

МОНТАЖ, ОБСЛУЖИВАНИЕ И ИНСТРУКЦИЯ
Система безразборной чистки SILPIG

**INSTALLATION, SERVICE AND
INSTRUCTIONS**
SILPIG PRODUCT RECOVERY SYSTEM



c/Telers, 54 Aptdo. 174
E-17820 Banyoles
Girona (Spain)



Original Manual
13.001.30.00EN_RevC
ED. 2010/11



EC DECLARATION OF CONFORMITY

(In accordance with Directive 2006/42/EC, annex II, part A)

We, the manufacturer:

c/ Telers, 54
17820 Banyoles (Girona) - Spain

Hereby declare that the products

FLUID RECOVERY SYSTEM

SILPIG

Name

Type

are in conformity with the provisions of the Council Directives:

Machine Directive 2006/42/EC. The products comply with the essential requirements of the aforementioned directive and the following Harmonised Standards:

UNE-EN ISO 12100-1/2:2004
UNE-EN 953:1997
UNE-EN ISO 13732-1:2007

Pressure equipment directive 97/23/EC, the stated equipment has been designed and manufactured in accordance with the requirements of this Directive.

Max working pressure: DN-40/1 1/2" to DN-80/3" = 10 bar

Diameter: DN-25 < X < or = DN-100

Equipment category: Category I, determined according to Article 3, Section 1.3^a, first paragraph, annex II, table 6

This material MUST have the CE marking.

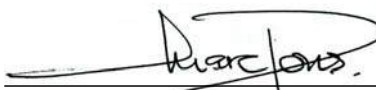
Conformity Evaluation Module: *A Module*

In conformity with **Regulation (CE) No. 1935/2004** on materials and objects intended to come into contact with foodstuffs (repealing 89/109/EEC), in accordance with which the materials in contact with the product do not transfer its constituents to the foodstuffs in quantities large enough to put human health at risk.

Declaration of Incorporation (Directive 2006/42/EC, annex II, part B):

The aforementioned equipment shall not be commissioned until the machine in which they will be incorporated has been declared as being in conformity with the Machine Directive.

Banyoles, 2012


Marc Pons Bague Technical Manager

1. Safety

1.1. INSTRUCTION MANUAL.

This instruction manual contains basic indications which should be fulfilled during the installation, starting and maintenance. The information published in the instruction manual is based on updated information. INOXPA reserves the right to modify this instruction manual without prior notice.

1.2. INSTRUCTIONS FOR START-UP.


This instruction manual contains vital and useful information to appropriately handle and maintain your equipment. Not only should the safety instructions indicated in this chapter be observed and fulfilled, but so should the special measures and recommendations included in the other chapters of this manual. These instructions should be kept in a safe location near the installation.

1.3. SAFETY.

1.3.1. Warning symbols.

	Danger for persons in general		Danger of injury caused by rotating equipment parts.
	Electrical danger		Danger! Caustic or corrosive agents.
	Danger! Suspended loads		Danger to the correct operation of the equipment.
	Commitment to safety at the workplace.		Protective goggles requirement.
	Strong magnetic field		

1.4. GENERAL SAFETY INSTRUCTIONS.

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


This equipment is suitable for use in food-processing.

Do not use in processes with products and/or temperatures that are not compatible with the sealing materials and/or the PIG. It is the responsibility of the system designer to determine this compatibility.

The equipment must only be handled by qualified staff.

The compatibility of the electrical equipment is the responsibility of the designer of the system or the person who determines its specifications.

1.4.1. During the installation.

 The *Technical Specifications* of Chapter 8 should always be observed.

The installation and use of the valve/actuator should always be carried out in accordance with applicable regulations regarding health and safety.

Do not use the equipment until you have checked that it is functioning properly. Once it has been assembled, repaired, cleaned, or a change has been made, connect the air supply and the electrical supply, and ensure that it has been assembled correctly with proper supervision of operation and leaks.



Check that the shafts are perfectly aligned. If they are not properly aligned, the stem, the shaft due to friction, bushing and seals may be damaged.

Firmly tighten all the static and connected parts to prevent them from coming loose. If the equipment operates at high frequency or is installed where there is substantial vibration, ensure that all the parts are firmly held in place.

