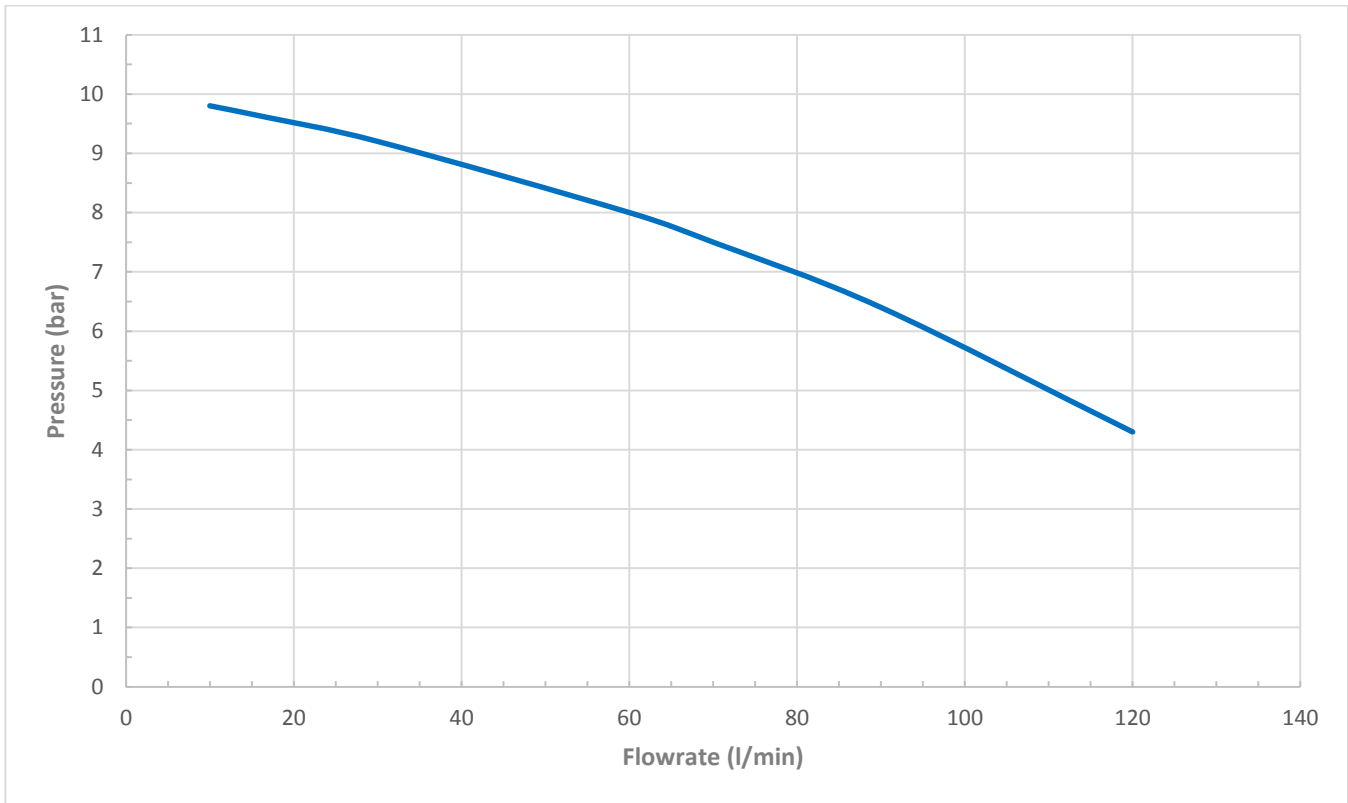
Sectional drawing



Parts list

Pos.	Designation	Material
10.60	Suction Casing	0.7043
10.70	Pump body	0.7043
10.80	Low NPSH stage	0.7043
10.90	Suction intermediate	0.6025
11.40	Side channel intermediate (1)	0.6025
11.41	Side channel intermediate (2)	0.6025
15.00	Cover	0.7040
23.10	Low NPSH impeller	0.6025
23.50	Vane wheel impeller (1)	CuZn21Si3P
79.00	Electronic card	-
81.11	Motor casing (1)	0.7040
81.12	Motor casing (2)	0.7040
81.30	Stator	-
81.60	Outer Can	AW 6060
81.70	Inner Can	1.4301
81.81	Rotor	-
83.32	Electronic box	0.7040

