

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

# CENTRIFUGAL PUMP

# PROLAC HCP



**INOXPA S.A.U.**

Telers, 60  
17820 - Banyoles (Spain)

hereby declare under our sole responsibility that the

Machine: **HYGIENIC CENTRIFUGAL PUMP**

Model: **PROLAC HCP**

Type: **PROLAC HCP 40-110, PROLAC HCP 40-150,  
PROLAC HCP 40-205, PROLAC HCP 50-150,  
PROLAC HCP 50-190, PROLAC HCP 50-260,  
PROLAC HCP 65-175, PROLAC HCP 65-215,  
PROLAC HCP 65-250, PROLAC HCP 80-175,  
PROLAC HCP 80-205, PROLAC HCP 80-240**

Serial number: **IXXXXXXXXXX to IXXXXXXXXXX  
XXXXXXXXXXIINXXX to XXXXXXXXXXXXIINXXX**

fulfils all the relevant provisions of the following directive:

**Machinery Directive 2006/42/EC  
Regulation (EC) n° 1935/2004  
Regulation (EC) n° 2023/2006**

and with the following harmonized standards:

**EN ISO 12100:2010  
EN 809:1998+A1:2009/AC:2010  
EN 60204-1:2018**

The technical file has been prepared by the signer of this document.



David Reyero Brunet  
Technical Office Manager  
25th October 2021



Document: 01.030.30.06EN

Revision: (0) 2021/10

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fulfils all the relevant provisions of these regulations:

**Supply of Machinery (Safety) Regulations 2008**

and with the following designated standards:

**EN ISO 12100:2010**  
**EN 809:1998+A1:2009/AC:2010**  
**EN 60204-1:2018**

The technical file has been prepared by the signer of this document.



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## 1. Table of Contents

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## 2. Generalities

### 2.1. INSTRUCTIONS MANUAL

This manual contains information regarding the reception, installation, operation, assembly, disassembly and maintenance of the PROLAC HCP pumps.

Carefully read the instruction prior to starting the pump, familiarize yourself with the installation, operation and correct use of the pump and strictly follow the instructions. These instructions should be kept in a safe location near the installation area.

The information published in the instruction manual is based on updated data.

INOXPA reserves the right to modify this instruction manual without prior notice.

### 2.2. 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:

- failure of important machine/plant functions,
- failure of specific maintenance and repair procedures,
- possible electrical, mechanical and chemical hazards,
- the risk to the environment due to the type of substances released.

### 2.3. WARRANTY

Any warranty will be void immediately and lawfully and, additionally, INOXPA will be compensated for any civil liability claims submitted by third parties, in the following cases:

- the service and maintenance work has not been carried out in accordance with the service instructions, the repairs have not been carried out by our personnel or have been carried out without our written authorisation,
- modifications have been carried out on our material or equipment without written authorisation,
- the parts or lubricants used are not original INOXPA parts and products,
- the material or equipment has been improperly used, has been used negligently, or has not been used according to the instructions and their intended,
- the pump parts are damaged because they have been subjected to high pressure due to not having used a safety valve.

The General Conditions of Delivery already in your possession are also applicable.



The machine may not undergo any modification without prior approval from the manufacturer.

For your safety, only use original spare parts and accessories.

The usage of other parts will relieve the manufacturer of any liability.

Changing the service conditions can only be carried out with prior written authorization from INOXPA.

Please do not hesitate to contact us in case of doubts or if further explanations are required regarding specific data (adjustments, assembly, disassembly, etc.)

## 3. Safety

### 3.1. WARNING SYMBOLS



Safety hazard for people in general and/or for equipment



Electric hazard

#### ATTENTION

Important instruction for the protection of the equipment and its functions

### 3.2. GENERAL SAFETY INSTRUCTIONS



Read the instruction manual carefully before installing and starting the pump. Contact INOXPA in case of doubt.

#### 3.2.1. During the installation



The [9. Technical Specifications of chapter 9](#) should always be observed.

Never start the pump before connecting it to the lines.

Do not operate the pump if the pump casing is not fitted.

Check for proper specifications of the motors, especially if working conditions create an explosions hazard.



During the installations, all the electric work should be carried out by authorized personnel.

#### 3.2.2. During operation



The [Technical Specifications of chapter 9](#) should always be observed. Under no circumstances can the specified limit values be exceeded.

NEVER touch the pump or the pipework during operation if the pump is being used for transferring hot liquids or during cleaning.

The pump contains moving parts. Never place your fingers inside the pump during operation.

NEVER operate with the suction and discharge valves closed.

NEVER spray water directly on the electrical motor. The standard motor protection is IP55: protection against dust and water spray.

#### 3.2.3. During maintenance



The [Technical Specifications of chapter 9](#) shall always be observed.

NEVER disassemble the pump until the pipes have been emptied. Remember that liquid will remain inside the pump's pump casing (if does not have a purge). Bear in mind that the pumped liquid may be hazardous or extremely hot. Consult the regulations in effect in each country for these cases.

Do not leave loose parts on the floor.



ALWAYS disconnect the electrical power to the pumps prior to carrying out any maintenance.

Remove the fuses and disconnect the cable from the motor's terminals.

All electrical work must be carried out by authorized personnel.

## 4. General Information

### 4.1. DESCRIPTION

PROLAC HCP is a range of close-coupled centrifugal pumps with hygienic design, suitable for use in the dairy, beverage and food industry in general.

