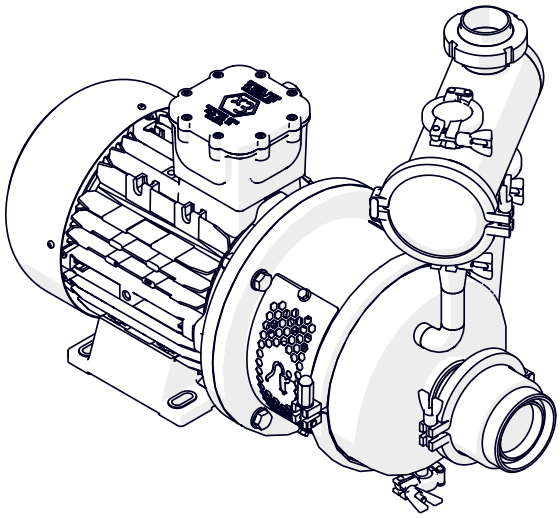
INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

ANNEX FOR EQUIPMENT MARKED CE ATEX UNDER DIRECTIVE 2014/34/EU:

PROLAC HCP SP Ex

The contents of this Annex supplement the information included in the instructions manual. The instructions included in this Annex must be observed additionally whenever equipment marked under Directive 2014/34/EU is used.

This Annex it to be supplemented with the manuals of the ATEX certified components of which the assembly is comprised (e.g. motors, check valve, etc.).



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EU Declaration of Conformity

We,

INOXPA, S.A.U.
Telers, 60
17820 – Banyoles (Girona)

Hereby declare under our sole responsibility that the machine

CENTRIFUGAL PUMP

Designation
PROLAC HCP SP

Type
Prolac HCP SP 50-150, Prolac HCP SP 50-190, Prolac HCP SP 65-215

From serial number **IXXXXXXXXX** to **IXXXXXXXXX** (1)

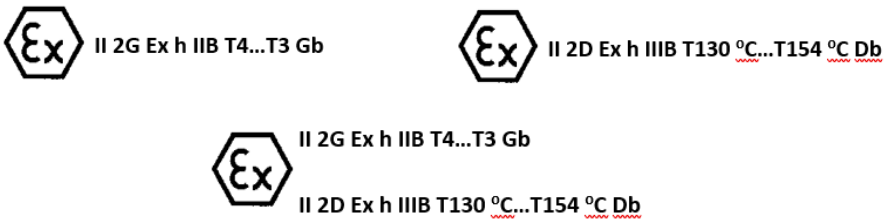
Is in compliance with applicable provisions of the following directive:

Directive ATEX 2014/34/EU

Applicable harmonized standards:

EN ISO 80079-36:2016
EN ISO 80079-37:2016
EN 1127-1:2019
EN 13237:2012
EN15198:2007
EN IEC 60079-0:2018

This Declaration of Conformity covers equipment with the following ATEX marking:



(1) Where X is a numeric character

The technical documentation referenced 20313084-794283 is on file with the notified body LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES (LCIE), 33, Av. du Général Leclerc BP 8, 92266 Fontenay-aux-Roses, France. Reference num. 0081.

The person authorized to compile the technical documentation is the signer of this document.

Banyoles, 2023

David Reyero Brunet
Technical Office Manager

(1) Where X is a numeric character

1. Safety

1.1. INSTRUCTION MANUAL

1.2. INSTRUCTIONS FOR START-UP

This Annex to the instruction manual, together with the manual, contains the basic indications to be fulfilled during installation, operation, and maintenance. Consequently, it is essential that before installation, the installer and technical personnel responsible for the plant read this Annex to the instruction manual and it must remain permanently available in the proximity of the corresponding pump or installation.

Not only should the safety instructions indicated in this chapter be observed and fulfilled, but also the special measures and recommendations included in the other chapters of this manual.

1.3. SAFETY

1.3.1. Warning symbols

The safety instructions in this Annex are expressed using the symbols indicated below. Non-fulfilment of these instructions could endanger the staff, the machine, and the operation of the machine:

This sign will identify all the safety instructions given in this Annex that relate to the danger of forming an explosive atmosphere and creating sources of combustion in potentially explosive atmospheres, whereby failure to comply with those instructions may threaten your safety.

1.4. GENERAL SAFETY INSTRUCTIONS

1.4.1. During the installation

In order to reduce the risk of static electricity, the equipment must be earthed to ensure electrical continuity between the pipes and the pump.

1.4.2. During operation

The limits of the operating conditions in explosive atmospheres must not be exceeded.