Provide for possible pressure drops in the pneumatic circuit and/or faults in the electrical supply. This may lead to safety problems in the installation.

Provide for emergency shutdowns.

Check the operation of the equipment when restarting after an emergency or unexpected shutdown.



The shaft and the PIG are magnetised, DO NOT approach magnetic metal elements as they have a strong magnetic pull. Do not leave this item on metal tables or benches during handling. DO NOT place close to metal tools and/or objects that can be attracted by the magnetic field.

The working lifetime of the PIG greatly depends on the quality of the installation: Interior finishing of pipes, welds, cleanliness, and anything that may affect the smooth movement of the PIG.

The equipment must be installed and used in accordance with the good practices of the sector, and only by qualified staff.



During the installation, all the electric work should be carried out by authorised personnel.

1.4.2. During operation.



The *Technical Specifications* of Chapter 8 should always be observed. Under no circumstances can the limit values specified be exceeded.

Do not use in atmospheres where there are corrosive gases as this might damage the cylinder and the seals.

Do not use in atmospheres with strong magnetic fields as this may adversely affect both the PIG detectors and the piston.



The working lifetime of the PIG greatly depends on the quality of the installation: Interior finishing of pipes, welds, cleanliness, and anything that may affect the smooth movement of the PIG.

The equipment must be used in accordance with the good practices of the sector and by qualified staff.



NEVER touch the equipment and/or pipes that are in contact with the liquid during operation. If working with hot products, there is a risk of burns.

The PIG circulates through the tubes at high speeds so the circuit must be designed to be safe, so that it can NEVER get out during operation.

Do not handle the actuator when the installation is in operation and/or holds compressed-air pressure.

The degree of water-protection of the ball detectors and the actuator detector is IP 67 (completely protected from dust and immersion in water).

1.4.3. During maintenance



The *Technical Specifications* of Chapter 8 should always be observed.

NEVER disassemble the equipment until the pipes have been emptied. Bear in mind that the liquid in the pipe may be dangerous or extremely hot. Consult the regulations in effect in each country for these cases.

The pipes must be depressurised before opening any part of the circuit, as the PIG may escape at high speed and cause serious personal injury.

Do not leave parts loose on the floor.



When inspecting the equipment, first check on the measures preventing falling of displaced objects and loss of control of the equipment, etc. Then cut the supply pressure, electrical power, and release all the air. When starting up the machinery, check that everything is normal and that the actuator is in the correct position and the detectors are giving the correct signal.



The shaft and ball are magnetised, do not approach magnetic metal elements as they have a strong magnetic pull. Do not leave this item on metal tables or benches during handling. DO NOT place close to metal tools and/or objects that can be attracted by the magnetic field.

The working lifetime of the PIG greatly depends on the quality of the installation: Interior finishing of pipes, welds, cleanliness, and anything that may affect the smooth movement of the PIG.



All electrical work should be carried out by authorised personnel.

1.4.4. In compliance with the instructions.

Any non-fulfilment of the instructions may result in a risk for the operators, the environment and the machine, and may result in the loss of your right to claim damages.

This non-fulfilment may result in the following risks:

- Failure of important functions of the machines/plant.
- Failure of specific maintenance and repair procedures.
- Possibility of electric, mechanical and chemical risks.
- Will place the environment in danger due to the release of substances.

1.5. GUARANTEE.

Any guarantee will be cancelled immediately and as a matter of law and, in addition, we will require compensation for any claims of civil liability presented by third parties, in case:

- The installation and maintenance work has not been carried out according to the instructions of this manual.
- The repairs are not carried out by our personnel or have been carried out without our written authorisation.
- The parts used are not INOXPA original parts.
- Modifications have been carried out on our materials without written authorisation.
- The material has been badly used, incorrectly used, or used with negligence or has not been used according to the indications and intended use specified in this manual.

The general conditions of delivery already in your possession are also applicable.