The single-stage horizontal pump has a circular pump casing with axial suction and a tangential discharge. The main pump components are pump casing, impeller, cover, lantern and a shaft which is rigidly coupled to the motor shaft.

The standard IEC 60034 motor of type IM B35 is protected by a stainless steel shroud and provided with height adjustable stainless steel legs.

### 4.2. APPLICATION

As a general rule, PROLAC HCP pumps in their standard version are used in the food industry mainly to transfer liquids.

For each type of the pump, the hydraulic performance is given by the choice of impeller diameters and speeds. The characteristic curves also show the power and NPSH requirements. The intended use of the pump is defined by its characteristic curve and operating limits provided in chapter [9. Technical Specifications](#).

#### ATTENTION



The range of application for each type of pump is limited. The pump was selected for a given set of pumping conditions when the order was placed. Misuse of the pump or its use beyond the operating limits may be dangerous or cause permanent damage to the equipment. INOXPA shall not be liable for any damage resulting from the incompleteness of the information provided by the purchaser (nature of the fluid, rpm, etc.).

# 5. Installation

## 5.1. RECEPTION OF THE PUMP



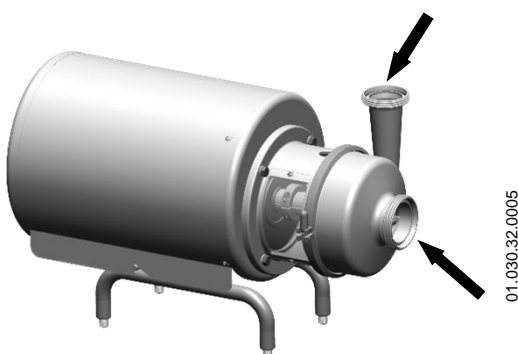
INOXPA cannot be held responsible for the damage sustained by the equipment during transport or unpacking. Please visually check that the packaging is not damaged.

The pump package includes the following documents:

- shipping documents,
- installation, service and maintenance instructions manual,
- instructions and service manual of the motor<sup>1</sup>.

Unpack the pump and check the following:


- the suction and discharge connections of the pump, removing any rest of packaging materials,



- the pump and the motor are not damaged,
- if the equipment is not in good condition and/or any part is missing, the carrier should report accordingly as soon as possible.

## 5.2. IDENTIFICATION OF THE PUMP

Each pump has a nameplate with the basic data required to identify the model.



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GIRONA (SPAIN) - [www.inoxpa.com](http://www.inoxpa.com)

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Serial number →

Type

No

Year

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<sup>1</sup> If the pump has been supplied with a motor from INOXPA

### 5.3. TRANSPORT AND STORAGE

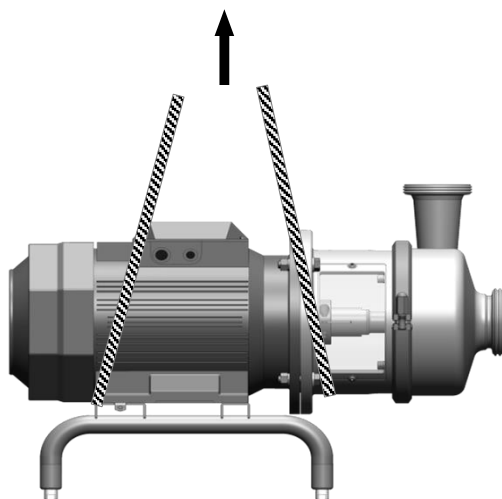
#### ATTENTION



The PROLAC HCP pumps are often too heavy to be stored manually.  
Use an appropriate means of transport.  
Use the points which are indicated in the drawing for lifting the pump.  
Only authorized personnel should transport the pump.  
Do not work or walk under the heavy loads.

Lift the pump as indicated below:

- always use two support points placed as far apart as possible.



#### ATTENTION



Always remove the motor shroud before hoisting

- secure the supports so that they will not move.

See chapter 9. [Technical Specifications](#) to consult dimensions and weights.

#### ATTENTION



During the transport, disassembly or assembly of the pump, there is a risk of loss of stability and that the pump could fall down and cause damages to the operators. Make sure that the pump is properly supported.

### 5.4. LOCATION

Place the pump in a position that allows enough space around it to provide access to the pump as well as to the motor. See chapter 9. [Technical Specifications](#) to consult the dimensions and the weights of the pumps.

Place the pump on a flat and level surface.

#### ATTENTION



Install the pump so as to allow proper ventilation.  
If the pump is installed outdoors, it should be covered by a roof. Its location should allow easy access for inspection or maintenance operations.

### 5.4.1. Excessive temperatures

Depending on the fluid to be pumped, high temperatures can be reached inside and around the pump.

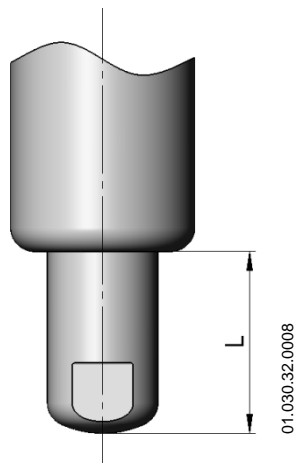


Over 68°C the operator should take protective measures and place warning notices advising of the danger which exists if the pump is touched.

The type of protection selected should not isolate the pump entirely. It should allow for the bearings to be cooled more efficiently and for the bearings to be lubricated.

