

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS  
ANNEX ATEX

HYGIENIC CENTRIFUGAL PUMP

PROLAC HCP Ex



Original manual  
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(E) 2023/10

# 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**

Type

**Prolac HCP 40-110, Prolac HCP 40-150, Prolac HCP 40-205, Prolac HCP 50-150, Prolac HCP 50-260, Prolac HCP 50-190, Prolac HCP 65-175, Prolac HCP 65-125, Prolac HCP 65-250, Prolac HCP 80-175, Prolac HCP 80-205, Prolac HCP 80-240**

From serial number **IXXXXXXXXXX** to **IXXXXXXXXXX** <sup>(1)</sup>

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:

 II 2G Ex h IIB T4...T3 Gb

 II 2D Ex h IIIB T130 °C...T154 °C Db

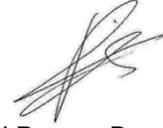
 II 2G Ex h IIB T4...T3 Gb  
II 2D Ex h IIIB T130 °C...T154 °C Db

<sup>(1)</sup> Where X is a numeric character

The technical documentation referenced 20313084-794284 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*

<sup>(1)</sup> Where X is a numeric character

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## 2. Generalities

### 2.1. INSTRUCTIONS MANUAL

This manual contains information on the reception, installation, operation, assembly, disassembly and maintenance of the PROLAC HCP Ex pump to be used in potentially explosive atmospheres. This manual supplements the corresponding sections of the instructions for the standard PROLAC HCP pump, and should be read in conjunction with these instructions.

When a particular section of the PROLAC HCP standard pump instructions is not mentioned in this manual, this section applies to the extent reasonable.

### 2.2. IN ACCORDANCE WITH THE INSTRUCTIONS

Any breach of the instructions could result in a risk for the operators, the environment and the machine, and could result in the loss of the right to claim damages.

This non-compliance could entail the following risk (in addition to those already indicated in the manual):

- Generation of explosive atmospheres and risk of explosion.

### 2.3. WARRANTY

Any warranty issued will be immediately and fully voided and, in addition, INOXPA will be compensated for any product liability claim presented by third parties if (in addition to the conditions already indicated in the manual):

- The material has been used incorrectly or negligently, or has not been used according to the working conditions in the classified zone, working in a different classified zone, or different temperature or pressure conditions.

# 3. Safety

## 3.1. WARNING SYMBOLS



Danger of formation of explosive atmospheres or generation of ignition sources of potentially explosive atmospheres

## 3.2. GENERAL SAFETY INSTRUCTIONS

### 3.2.1. During the installation

Ground the assembly to ensure electrical continuity between the pipes and the pump.  
Installation must be carried out by qualified personnel.

### 3.2.2. During operation

The limit values for working conditions in explosive atmospheres should not be exceeded.  
INOXPA will not be responsible for any damages that may be caused by the use of the pump in conditions other than those expressed in the ATEX form.

### 3.2.3. During maintenance



Important information on explosion protection.

Always observe the instructions for explosion protection.  
Maintenance must be carried out by qualified personnel.

## 4. General Information

### 4.1. DESCRIPTION

The PROLAC HCP Ex pump is a monobloc centrifugal pump designed to be used in areas where there is an explosive atmosphere.

It is the responsibility of the end user to determine if the pump is suitable for the nature of the explosive atmosphere.

The motor must be suitable for use in explosive atmospheres. It cannot be coated.

### 4.2. APPLICATION

The pump was selected for working conditions in explosive atmospheres.

Check the marking on the nameplate to ensure that the pump is suitable for the area where it will be installed.

# 5. Installation

## 5.1. RECEPTION OF THE PUMP

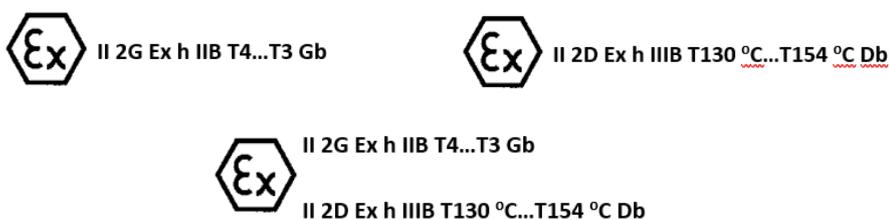
Check that the received pump conforms to the working conditions in the classified area and the order conditions.

## 5.2. IDENTIFICATION OF THE PUMP

The marking on the nameplate refers to the pump unit (motor + hydraulic).

In the event that it is supplied without a motor, the marking will refer only to the pump (hydraulic). In this case, it will be the end user who must ensure that the motor to be assembled is suitable for working in the appropriate explosive zone (according to the marking on the characteristics plate). The instructions in the motor instruction manual must be followed when mounting the pump unit.