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

2. Contents

1. Safety	
1.1. Instruction manual.	3
1.2. InstrucTIons FOR START-UP.....	3
1.3. Safety.....	3
1.4. GENeRAL SAFETY InstrucTIons.....	3
1.5. Guarantee.....	5
2. Contents	
3. Receiving and Installation	
3.1. Check the shipment.....	7
3.2. DELIVERY AND UNPACKING.....	7
3.3. IdentificaTION.....	8
3.4. LOCATION.....	8
3.5. Assembly.....	8
3.6. INSPECTING AND CHECKING.....	8
3.7. AIR connectION TO actuaTor.....	8
4. Start-up	
4.1. sTART-UP.....	9
4.2. OPERATION.....	9
5. Operating problems: Causes and solutions	
6. Maintenance	
6.1. General information.....	11
6.2. Maintenance.....	11
6.3. Cleaning.....	12
7. Assembly and disassembly	
7.1. DISASSEMBLY/ASSEMBLY OF THE EQUIPMENT.....	14
7.2. pig position.....	16
7.3. ORIENTATION OF THE EQUIPMENT.....	16
7.4. FLUID CONNECTIONS.....	17
7.5. POSITIONING THE DETECTOR.....	17
8. Technical Specifications	
8.1. Technical Specifications.....	18
8.2. EQUIPMENT DIMENSIONS.....	19
8.3. SILPIG EXPLODED VIEW AND PARTS LIST.....	20
8.4. PIG DETECTOR EXPLODED VIEW AND PARTS LIST.....	21

3. Receiving and Installation

3.1. CHECK THE SHIPMENT


The first thing to do on receiving the equipment is to verify that it matches the delivery note.

INOXPA inspects all the equipment before packing, although it cannot guarantee that the merchandise will arrive intact to the user. For this reason, the equipment received and any other article should be checked and, if it is found not to be in good condition and/or not all parts are included, the carrier should submit a report as soon as possible.

Each equipment has a manufacturing number engraved. Indicate the manufacturing number in all documents and correspondence.

The equipment will have a sticker with the following information.

Serial number →

	
PIGGING SYSTEMS	
MODELO: MODEL:	TAMAÑO: SIZE:
ACTUADOR/ACTUATOR	
PRESION DE TRABAJO:min WORKING PRESSURE:min	/máx /max
Nº FABRICACION: MANUFACTURING NR.:	AÑO YEAR

3.2. DELIVERY AND UNPACKING



INOXPA will not be responsible for the inappropriate unpacking of the valve and its components.

3.2.1. Delivery:

Check that all the parts indicated in the delivery slip:

- Equipment
- Its components (if supplied).
- Delivery slip.
- Instruction manual.

3.2.2. Unpacking:

- Remove all traces of packing material from the equipment or parts.
- Inspect the valve or its constituent parts for possible damage caused during transport.
- Avoid any possible damage to the valve and its components.

3.3. IDENTIFICATION

S0120 11 06 52 040

NOMINAL DIAMETER

DIN

040	050	065	080
-----	-----	-----	-----

Inches

038	051	063	076
-----	-----	-----	-----

SEALING MATERIAL

52 – EPDM

61 – Silicone

69 – Teflon

78 – Vitón

HOUSING MATERIAL

06 – AISI 316L

CONNECTION TYPE

CLAMP-77

WELD -00

DIN MALE -11

MODEL

SILPIG DIN – S0120

SILPIG O.D – S0121



The buyer or user will be responsible for the assembly, installation, starting and operation of the valve.

3.4. LOCATION.

Place the equipment in such a way as to facilitate inspections and checks. Leave room enough around the equipment for service, disassembly and maintenance operations. It is very important to be able to access the air-connection device of the actuator, even when in operation.

3.5. ASSEMBLY.

Once the location of the equipment has been established, it is possible to connect the piping using accessories (connectors). Excessive stress should be avoided during the assembly of the equipment and special attention should be given to the following:

- Vibration that may be produced in the installation.
- Expansion of the pipes during circulation of hot liquids.
- The weight that the pipes can withstand.
- Correct connection of the connectors and its seals.

3.6. INSPECTING AND CHECKING

Check the following before use:

- Check that the PIG is magnetised in the shaft.
- Apply compressed air three or four times, checking that the actuator completes the opening and closing operation smoothly.
- Check that the actuator pushes the PIG inside the piping and receives it with no problems.
- Check that the PIG detectors provide the correct signal when passing the ball, and also when the actuator moves if there are piston detectors.