### 5.5. ADJUSTABLE LEGS

To keep the adjustable legs thread clean these are the permissible L values:



Motor size	Adjustable leg	L mín. (mm)	L máx. (mm)
71	M12	8	23
80/90	M12	8	23
100/112	M16	10	30
132	M16	10	30
160/180	M20	13	40
200/225	M20	13	40

### 5.6. PIPES

- As a general rule, install the suction and discharge lines in straight sections, with the minimum possible number of elbows and fittings to reduce any pressure losses that may be caused by friction.
- Make sure that the pump's ports are properly aligned with the pipework and have a diameter similar to that of the pump connections.
- Place the pump as close as possible to the suction tank and whenever possible below the liquid level, or even below the tank level in order to achieve the largest possible static head for suction.
- Install support brackets for the lines as close as possible to the pump's suction and discharge ports to avoid vibrations and stress on the pump.

#### 5.6.1. Shut-off valves

The pump may be isolated for maintenance. To accomplish this, shut-off valves must be installed and connected to the pump's suction and discharge connections.



#### ATTENTION

These valves must ALWAYS be open during operation of the pump.

### 5.7. PRESSURISATION TANK

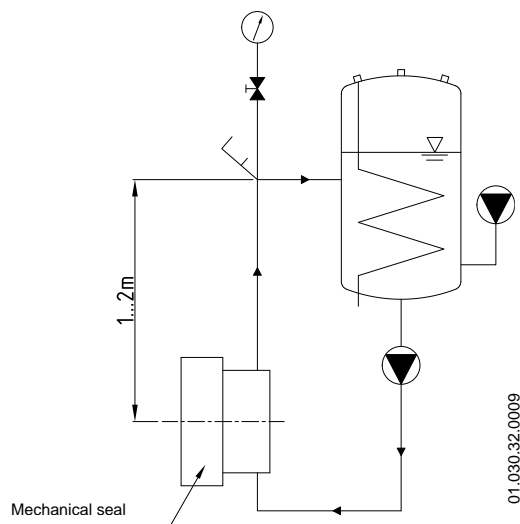
For models with a double mechanical seal, a pressurisation tank needs to be fitted.

#### ATTENTION



ALWAYS install the pressurization tank at a height of between 1 and 2 meters with respect to the pump shaft.

ALWAYS connect the coolant inlet to the bottom connection on the seal chamber. The coolant will then exit through the top connection on the chamber. See the following figure.



For more information on the pressurization tank (installation, performance, maintenance, etc.), refer to the instruction manual supplied by the manufacturer.

## 5.8. ELECTRICAL INSTALLATION



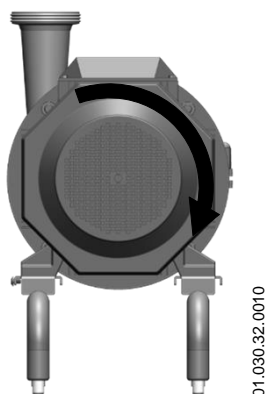
Only qualified personnel can connect the electric motors.  
Take the necessary measures to prevent damage to cables and connections.



Electrical equipment, terminals and components of the control systems may still carry current when they are disconnected. Contacting them may impose a hazard to operators or cause irreparable material damage.  
Before handling the pump, make sure that the motor is stopped.

- Connect the motor in accordance with the instructions supplied by the motor manufacturer, in accordance with the current national legislation and in compliance with EN 60204-1.
- Check the direction of rotation (see the signalling label on the pump).
- Start and stop the pump motor momentarily. Make sure that the direction of rotation is correct. If the pump rotates in the wrong direction it could cause serious damage.

Seen from the rear of  
the motor



### ATTENTION



See indicator label on the pump.  
ALWAYS check the direction of rotation of the motor with liquid inside the pump.

## 6. Start-up



Before starting the pump, carefully read the instructions in section [5. Installation](#).

Carefully read section [9. Technical Specifications](#). INOXPA will not be liable for improper use of the equipment.



NEVER touch the pump or the lines if hot liquids are being pumped.

### 6.1. CHECKS BEFORE STARTING THE PUMP

- Completely open the shut-off valves on the suction and discharge lines.
- If liquid does not flow towards the pump, fill it with the liquid to be pumped.



#### ATTENTION

The pump must never turn dry.

- Check that the power supply matches the rating indicated on the motor plate.
- Check that the direction of rotation of the motor is the right one.

### 6.2. CHECKS WHEN STARTING THE PUMP

- Check that the pump is not making any strange noises.
- Check if the absolute inlet pressure is sufficient to prevent cavitation in the pump. See the curve to determine the minimum pressure required above steam pressure (NPSHr).
- Control the discharge pressure.
- Check for leaks in the sealing areas.



#### ATTENTION

Shut-off valves on the suction pipe must not be used to regulate the flow. All shut-off valves must be fully open during operation.

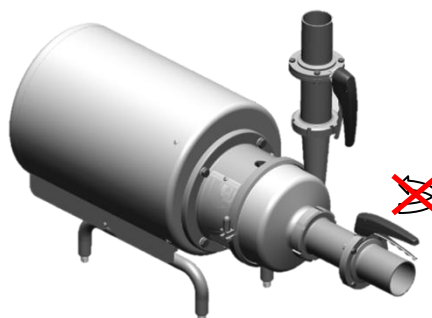


#### ATTENTION

Control the motor consumption to prevent an electrical overload.

Reduce the flow rate and the electrical power consumed by the motor:

- by regulating the pump's discharge flow
- by decreasing the motor speed



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Use special protection when the sound pressure in the operation area exceeds 85 dB(A).