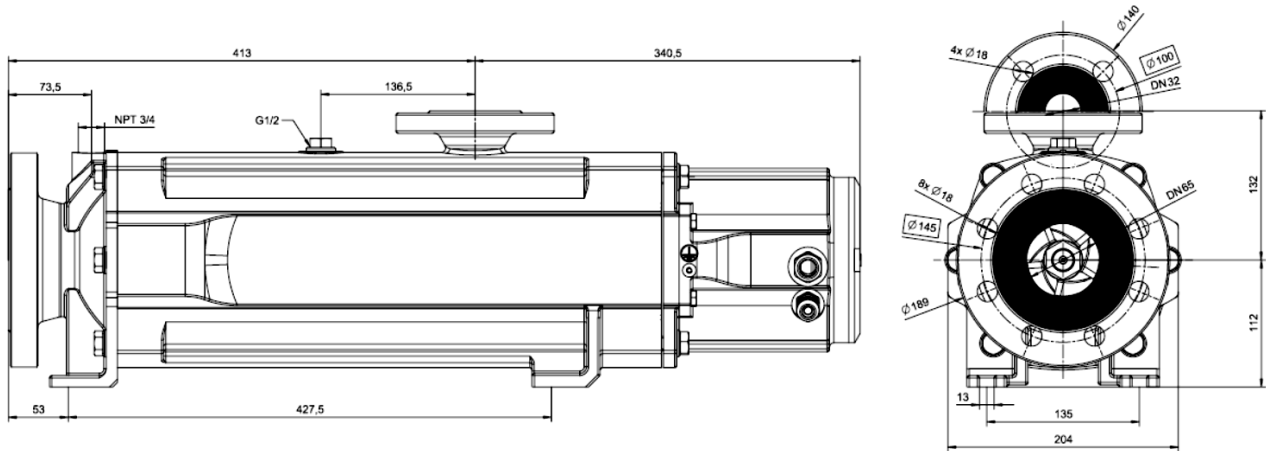
Performance curves PC-X 3102



Above curve is valid for LPG with specific gravity of 0.56 kg/dm³

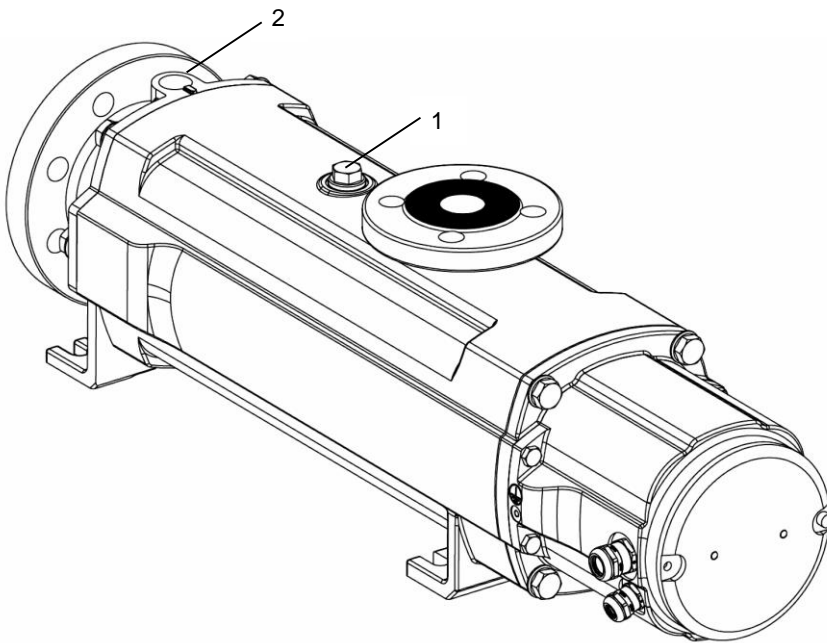
Dimensional drawing

Dimensions [mm]



Net weight: 85 kg

Connections



Position	1	2
	Bypass connection	Flow stabilizer Connection
Pump type		
PCXA 3102 PA	G 1/2"	NPT 3/4"
PCXA 3102 PB		

Pump codification

Pump type	Size	Number of stages	Hydraulic	Bearing set-up	Shaft seal	Material combination	Gasket	Additional option	Motor size
	31 = Side channel hydraulics	02 = Two side channel impellers	A = Standard SC hydraulics left hand driven	F = 2 carbon sleeve bearings	D = Can motor (New) R = Can motor (refurbished)	1B = GGG casing / GG stages and stainless steel impellers	P = Perbunan	A = Suction Lift B = Flooded Suction	91 = Motor DKE 9142/2
PCXA	31	02	A	F	D	1B	P	A	91

Codification example: PCXA 3102 AF D 1B PA 91

Pump accessories

Designation	Use	Remark
Priming Kit	Improved performance in suction lift operations. Kit contains a flow stabilizer and a variable bypass orifice	Needed in case of suction lift operation to improve the priming time