3.7. AIR CONNECTION TO ACTUATOR.

- Connect and check the air connections (1/8" Gas thread). Double acting actuator.
- Check the air pressure and air characteristics (use clean air free of oils, chemical products, or any other product that could damage the actuator).
- The quality of the compressed air must conform to the specifications indicated in chapter 8 Technical Specifications.

4. Start-up

The start-up of the valve can be carried out provided the instructions indicated in Chapter 3 – *Receiving and Installation* are followed.

4.1. START-UP.



Before start-up, the personnel in charge should be duly informed of the operation of the equipment and the safety instructions to be followed. This instruction manual should be available to personnel at all times.

The following should be taken into consideration before starting up the equipment:

- Check that the pipe and valve are completely free from any traces of welding or other foreign matter. Carry out the cleaning of the system if required.
- Check that the alignment of the piston pushing the PIG with the actuator shaft enables smooth movement.
- Check that the compressed air pressure at the intake to the actuator is that indicated in the Technical Specifications (*Chapter 8*).
- Bear in mind the quality of the compressed air in accordance with the specifications described in chapter 8 Technical Specifications
- Check that the equipment is moving smoothly. If necessary, lubricate with special grease or soapy water.
- Check for possible leaks and check that all the pipes and connections are watertight and free from leaks.
- Start up the equipment.

4.2. OPERATION.



Do not modify the operating parameters for which the equipment has been designed without written prior authorisation from INOXPA.

Do not touch the moving parts of the coupling between the actuator and the body when the actuator is connected to the compressed air.

Danger of burns! Do not touch the valve or pipes when hot liquids are circulating or when cleaning and/or sterilisation is carried out.

5. Operating problems: Causes and solutions

PROBLEM	CAUSE/EFFECT	SOLUTION
EXTERNAL LEAK. THE PRODUCT LEAKS THROUGH THE SHAFT	The main seal is worn or deteriorated.	<ul style="list-style-type: none"> • Replace the seals. • Replace the seals with others of different material and more appropriate for the product.
JERKING OF THE SHAFT	<p>Seals jamming.</p> <p>The actuator does not operate effectively.</p> <p>The bushing is worn or deformed</p>	<ul style="list-style-type: none"> • Check alignment of the shaft and wear of the seals. • Check the compressed air supply pressure. • Replace with another or repair • Replace with another • Check shaft alignment
THE SHAFT DOES NOT PUSH OR COLLECT THE PIG CORRECTLY	<p>Deformation of gasket.</p> <p>Incorrect operation of the actuator.</p> <p>Worn actuator components.</p> <p>Dirt in actuator.</p>	<ul style="list-style-type: none"> • Replace the seals with others of different quality, if prematurely deteriorated. • Check the actuator. • Check the compressed air pressure.
THE PIG DETECTORS DO NOT DETECT	<p>The PIG is damaged or blocked up.</p> <p>The detectors are not working correctly.</p> <p>The PIG is driven by the compressed air at high speed and does not give the sensor time to detect it as it passes.</p>	<ul style="list-style-type: none"> • Recover the PIG. Use a detection pen to find the PIG in the installation • Replace the PIG • Check the connection • Lower the air pressure
PREMATURE WEAR OF THE BALL	<p>The PIG is driven by compressed air at high speed, creating considerable friction and hammering against the PIG collector.</p> <p>Installation in poor condition: poorly performed welds, dirty pipes, inadequate internal finishing, etc.</p>	<ul style="list-style-type: none"> • Lower PIG recovery air pressure • Check installation

6. Maintenance

6.1. GENERAL INFORMATION

This equipment, just like any other machine, requires maintenance. The instructions contained in this manual cover the identification and replacement of spare parts. The instructions have been prepared for maintenance personnel and for those responsible for the supply of spare parts.



Read thoroughly Chapter 8. *Technical Specifications*.

All replaced material should be duly eliminated/recycled according to the directives in effect in the area.

Assembly and disassembly of the valves must only be carried out by qualified staff.

Before beginning the maintenance work, ensure that the compressed air is disconnected and the pipes are not pressured.

6.2. MAINTENANCE.

The following is recommended for appropriate maintenance:

- A regular inspection of the equipment, of the actuator and its components.
- Keep a record of the operation of each equipment, noting any incidents.
- Always have spare seals in stock.

During maintenance, pay particular attention to the danger indications indicated in this manual.