## 7. Troubleshooting

The following table provides solutions to problems that might arise during the operation of the pump. The pump is assumed to have been properly installed and be suitable for the relevant application.

Please contact INOXPA if technical assistance is required.

[illegible]

# 8. Maintenance

## 8.1. GENERAL CONSIDERATIONS

This pump, just like any other machine, requires maintenance. The instructions contained in this manual cover the identification and replacement of spare parts. The instructions are aimed at maintenance personnel and those responsible for the supply of spare parts.



Carefully read chapter [9. Technical Specifications](#).

Maintenance work can only be carried out by qualified personnel that are trained and equipped with the necessary resources to carry out this work.

All parts or materials that are replaced must be properly disposed of/recycled in accordance with the current directives applicable in each area.



ALWAYS disconnect the pump before beginning any maintenance work.

## 8.2. CHECK THE MECHANICAL SEAL

Periodically check that there are no leaks around the shaft. If leakage is detected through the mechanical seal, replace it following the instructions in chapter [8.7. Disassembly and assembly of the pump](#).

## 8.3. MAINTENANCE OF THE SEALS

SEALS REPLACEMENT	
Preventive maintenance	Replace after twelve (12) months. We also recommend replacing the gaskets during seal or pump shaft replacement.
Maintenance after a leak	Replace at the end of the process. If the impeller nut gasket fails, the threaded hole on the impeller and the threads on the end shaft have to be cleaned. Follow the instructions given in <a href="#">8.6. Cleaning</a> .
Scheduled maintenance	Regularly check that there are no leaks and that the pump is operating correctly. Keep a record of the pump. Use statistics to plan inspections.
Lubrication	During assembly, use soapy water when fitting the different gaskets to allow them to slide better.

The period between each preventive maintenance service will vary depending on the operating condition of the pump: temperatures, flow, number de cycles per day, cleaning solutions used, etc.

## 8.4. TIGHTENING TORQUE

Size	Nm	lbf·ft
M6	10	7
M8	21	16
M10	42	31
M12	74	55
M16	112	83

## 8.5. STORAGE

Before being stored the pump must be completely emptied of liquids. Avoid, as far as possible, the exposure of the parts to excessively damp atmospheres.

## 8.6. CLEANING



The use of aggressive cleaning products such as caustic soda and nitric acid may give rise to skin burns.

Use rubber gloves during cleaning procedures.

Always use protective goggles.

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

If the pump is installed in a system with a CIP process, it is not necessary to disassemble the pump.

If the automatic cleaning process is not provided, proceed to disassemble the pump as indicated in the chapter [8.7. Disassembly and assembly of the pump](#).

#### **Cleaning solutions for CIP processes:**

Only use clear water (chlorine-free) to mix the cleaning agents:

- a. Alkaline solution: 1 kg by weight of caustic soda (NaOH) at 70°C (150°F)

1 kg NaOH + 100 l H<sub>2</sub>O = cleaning solution

or

2,2 l NaOH at 33% + 100 l H<sub>2</sub>O = cleaning solution

- b. Acid solution: 0,5% by weight of nitric acid (HNO<sub>3</sub>) at 70°C (150°F)

0,7 l HNO<sub>3</sub> at 53% + 100 l H<sub>2</sub>O = cleaning solution

#### **ATTENTION**



Check the concentration of the cleaning solutions. Incorrect concentrations may lead to the deterioration of the pump seals.

To remove any traces of cleaning products ALWAYS perform a final rinse with clean water at the end of the cleaning process.

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

The process of sterilization with steam is applied to all the equipment including the pump.

Do NOT start the pump during the process of sterilization with steam.



The parts/materials suffer no damage if the indications specified in this manual are observed.

No cold liquid can enter the pump till the temperature of the pump is lower than 60°C (140°F).

The pump generates an important pressure drop through the sterilization process, use a by-pass circuit provided with a discharge valve is recommended for ensuring that the steam or overheated water sterilizes the circuit integrity.

#### **Maximum conditions during SIP process with steam or overheated water:**

- a) Maximum temperature: 140°C / 284°F
- b) Maximum time: 30 min
- c) Cooling: sterile air or inert gas
- d) Materials: EPDM/PTFE (recommended)  
FPM/NBR (not recommended)

## 8.7. DISASSEMBLY AND ASSEMBLY OF THE PUMP

The assembly and disassembly of the pumps should be done by qualified personnel. Make sure that the personnel read carefully this instruction manual and, in particular, those instructions which refer to the work they will perform.

### ATTENTION



Incorrect assembly or disassembly may cause damage in the pump's operation and lead to high repair costs and a long period of downtime.

INOXPA is not responsible for accidents or damages caused by a failure to comply with the instructions in this manual.

### Preparation

Provide for a clean working environment so some parts, including the mechanical seal, require very careful handling and others have close tolerances.

Check that the parts which are used are not damaged during transport. When doing this, you need to inspect the adjustment edge, the butted faces, the tight fit, burrs, etc.

After each disassembly, carefully clean the parts and check for any damage. Replace all damaged parts.

### Tools

Use the proper tools for assembly and disassembly operations. Use them correctly.

### Cleaning

Before disassembling the pump, clean it outside and inside.