The nameplate can have different markings:



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 $\leq$ 140 °C	-20 °C to +40 °C
T3	Will be T3 if product temperature $\leq$ 120 °C	-20 °C to +40 °C
T4	Will be T4 if product temperature $\leq$ 105 °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 $\leq$ 140 °C	-20 °C to +40 °C
T145 °C	Will be T145 °C if product temperature $\leq$ 120 °C	-20 °C to +40 °C
T130 °C	Will be T130 °C if product temperature $\leq$ 105 °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:  
$$T_{max} \leq 2/3 \text{ TCL}$$
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:  
$$T_{max} \leq T_{5 \text{ mm}} - 75 \text{ °C}$$
where T5 mm is the minimum ignition temperature of the 5 mm dust layer.

### **5.3. TRANSPORT AND STORAGE**

Not applicable in this ATEX Annex.

### **5.4. LOCATION**

#### **5.4.1. Excessive temperatures**

Bear in mind that the surface temperature of the pump is determined under normal conditions by the temperature of the circulating product, so the table of temperature classes and maximum surface temperature in section 5.2 must be taken into account.

Ensure air recirculation for cooling the pump motor. Make sure there are no other equipment or surfaces near the engine that could radiate additional heat or affect the engine cooling. See engine instructions manual.

### **5.5. ADJUSTABLE FEET**

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

### **5.6. PIPES**

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

Make sure to stop the pump before closing the suction and discharge valves.

#### **5.6.1. Shut-off valves**

Use CE marked valves in accordance with the regulations on hazardous areas or explosive atmospheres in force, in accordance with the manufacturer's instructions and the national and local regulations.

### **5.7. PRESSURIZATION TANK**

For models with double mechanical seal, it may be necessary to install a pressurization tank. Ensure that the tank is always pressurized 1.5 - 2.0 bar higher than the working pressure of the pump when it is running, even when it is started or stopped. See the instruction manual for the mechanical seal and pressurization canister.

Verify that the instrumentation in the pressurization tank is suitable for the work area.

### **5.8. ELECTRICAL INSTALLATION**

Before connecting an electric motor to the network, check the local regulations on electrical safety, as well as the standards EN 60204-1 and EN 60079-14 current at the moment. Also, the supplier's instruction manual.

This motor must be suitable for working in an explosive zone with adequate protection for the work environment in which it must operate.

Respect the engine manufacturer's instructions at all times.

Install the motor overload protections, appropriate to the nominal power of the motor.

Install, if necessary, an independent fan, taking into account the atmosphere in which said fan must work (potentially explosive atmosphere).

Electrical equipment, terminals, and control system components can still carry current when disconnected. Contact with them can endanger the safety of the operators and the installation or cause irreparable damage to the material, which is why the supplier's instructions for the safe opening of the motor must be respected at all times.

Establish safe work permits for any manipulation of the equipment in the presence of potentially explosive atmospheres, advising to carry out this type of work in unclassified atmospheres (in the location of the pump where there is no explosive atmosphere during its manipulation).

The direction of rotation must be controlled with the motor decoupled from the pump, or with the pump fully primed and, in the case of a double pressurized mechanical seal, the seal chamber filled with liquid.

When pumping flammable or explosive liquids, use a suitable connection. Connect the components of the unit with the ground jumpers to reduce the danger from static electricity.

## 6. Starting the pump

Before starting the pump, the responsible persons must be duly informed about the pump and the safety instructions.

This annex together with the instruction manual must be, at all times, at the disposal of the personnel.

Explosive atmospheres can be generated during the start-up of the pump, so safe work permits must be established and these works must only be carried out by qualified personnel, in accordance with the regulations on risk areas or explosive atmospheres in force.

### 6.1. CHECKS BEFORE STARTING THE PUMP

Make sure before starting the pump that the suction and discharge valves of the pump are open.

If there is a risk of dry work, install a flow detection probe in the pump suction, or any other safety device that prevents dry work of the same.

In the case of simple (uncooled) shut-off, the pump and the shut-off area must be flooded with the pumped liquid before starting the pump.

If the liquids to be drained are flammable, take into account the possible formation of potentially explosive atmospheres and, therefore, the adoption of safe work permits.

### 6.2. CHECKS WHEN STARTING THE PUMP

Not applicable in this ATEX Annex.

# 7. Operating incidents

Not applicable in this ATEX Annex.

# 8. Maintenance

## 8.1. GENERAL CONSIDERATIONS

Maintenance work on any equipment intended for use in potentially explosive atmospheres must involve the adoption of safe work permits, as specified in the regulations on risk areas or explosive atmospheres in force. These works may only be carried out by qualified personnel. Wear suitable clothing. Make sure that the personnel read both the instruction manual and this annex and, in particular, the chapters referring to the work to be carried out.