Do not touch moving parts when the actuator is connected to the compressed air.

The valve and pipes should not be pressurised during maintenance.

The valve should not be hot during maintenance. Danger of burns!

6.2.1. Maintenance of the seals.

REPLACEMENT OF SEALS	
Preventive maintenance	Replace after twelve (12) months.
Maintenance after a leak	Replace at the end of the process.
Scheduled maintenance	Regularly check that there are no leaks and that the equipment operates smoothly. Keep a record for the equipment. Use statistics to plan inspections.
Lubrication	During assembly, apply lubricants compatible with the seal material. See the following table.

SEAL COMPONENT	LUBRICANT	Class NLGI DIN 51818
NBR/ FPM/ VMQ	Klübersynth UH 1 64-2403	3
EPDM/ NBR/ FPM	PARALIQ GTE 703	3

The time interval between each preventive maintenance may vary according to the working conditions to which the valve is submitted: Temperature, pressure, number of operations per day, type of cleaning solutions used, etc.

6.2.2. Storage

Storage of the valves should be carried out in an enclosed area, under the following conditions:

Temperature from 15°C to 30°C
Relative humidity <60%

Open-air storage of the equipment is **NOT** allowed.

6.2.3. PIG Maintenance

The wear of the PIG greatly depends on the quality of the installation: The surface finish of the piping, welds, cleanliness, and anything that impedes the proper passage of the ball. It is also an influential factor whether or not it is driven by air, frequency of use, etc. Regular inspection is therefore recommended according to the characteristics of the installation and its use. Visually check that the PIG has not been deformed, worn, or cracked. The PIG must be replaced if any such defects are detected.

6.2.4. Spare parts

To request spare parts, it is necessary to indicate the type of equipment, the code and the description of the part which can be found in the Technical Specification chapter.

6.3. CLEANING



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

Use rubber gloves during the cleaning process.



Always use protective goggles.

6.3.1. Automatic CIP (cleaning-in-place)

If the valve is installed in a system provided with the CIP process, its disassembly will not be required.

Cleaning solutions for CIP processes.

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

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

1 Kg NaOH + 100 l. of water = cleaning solution

or

2.2 l. NaOH at 33% + 100 l. of water = cleaning solution

b) Acid solution: 0.5% by weight of nitric acid (HNO₃) at 70°C (150°F)

0.7 litres HNO₃ at 53% + 100 l. of water = cleaning solution



Check the concentration of cleaning solutions; it may cause the deterioration of the watertight seals of the valve.

To remove any remains of cleaning products, ALWAYS perform a final rinse with clean water on completion of the cleaning process.



Before beginning the disassembly and assembly work, clean the equipment inside as well as outside.

6.3.2. Automatic SIP (sterilization-in-place)

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



Do NOT start the equipment 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 equipment till the temperature of the equipment is lower than 60°C (140°F).

Maximum conditions during the SIP process with steam or overheated water

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

7. Assembly and disassembly



Proceed with caution. There is danger of personal injury.

Assembly and disassembly of the valves must only be carried out by qualified staff.

Always disconnect the compressed air before proceeding with any assembly or disassembly operations. Do not touch moving parts when the actuator is connected to the compressed air.

The equipment and pipes should not be pressurised during assembly and disassembly.

The valve should not be hot during assembly and disassembly. Danger of burns!



The following tools are required to disassemble the valve:

- 4mm Allen key and 2 11m fixed wrenches (DN- 1.5", DN-2", DN-40, and DN-50)
- 6mm Allen key and 2 17mm fixed wrenches (DN-2.5", DN-3", DN-65, and DN-80)