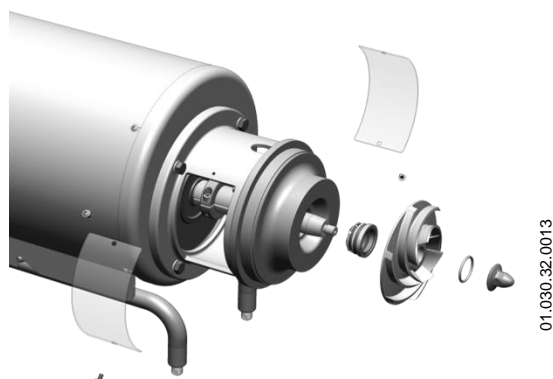
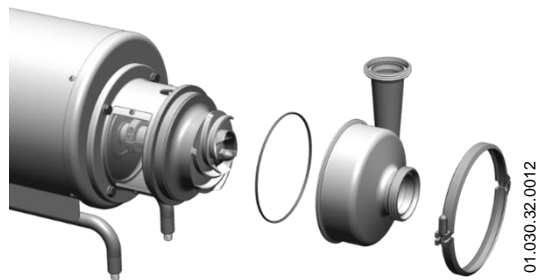


NEVER clean the pump by hand when it is running.

### 8.7.1. Pump and single mechanical seal

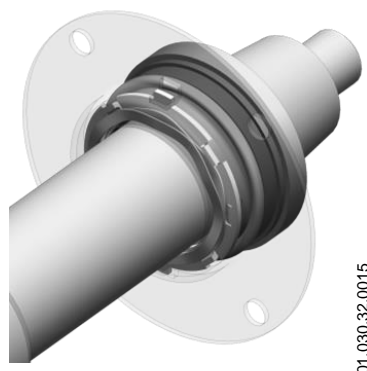
#### Disassembly

1. Remove the clamping ring (15) and disassemble the pump casing (01).
2. Check the condition of the O-ring (80) on the pump casing and replace if damaged.
3. Remove the screws (50) and the lantern protections (47).
4. Place an open-end wrench on the flat sides of the shaft (05) to prevent it from rotating.
5. Remove the impeller nut (45) and the O-ring (80A).
6. Pull out the impeller (02). If necessary, hit it with a dead blow using a plastic mallet to disengage the cone.
7. Remove the rotating part of the seal (08) from the rear side of the impeller (02).
8. Manually, remove the stationary part of the seal (08) which is located in the pump cover (03).
9. If the thrust washer and the seal spring need to be replaced, loosen the allen screws (51A) that secure the pump cover (03) and take it off. The loosen the allen screws (51) and remove the seal cover (09).
10. Check the spring and the thrust washer on the mechanical seal (08) and replace if necessary.

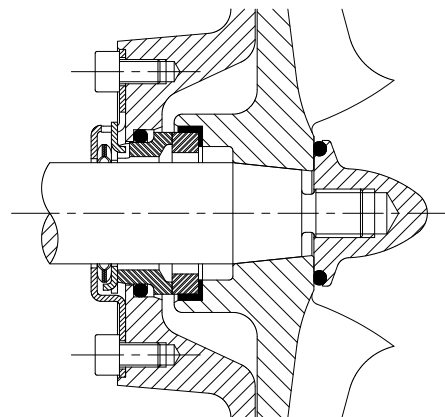


#### Assembly

1. Place the thrust washer of the mechanical seal (08) on the pump cover (03). Make sure that the four tabs centring the spring are facing outward.
2. Fit the spring on the thrust washer within the centring tabs. Place the seal cover (09) on the assembly and move it until the seal washer thrust tabs match the slots on the cover (09). Secure it with the allen screws (51).



3. Mount the pump cover (03) on the lantern (04) and secure it with the screws (51A).
  4. Fit the stationary part of the seal (08) on the pump cover (03) with the fingers. Make sure that the anti-rotation tabs match the slots on the seal.
  5. Fit the rotating part of the mechanical seal (08) on the rear side of the impeller (02) and make sure that it is level.
  6. Place the O-ring (80A) in the slot of the impeller nut (45).
  7. Place an open-end wrench on the flat sides of the shaft (05) to prevent it from rotating.
  8. Insert the impeller (02) on the pump shaft (05) and secure with the nut (45).
- 
9. Mount the pump casing (01) to the pump cover (03) and fix it with the clamping ring (15).
  10. Finally, reassembly the lantern protections (47) on the lantern (04) and fix them with the protector screws (50).



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### ATTENTION



When installing the new seal, use soapy water when fitting the different parts and gaskets to allow them to slide better. Apply it to the stationary as well as the rotating parts.

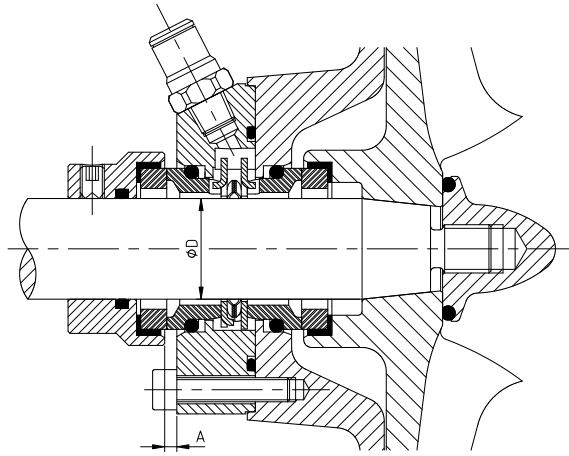
## 8.7.2. Double mechanical seal

### Disassembly

1. Remove the main seal following the instructions in chapter [8.6.1. Pump and single mechanical seal](#) up to point 8.
2. Loosen the allen screws (51A) and carefully remove the pump cover (03) taking care not to damage the stationary part of the secondary seal located therein.
3. Loosen the allen screws (51B) and remove the double seal cover (10) together with the stationary part of the secondary seal of the pump cover (03). Remove the spring and thrust washers.
4. Manually, remove the stationary part of the secondary seal (08) which is located in the double seal cover (10) as well as the O-ring (80C).
5. Loosen the set screw (55) and remove the double seal ring (30) on the shaft (05) along with the rotating part of the secondary seal.
6. Remove the rotating part of the secondary seal and the O-ring (80D) from the double seal ring.