Use technically suitable tools for maintenance and repair work. If the area is not declassified, all tools must be non-sparking and safe work permits must be established.

In addition to the safety instructions indicated both in the instruction manual and in this annex, always follow the instructions provided by the motor manufacturer for safe opening of the motor.

When ordering spare parts for a pump to work in a classified area, explicitly indicate in the order that it is an ATEX pump and indicate the manufacturing number. If this is not done in this way, INOXPA is not responsible for the pump working with parts that are not suitable for the classified area where it is installed.

## 8.2. CHECK THE MECHANICAL SEAL

Periodically check that there are no leaks in the shaft area.

For classified zone 1 or 21, daily review. For classified zone 2 or 22, weekly review.

For double mechanical seal: it is necessary to control the temperature, level and pressure of the barrier liquid, and it is advisable to install an automatism that stops the pump when the temperature of the liquid exceeds the temperature class of the classified area, or there is not the necessary level of liquid.

For simple mechanical seal + thermosensor: respect the instructions of the mechanical seal and the thermosensor at all times, especially the connection of the temperature probe.

In the event that said mechanical seal works dry, the maximum temperature of its operating area may be exceeded. For this reason, a simple mechanical seal cannot work dry under any circumstances.

- Check the proper functioning of the simple mechanical seal regularly.
- Check that the hydraulic part of the pump is always full of liquid during operation.
- Avoid pumping liquids that contain a large amount of gas.

The end user must ensure with a safety system that there is constant flow input to the pump and prevent it from working dry (flow meter, flow detector or any other safety device).

Double mechanical seal option, balanced. It must be protected by controlling the cleaning fluid.

- Check the level of the feeding reservoir.
- Check the temperature of the cleaning liquid.
- Verify the pressure.



The cleaning liquid must always be under pressure when the pump is running.

-Check the condition of the cleaning liquid; change the cleaning liquid if it is contaminated with external liquid. Cleaning liquid contamination is an indication of erratic or malfunctioning operation and should be inspected. For example, the sealing system may leak on the media side or be open due to insufficient back pressure of the cleaning liquid.

Simple mechanical seal + thermosensor option. Respect the manufacturer's instructions for the mechanical seal and the probe at all times, especially the connection of the temperature probe.

## 8.3. JOINT MAINTENANCE

Not applicable in this ATEX Annex.

#### 8.4. TORQUE

Not applicable in this ATEX Annex.

#### 8.5. STORAGE

Not applicable in this ATEX Annex.

#### 8.6. CLEANING

Take into account the possible presence of explosive atmospheres, therefore, apply safe work permits.

Do not spray the hot parts of the pump with water, as some components could crack and the product to be pumped could spill into the environment, generating a potentially explosive atmosphere.

##### 8.6.1. Cleaning CIP (clean-in-place)

Not applicable in this ATEX Annex.

##### 8.6.2. Automatic SIP (sterilization-in-place)

Not applicable in this ATEX Annex.

#### 8.7. DISASSEMBLY AND ASSEMBLY OF THE PUMP

Incorrect assembly or disassembly can cause damage to the pump operation and lead to high repair costs, as well as a long period of inactivity, and even invalidate the equipment protection systems. INOXPA is not responsible for accidents or damages caused by non-compliance with the instruction manual and this annex.

In addition to the safety instructions indicated in the instruction manual, the instructions provided by the motor manufacturer must be followed at all times for the safe opening of the motor, as well as for its interlocking.

##### Preparations

##### Tools

##### Cleaning

##### 8.7.1. Pump and single mechanical seal



The liquid can spill when removing the body of the pump and could generate a potentially explosive atmosphere.

##### 8.7.2. Double mechanical seal



The liquid can spill when removing the body of the pump and could generate a potentially explosive atmosphere.

##### 8.7.3. Mounting and adjusting the shaft

Not applicable in this ATEX Annex.

# 9. Technical specifications

Temperature range. See section 5.2.

## **Materials**

### **Mechanical seal**

#### **Engine**

The motor must be suitable for use in explosive atmospheres. It cannot be coated.

#### **9.1. SOUND LEVEL**

Not applicable in this ATEX Annex.

#### **9.2. WEIGHT**

Not applicable in this ATEX Annex.

#### **9.3. DIMENSIONS**

Not applicable in this ATEX Annex.

#### **9.4. PARTS AND PARTS LIST**

Not applicable in this ATEX Annex.

#### **9.5. DOUBLE MECHANICAL SEAL**

Not applicable in this ATEX Annex.

**Como ponerse en contacto con INOXPA S.A.U.:**

los detalles de todos los países están continuamente actualizados en nuestra página web.

Visite [www.inoxpa.com](http://www.inoxpa.com) para acceder a la información.