This pump was selected according to the operating conditions specified by the user. Therefore, INOXPA disclaims liability for any damage caused by use of the pump in conditions other than those stated in the order.

1.4.3. During maintenance

¡Danger! Important indications regarding protection from explosions.

An explosive atmosphere may be created during disassembly of the pump. Therefore, permits to work must be issued and these jobs must only be done by qualified or trained personnel.

1.4.4. Compliance with the instructions

Not following the instructions may impose a risk for the operators, the environment and the machine, and may result in the loss of the right to claim damages.

This non-compliance may result in the following risks (besides those already described in the manual):

- Generation of explosive atmospheres and explosion risk.

1.4.5. Warranty

Any warranty will be void immediately and lawfully; additionally, INOXPA will be compensated for any civil liability claims submitted by third parties, in the following cases (besides those already described in the manual):

- The material or equipment has been improperly used, has been used negligently, or has not been used according to the working conditions into classified area, working in different classified area, T^a and pressure conditions and/or different substance.

2. Table of contents

3. General Information

3.1. DESCRIPTION

The motors of the PROLAC HCP SP Ex centrifugal pumps must be suitable for operating under explosive atmospheres.

3.2. APPLICATION

This pump was selected for a given set of pumping conditions and operating conditions under explosive atmospheres when the order was placed. INOXPA shall not be liable for any damage resulting from the incompleteness or inaccuracy of the information provided by the purchaser (nature of the fluid, viscosity, RPM, class of the potentially explosive area, gas generated by the potentially explosive atmosphere...).

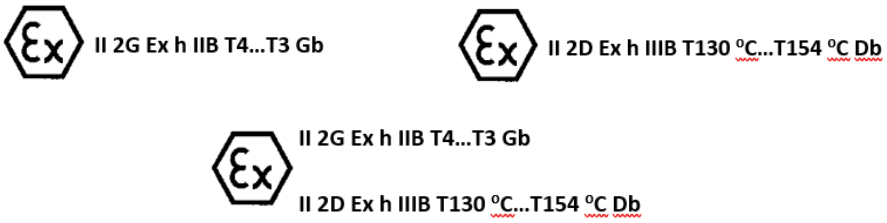
4. Installation

4.1. RECEPTION OF THE PUMP

The received pump must be checked to ensure that it is adapted to the working conditions of the classified area and the conditions of the order.

4.1.1. Identification of the pump

The shipment should be checked in accordance with the instructions included in the manual. Also, the CE ATEX mark affixed to the manufacturer's plate should be checked in order to verify that it matches the requirements of the order.



CE ATEX mark inscribed on the manufacturer's plate.

If the equipment mark does not correspond to the order, INOXPA should be immediately informed of the situation.

The temperature class and the maximum surface temperature depend on the temperature of the product to be pumped and the ambient temperature.

Temperature class for explosive gas atmospheres

Temperature class	Product temperature (cleaning or in process)	Room temperature
T3	Will be T3 if SIP temperature ≤ 140 °C	-20 °C to +40 °C
T3	Will be T3 if product temperature ≤ 120 °C	-20 °C to +40 °C
T4	Will be T4 if product temperature ≤ 100 °C	-20 °C to +40 °C

Maximum surface temperature for explosive dust atmospheres

Maximum surface temperature	Product temperature (cleaning or in process)	Room temperature
T140 °C	Will be T140 °C if SIP temperature ≤ 140 °C	-20 °C to +40 °C
T150 °C	Will be T150 °C if product temperature ≤ 120 °C	-20 °C to +40 °C
T130 °C	Will be T130 °C if product temperature ≤ 100 °C	-20 °C to +40 °C

Notations

- The SIP cleaning process must be carried out with the pump stopped.

- For explosive dust atmospheres, take into account the temperature limitations indicated in Standard EN 60079-14:2014: the maximum temperature of the equipment surface must not exceed 2/3 of the minimum ignition temperature in °C of the dust-air mixture in question:

  Tmax ≤ 2/3 TCL

  where TCL is the minimum ignition temperature of the explosive dust atmosphere.

- For explosive dust atmospheres, take into account the dust layer thickness limitations indicated in Standard EN 60079-14:2014: when the equipment is not marked with a dust layer thickness as part of the T classification, it is You must apply a safety factor taking into account the thickness of the dust layer as:

  up to 5 mm thick:

  The maximum surface temperature of the equipment must not exceed a value of 75 °C below the minimum ignition temperature for the 5 mm thick layer of the dust in question:

  Tmax ≤ T5 mm – 75 °C

  where T5 mm is the minimum ignition temperature of the 5 mm dust layer.