### Assembly

1. Install the rotating part of the new secondary seal and the O-ring (80) on the double seal ring (30). Slide the assembly over the pump shaft (05).
2. Fit the stationary part of the secondary seal (08) and the O-ring (80C) with your fingers on the double seal cover (10).
3. Place the thrust washer of the primary seal (08) on the pump cover (03). Make sure that the four tabs centring the spring are facing outward.
4. Fit the spring on the thrust washer within the centring tabs. Place the thrust washer of secondary seal on the spring. Make sure that the four tabs centring the spring are pointing inward.
5. Place the double seal cover (10) together with the secondary stationary part and the O-ring (80C) on the pump cover (03) and move it until the thrust tabs on the washers of the primary and secondary seals match the slots of the stationary part of the secondary seal. Secure it with the allen screws (51B).
6. Mount the assembly of the pump cover (03) and the stationary part of the secondary seal to the lantern (04) and fasten with the screws (51A).
7. Slide the double seal ring (30) on the shaft (05), checking that the distances between the ring and the double seal cover are as shown below and tighten the set screw (55).



ØD (mm)	A (mm)
25	3
35	3,5

8. Install the primary seal following the assembly instructions for the single mechanical seal starting at point 4.

#### ATTENTION



When installing the new seal, use soapy water when fitting the different parts and gaskets to allow them to slide better. Apply it to the stationary parts on the cover as well as the rotating parts on the impeller and the double seal ring.

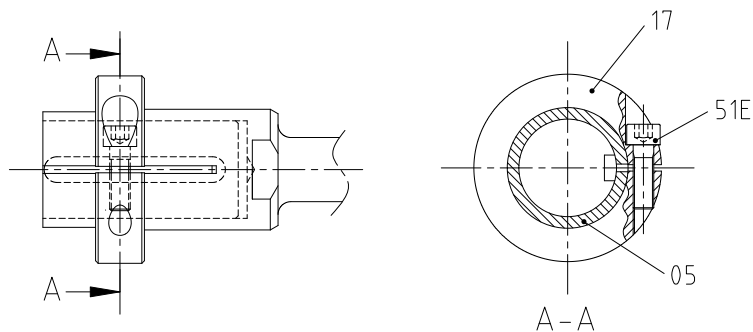
### 8.7.3. Installation and adjustment of the shaft

#### Disassembly

1. Loosen the allen screw (51E) on the shaft clamp (17).
2. Remove the shaft (05) along with the clamp (17).

#### Assembly

1. Mount the pump shaft (05) with the clamp (17) on the motor shaft.
2. Tighten the allen screw (51E) of the clamp only slightly and check that the pump shaft (05) can still turn. Make sure to fit the shaft clamp (17) as shown in the figure.



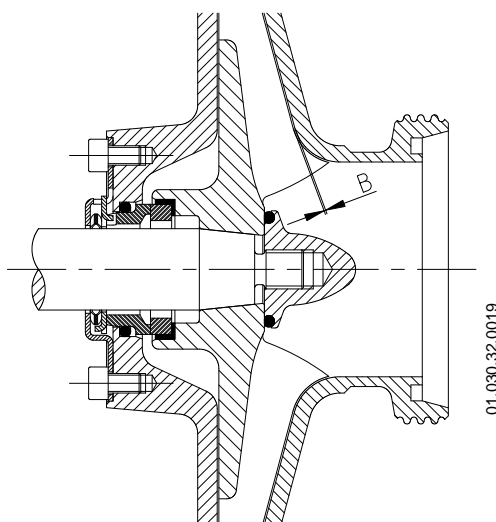
#### ATTENTION



Apply assembly grease on the thread and on the head of the clamp screw.

3. Fit the cover (03), the screws (51A) and tighten them.
4. Install the impeller (02) on the pump shaft and secure it with the lock nut (45). Place an open-end wrench on the flat sides of the shaft to prevent it from rotating.

5. Slide the impeller with the shaft (05) until it reaches the pump cover (03).
6. Install the pump casing (01) and secure it with the clamps (15).
7. With the help of a thickness gauge, move the pump shaft so that the impeller is located at the required distances B from the pump casing (01). 0,4 mm for 40-110, 40-140, 50-150, 65-175 y 80-175 and 0,5 mm for the rest.



8. Tighten the allen screw (51E) on the shaft clamp.
9. Remove the pump casing (01), the impeller (02) and the cover (03) and continue with the assembly of the mechanical seal.

