

SIHI[®] PC-X

Side Channel Pumps



Design

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

- Intelligent drive, leading to energy savings
- ATEX and IEC-Ex certifications
- 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 PC-X self-priming side channel pump is the ideal choice for liquefied gas applications like LPG car-filling.

Applications

Liquefied gas installations 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 PC-X pump can fit both applications.

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

Remarks

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

Due to its design, the PC-X pump 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 automatically adjusts the pump's performance to the required duty point. For these reasons, the SIHI PC-X pump 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. Thus, maintenance costs are kept at a minimum.

Technical data

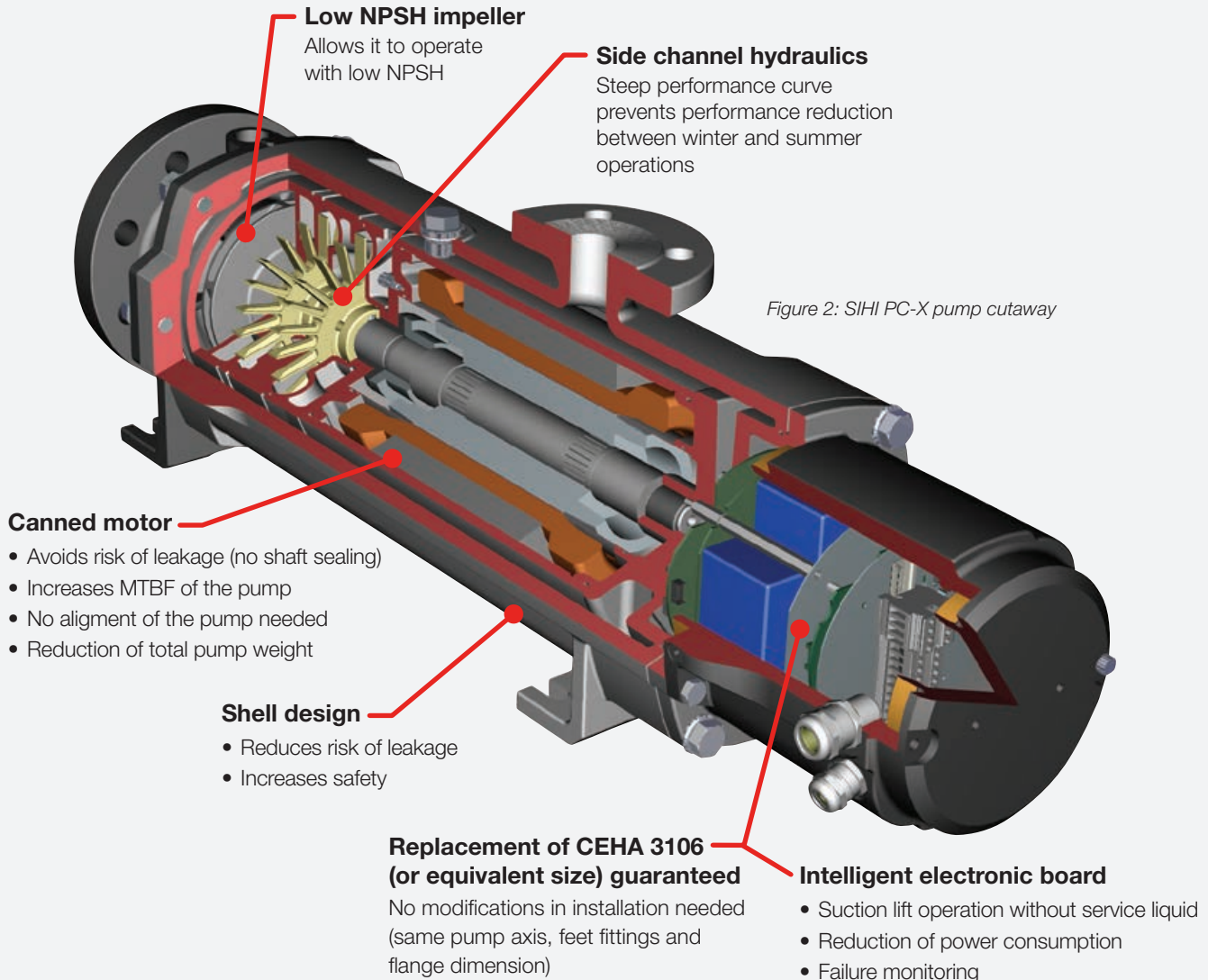
Operating Parameter	Unit	PCXA 3102 PA	PCXA 3102 PB
Design	-	Suction lift	Flooded suction
Maximum flow rate	l/min	120	120
Maximum differential pressure	bar	10	10
Maximum motor speed	1/min	variable	variable
Voltage 50 Hz/60 Hz	V	400/480	
Maximum power consumption	kW	5.5	
Nominal pressure/flange connection	bar	PN 25/PN 40	
Protection class	-	ATEX II 2G Ex db IIB T3 Gb	
Operating temperature	°C (°F)	-30°C to 50°C (-22°F to 122°F)	