4.2. TRANSPORT AND STORAGE

If the pump is not for immediate use, then it must be moved twice a week in order to prevent the impeller and mechanical seal from seizing up.

4.3. LOCATION

Place the pump near a drain on the floor. Note that the handling of inflammable fluids can create an area classified as Zone 0 in the drain area and therefore all the appropriate safety indications must be observed.

The motors used must be EC marked in accordance with Directive ATEX 2014/34/EU and with the instructions of the manufacturer and the applicable national and local regulations.

Use metal feet; If feet with rubber soles are used, they must be antistatic.

When pumping inflammable or explosive liquids, a proper connection must be used. Connect the parts of the assembly with the earth connections in order to reduce the risk of static electricity.

Depending on the fluid to be pumped, high temperatures may be reached inside and around the pump:

Note that the surface temperature of the pump in normal operating conditions is determined by the fluid it pumps. Therefore, Therefore the range of temperatures in section 4.1.1 must be taken into account.

Air must be properly recirculated in order to cool the pump motor. Make sure there is no other equipment or surfaces near the motor that may radiate additional heat or affect the cooling of the motor. See the motor instructions manual.

4.4. PIPES

Before starting up the pump, make sure that the suction and discharge valves of the pump are open.

Before closing the suction and discharge valves, make sure that the pump is switched-off and has stopped.

4.4.1. Shut-off valves

Use valves that are EC marked in accordance with the Directive ATEX 2014/34/EU and in accordance with the manufacturer's instructions and the applicable national and local regulations.

4.5. PRESSURIZATION TANK

A pressurisation tank for double mechanical seals must always be pressurised at between 1.5 and 2.0 bar over the operating pressure of the pump when it is functioning, even when it is in operation or stopped. See instruction manual for the mechanical seal and pressurisation container. Check that the instrumentation leading to the pressurisation tank is appropriate for the work area.

4.6. ELECTRICAL INSTALLATION

Before connecting an electric motor to the system, check local regulations regarding electric safety and standards EN 60204-1 and EN 60079-14. Also the motor manual. This motor should be Atex with adequate protection for the working environment in which it must run.

Follow the motor manufacturer's indications at all times.

The motor must also be fitted with overload-protection devices suited to its rated power.

If necessary, install a separate fan, bearing in mind the environment where it will operate (potentially explosive atmosphere).

The electrical equipment, the terminals and the components of the control systems may still bear electrical current when powered off. Contact with them can be dangerous for the operator and the equipment or cause irreparable damage to the material. The instructions of the manufacturer must be followed strictly in order to open the motor safely.

Safe-work permits shall be required to handle the equipment in potentially explosive atmospheres. It is strongly recommended that this type of work is carried out in non-classified atmospheres (i.e. there must not be an explosive atmosphere in the location of the pump when it is being handled).

Air must be recirculated to cool the pump motor. Check that there is no other equipment or surface which may emit additional heat or affect the cooling of the motor. See the instruction manual of the motor.

The turning direction must be set when the motor is disconnected from the pump, or when pump is completely primed and, in the case of pressurised cooled or double mechanical seals, the seal chamber is filled with liquid.

5. Starting the pump

Before starting up, those responsible must be duly informed about the pump and the safety instructions. This Annex, along with the instructions manual, will be available to staff at all times.

In order to carry out any type of work in potentially explosive atmospheres, it is necessary to adopt special safety measures such as permits to work.

5.1. START-UP

An explosive atmosphere may be formed during the start-up of the pump. Therefore, permits to work will be required and these tasks must only be carried out by qualified or trained personnel, as specified by EU Directive ATEX 2014/34/EU.

5.1.1. Checks before starting the pump

Before starting up the pump, make sure that the suction and discharge valves of the pump are open.

If there is a risk that the pump is operated in vacuum (i.e. with no fluid), it is recommended that a flow-detection sensor is fitted in the suction side of the pump, or any other device preventing the pump from operating in dry conditions.

In the case of the (non-cooled) single seal option, the pump and the area around the seal must be covered by the pump fluid before start up.

If the fluids that have to be drained are inflammable, the possible formation of potentially explosive atmospheres must be considered; permits to work should therefore be issued.

6. Maintenance

6.1. GENERAL CONSIDERATIONS

The maintenance work of any equipment intended for use in potentially explosive atmospheres can only be carried out with the appropriate work permit, as specified by EU Directive ATEX 2014/34/EU.

Maintenance jobs can only be done by qualified personnel. Use the proper clothing. Ensure that staff read the entire instructions manual and this Annex and, in particular, indicate those chapters that refer to the job to be done.