## 9. Technical Specifications

Maximum operating pressure	1600 kPa (16 bar)
Temperature range	-10°C to 120°C (EPDM)
Maximum speed	3000 rpm (50 Hz) – 3600 rpm (60 Hz)
Noise level	61 to 80 dB(A) (see table for models)

### Materials

Parts in contact with the product	AISI 316L (1.4404)
Other stainless steel parts	AISI 304 (1.4301)
Seals in contact with the product	EPDM - standard FPM (other materials available upon request)
Other gaskets	NBR
Other materials for the seal	consult with INOXPA
External surface finish	matt
Internal surface finish	Polished $Ra \leq 0,8 \mu m$

### Mechanical seal

Type	Internal single or double seal, balanced
Material of rotating part	Silicon carbide (SiC) – standard
Material of stationary part	Graphite (C) – standard Silicon carbide (SiC)
Gasket material	EPDM – standard FPM
Water consumption (double seal)	0,25 to 0,6 l/min
Pressure (double seal)	from atmospheric to 1000 kPa (10 bar)

### Motor

Type	Three-phase asynchronous motor, IEC B35 type, 2 or 4 poles, IP55 protection, class F-insulation
Power	0,37 a 45 kW
Voltage and frequency	220-240 V $\Delta$ / 380-420 V Y, $\leq 4$ kW 380-420 V $\Delta$ / 660-690 V Y, $\geq 5,5$ kW

## 9.1. NOISE LEVEL

The indicated noise levels correspond to the standard pump, with maximum impeller and shrouded motor, running at approximately 2900 rpm, at the point of the best efficiency and with a motor with sufficient power.

These values were taken at a distance of 1 m from the pump and at a height of 1,6 m above the floor level. The measurements were carried out according to the standard EN 12639 / ISO 3746 Grade 3 with a tolerance of  $\pm 3$  dB(A).

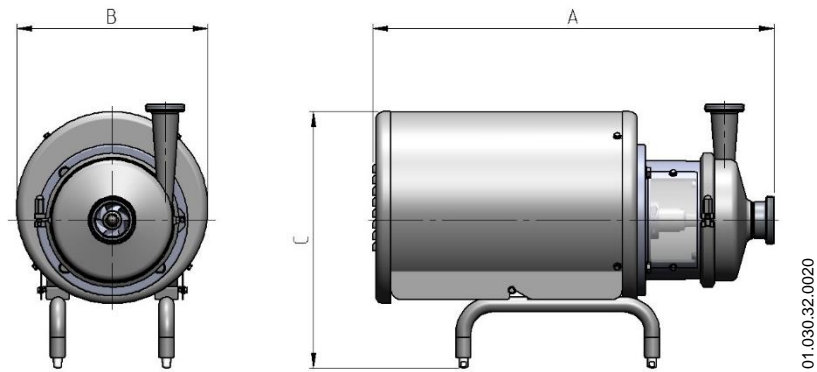
Pump type	Sound pressure $L_{pA}$ dB(A)	Sound power $L_{wA}$ dB(A)
HCP 40-110	61	74
HCP 40-150	63	75
HCP 40-205	70	84
HCP 50-150	71	84
HCP 50-190	78	92
HCP 50-260	70	84
HCP 65-175	72	85
HCP 65-215	78	92
HCP 65-250	79	93
HCP 80-175	77	90
HCP 80-205	80	94
HCP 80-240	77	91

It must be borne in mind that the noise levels can greatly increase if reducers, elbows or other fittings are installed near the pump.

## 9.2. WEIGHTS

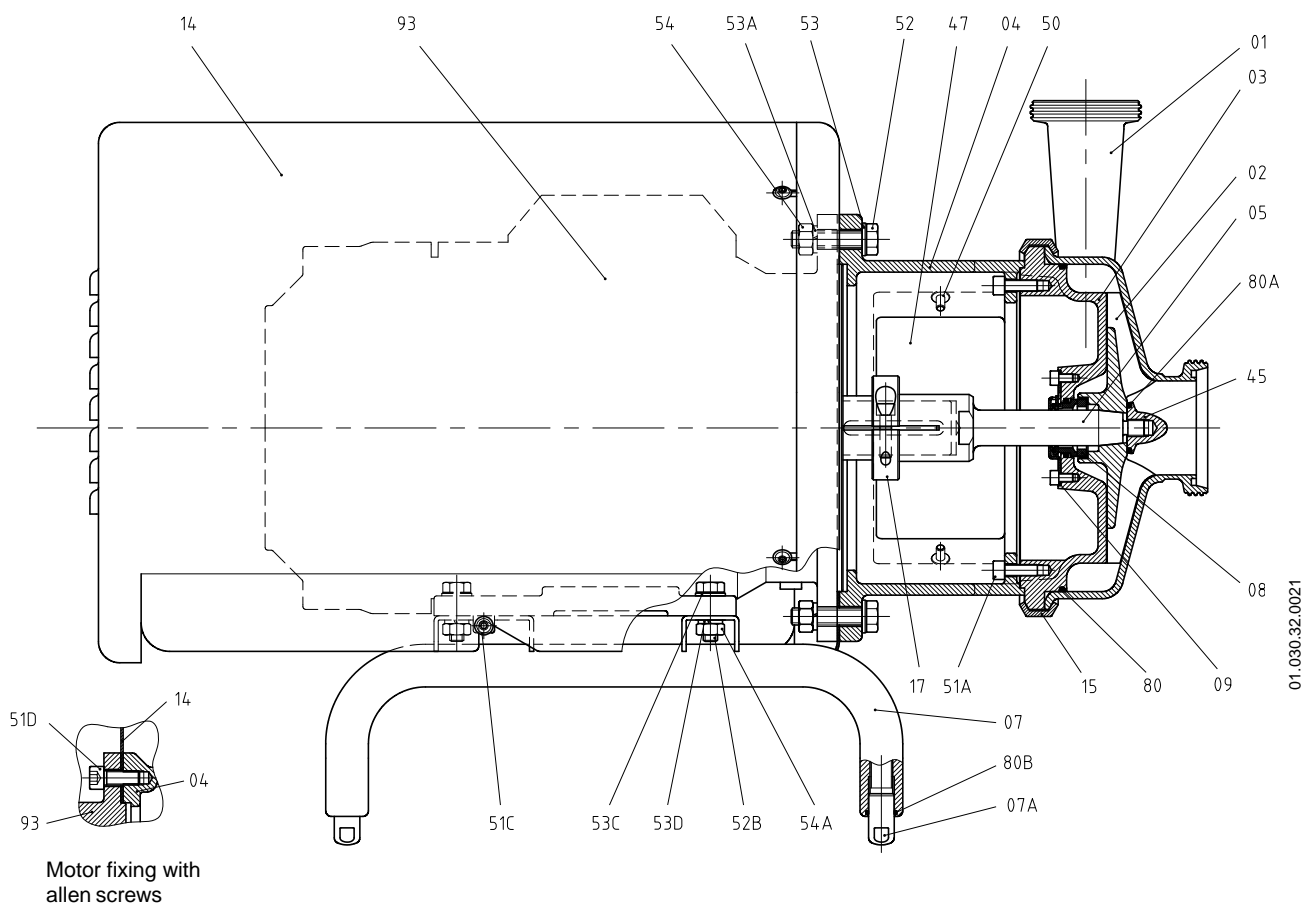
MOTOR																		
IEC	71		80		90			100	112		132		160			180	200	225
kW	0,37	0,55	0,75	1,1	1,5	2,2	2,2	3	3	4	5,5	7,5	11	15	18,5	22	30	45
HCP 40-110	18	19	26															
HCP 40-150			30	32	36	35												
HCP 40-205					42	41		52	58		77	86						
HCP 50-150			30		36	35		47		52								
HCP 50-190					42			52		57	77	85						
HCP 50-260											92	101	180	189	208	261		
HCP 65-175								55		60	80	88						
HCP 65-215											85	93	173	182	201			
HCP 65-250											92		180	189	208	261	312	
HCP 80-175									55	61	80	89	169	178				
HCP 80-205											85		173	182	201	253		
HCP 80-240											93	106		209	261	313		401