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



Figure 1: SIHI PC-X pump

Advantages of the PC-X



Variants

The SIHI PC-X pump is available in two variants. The PCXA 3102 PA is the full option version. Combined with the priming kit, it can be used in suction lift operations. The PCXA 3102 PB can serve flooded suction applications (above-ground tanks).

Explosive area

The SIHI PC-X pump 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 (-22°F to 122°F). It is also certified IEC-EX for usage outside European countries with IECEx Ex db IIB T3 Gb.

Sectional drawing

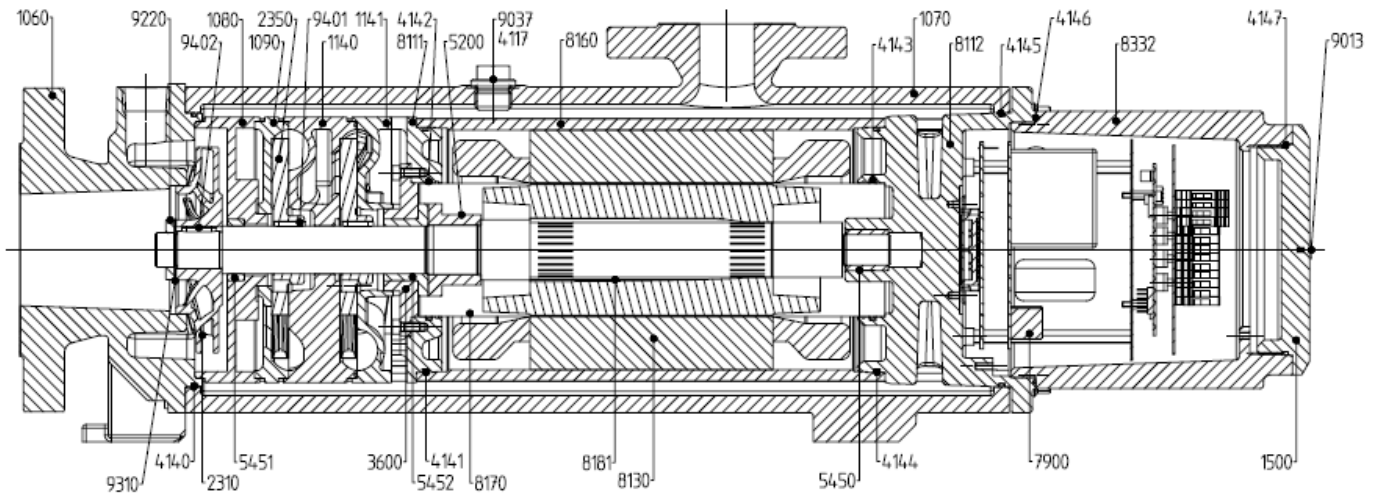


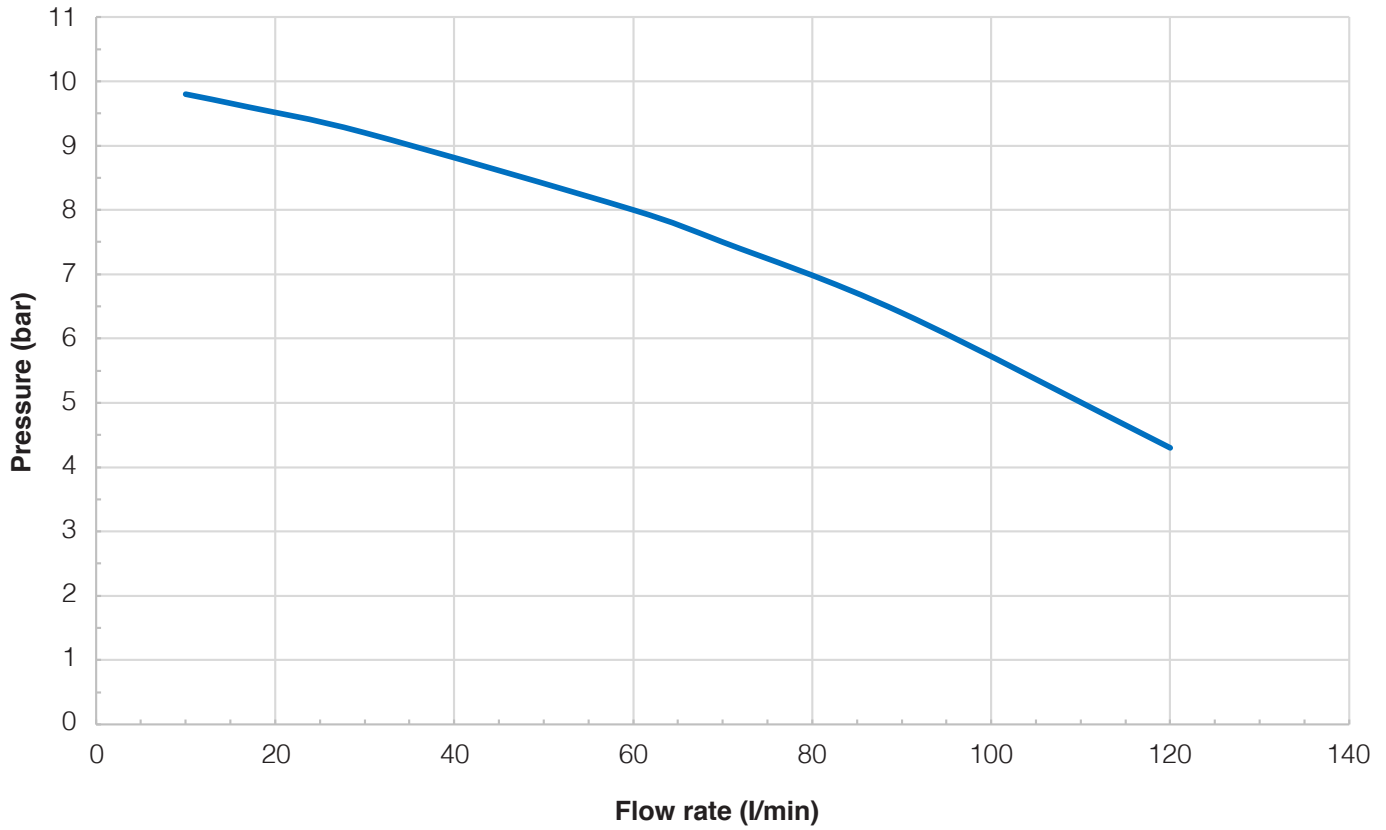