Use tools that are technically suitable for the maintenance and repair works being carried out. If the area is not unclassified, all the tools must be flameproof and a safe-work permit must be issued before starting the job.

In addition to the instructions included in the manual, the instructions of the motor's manufacturer must also be followed strictly in order to open the motor safely.

The possible presence or formation of explosive atmospheres must be taken into account when emptying the pump, permits to work must be issued and any possible source of ignition in the area surrounding the equipment or the work place must be eliminated.

When ordering spare parts for a pump operating within a classified area, it must be expressly stated that the pump is an ATEX pump and the manufacture number must be quoted.

Otherwise, INOXPA cannot ensure that the pump will operate with parts that are suitable for the classified area within which it is installed.

6.1.1. Check the mechanical seal

Check areas 1 and 21 daily. Check areas 2 and 22 weekly.

For a Double mechanical seal:

- A control of temperature, level and barrier liquid pressure are essential and it is advisable to install an automatic device that stops the pump when the temperature of the liquid exceeds the temperature class in the classified area or when the liquid level is not what it should be.

For a Simple mechanical seal + thermosensor:

- The instructions of the mechanical seal manufacturer, and in particular those concerning the temperature probe, must be followed at all times.

6.2. CLEANING

The user is responsible for establishing a cleaning or disinfection plan that suits their needs. This plan should take into account all applicable laws, regulations and standards related to protection of public health and safety in the use and disposal of chemical products.

The working environment should be clean. Some parts are very fragile and others have small tolerances.

The possibility of the presence of an explosive atmosphere must also be considered. Therefore, these jobs can only be carried out after the appropriate work permit has been issued.

Do not spray the hot parts of the pump with water, since some parts might crack and pump fluid could spill into the environment, thereby creating a potentially explosive atmosphere.

An external cleaning of the equipment should be carried out to prevent excessive accumulation of combustible or explosive powder on the outside surface of the equipment. Under no circumstances should it be allowed to accumulate to a thickness in excess of 2 mm.

6.3. ASSEMBLY / DISASSEMBLY OF THE PUMP

Improper assembly or disassembly of the equipment can impair operation of the pump, cause high repair costs, long downtime and even render the protective system of the equipment ineffectual.

INOXPA disclaims any responsibility for accidents or damage caused by failure to observe the instructions of the manual and of this Annex.

In addition to the instructions included in the manual, the instructions of the motor's manufacturer must also be followed strictly in order to open the motor safely.

6.3.1. Pump and single mechanical seal

¡ATTENTION! Fluid might spill when removing the pump casing and a potentially explosive atmosphere might develop.

7. Technical Specifications

Temperature range. See section 4.1.1.

Materials	
Parts in contact with the product	AISI 306L (1.4404)
Other steel parts	AISI 304L (1.4306)
Gaskets in contact with the product	EPDM (standard)
	FPM (other materials available upon request)
Other gaskets	NBR
Exterior surface finish	Matt
Interior surface finish	Polished Ra ≤ 0,8 μm

Mechanical seal	
Type	Internal single, balanced (standard)
Material of rotating part	Silicon carbide (SiC) (standard)
Material stationary part	Graphite (C) (standard)
	Silicon carbide (SiC)
Gasket material	EPDM (standard)
	FPM

If the single mechanical seal is working in dry conditions, its maximum operating temperature may be exceeded. This is why a simple mechanical seal must not operate under any circumstances in dry conditions.

- Regularly check that the single mechanical seal is functioning correctly.
- Check that the hydraulic part of the pump is always filled of liquid during operation.
- Avoid pumping fluids that contain large amounts of gas.

The client must use a flow meter, flow detector or any other safety device, to ensure that there is a constant flow to the pump and prevent it from operating in dry conditions. Another option is to fit a temperature probe in the mechanical seal.

a. **Double mechanical seal option, balanced**. Must be protected by controlling the washing liquid.

- Check the level of supply reserve.
- Check the temperature of the washing liquid.
- Check the pressure.

¡Caution! The washing liquid must always be under pressure when the pump is operating.

- Check the condition of the washing liquid: Change the washing liquid if it has been contaminated by another liquid. Contamination of the liquid means that the pump is not functioning properly and it must be inspected. For example, the sealing system may have leaks in the middle or be open due to insufficient backpressure of the washing liquid.

b. **Simple mechanical seal + thermosensor, balanced**. The instructions of the mechanical seal manufacturer, and in particular those concerning the temperature probe, must be followed at all times.

NOTAS

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