9.3. DIMENSIONS



Pump type	A (mm)	B (mm)	C (mm)
HCP 40-110	514	270	369
HCP 40-150	539	270	389
HCP 40-205	749	380	490
HCP 50-150	618	330	468
HCP 50-190	752	380	523
HCP 50-260	1018	465	637
HCP 65-175	781	380	518
HCP 65-215	1017	465	632
HCP 65-250	1059	650	717
HCP 80-175	1017	465	592
HCP 80-205	1022	465	647
HCP 80-240	1099	650	752

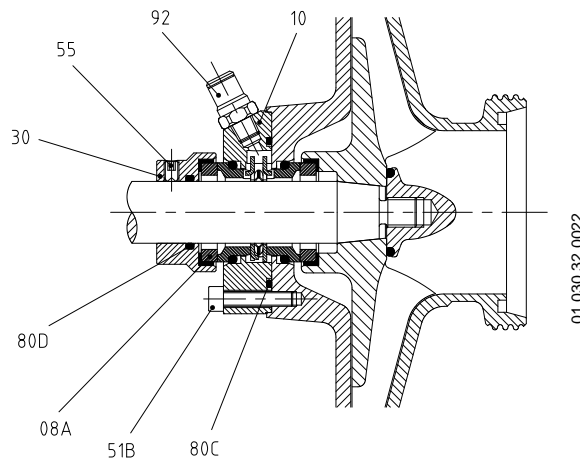
# 9.4. EXPLODED DRAWING AND PARTS LIST



Position	Description	Quantity	Material
01	Pump casing	1	AISI 316L
02	Impeller	1	AISI 316L
03	Pump cover	1	AISI 316L
04	Lantern	1	AISI 304
05	Shaft	1	AISI 316L
07	Motor leg	2	AISI 304
07A	Adjustable leg	4	AISI 304
08	Mechanical seal	1	-
09	Seal cover	1	AISI 316L
14	Shroud	1	AISI 304
15	Clamp pump casing	1	AISI 304
17	Clamp motor	1	AISI 304
45	Impeller nut	1	AISI 316L
47	Lantern protection	2	PETP
50	Protector screw	4	A2
51A	Screw	4	A2
51C	Screw	2	A2
51D	Allen screw	4	A2
52	Hexagonal screw	4	A2
52B	Hexagonal screw	4	A2
53	Flat washer	4	A2

Position	Description	Quantity	Material
53A	Grower washer	4	A2
53C	Flat washer	4	A2
53D	Grower washer	4	A2
54	Hexagonal nut	4	A2
54A	Hexagonal nut	4	A2
80	O-ring	1	EPDM
80A	O-ring	1	EPDM
80B	O-ring	1	EPDM
93	Motor	1	-

## 9.5. DOUBLE MECHANICAL SEAL



Position	Description	Quantity	Material
08A	Double mechanical seal	1	-
10	Double seal cover	1	AISI 316L
30	Double seal ring	1	AISI 316L
51B	Screw	4	A2
55	Stud	1	A2
80C	O-ring	1	EPDM
80D	O-ring	1	EPDM
92	Straight connector 1/8' BSPT D.8	2	AISI 316

NOTES



**How to contact INOXPA S.A.U.:**

Contact details for all countries are  
Continually updated on our website.

Please visit [www.inoxpa.com](http://www.inoxpa.com) to access the information.



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