Figure 3: SIHI PCX diagram

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

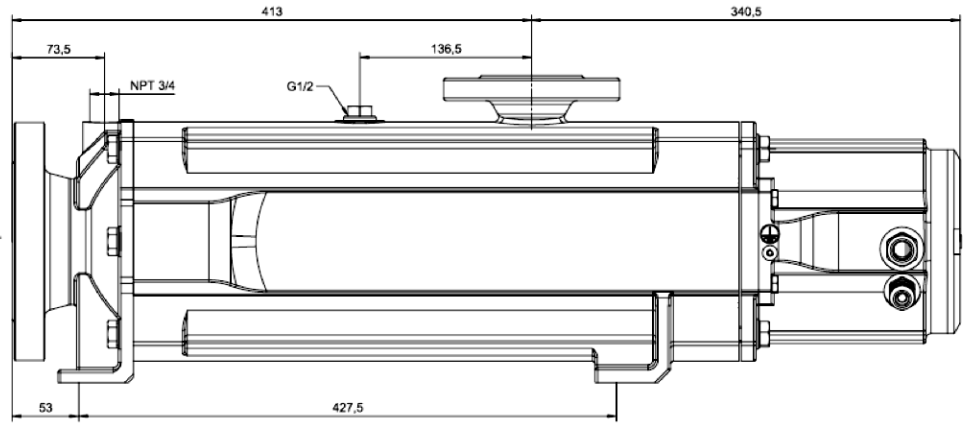
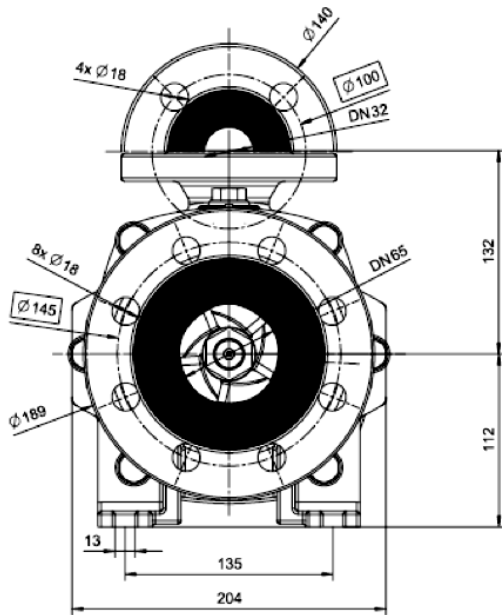
Performance curve

For LPG with specific gravity of 0.56 kg/dm³



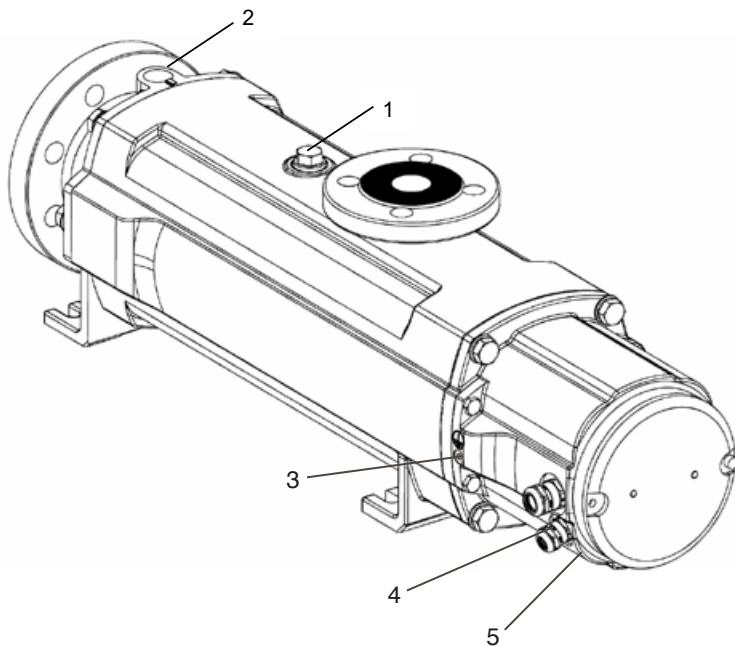
Dimensional drawing

Dimensions [mm]



Net weight: 85 kg

Connections



Position	1	2	3	4	5
	Bypass connection	Flow stabilizer connection	Earthing connection	Cable gland connection for power supply	Cable gland connection for optional information recovery
Pump type					
PCXA 3102 PA	G	NPT	M5	M20x1.5mm	M16x1.5mm
PCXA 3102 PB	0.5 in	0.75 in			

Pump codification

Pump type	Size	Number of stages	Hydraulic	Bearing set-up	Shaft seal	Material combination	Gasket	Version	Motor size
	31 = Side channel hydraulics	02 = Two side channel impellers	A = Standard SC hydraulics left hand-driven	F = Two carbon sleeve bearings	D = Can motor (new)	1B = GGG casing/GG stages and brass impellers	P = Perbunan	A = Suction lift B = Flooded suction D = Dimethyl ether	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: Priming kit

Use: Improved performance in suction lift operations; contains a flow stabilizer and a variable bypass orifice

Remark: Needed in case of suction lift operation to improve the priming time





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