7.1. DISASSEMBLY/ASSEMBLY OF THE EQUIPMENT

Disassembly

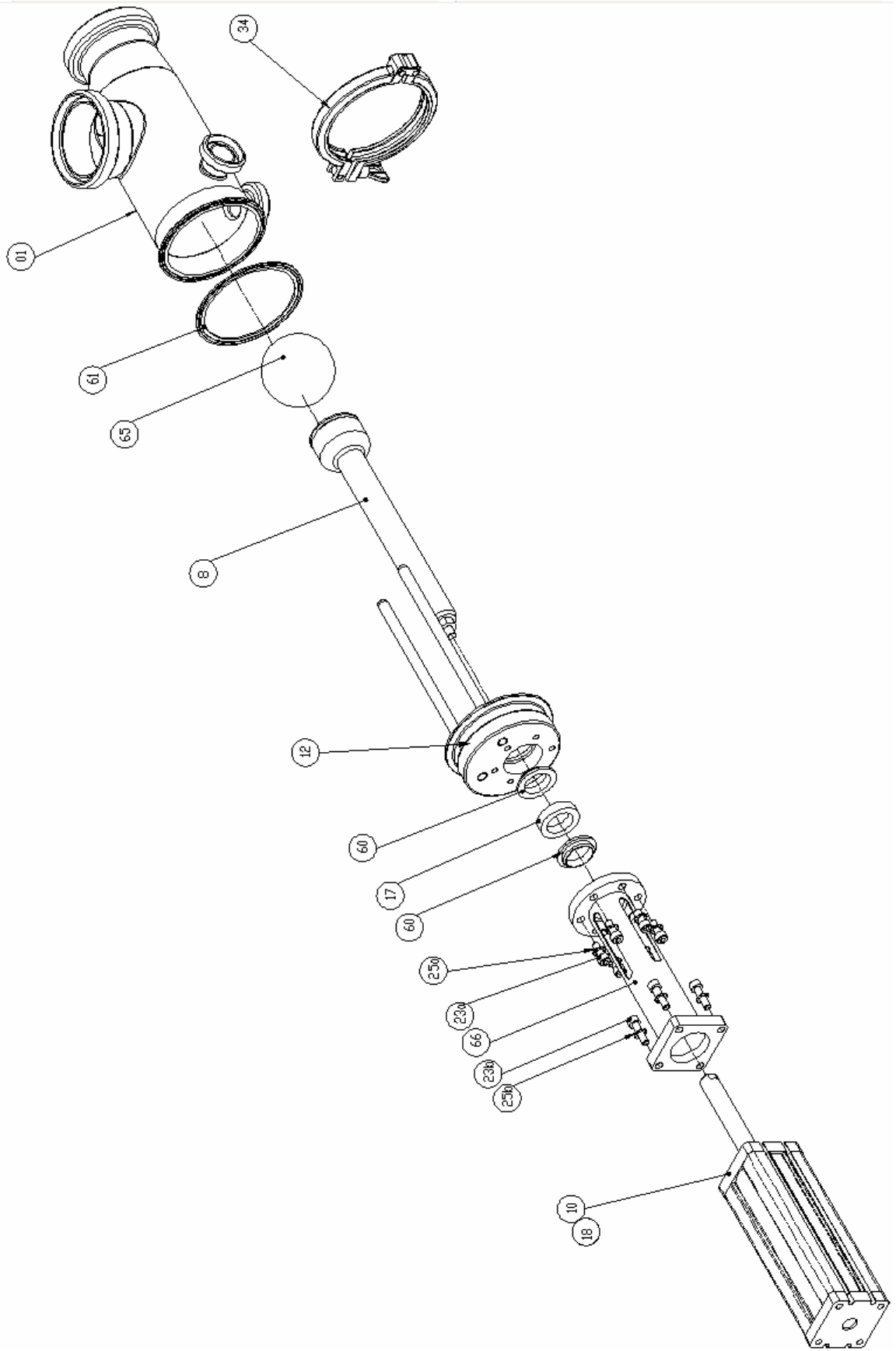
1. Disconnect the compressed air from the actuator (10).
2. Remove the clamp (34).
3. Remove the body assembly (01) from the rest and remove the gasket (61).
4. Handle the ball (65) carefully as it is magnetic (see [section -1.4.1](#))
5. Remove the screws (23b) and their washers (25b) from the actuator (10).
6. Remove the shaft (08) from the actuator (10) (unthread shafts)
7. Remove screws (23a) and their washers (25a)
8. Remove lantern (66)
9. Remove seals (60) and bushing (17)
10. If necessary, disassemble the pipe detectors

Assembly

11. Place seals (60) and bushing (17) on the cover (12)
12. Mount the lantern (66) in the cover (12) with screws (23a) and washers (25b)
13. Pass the shaft (08) through the cover hole (12)
14. Connect the shaft (08) with the actuator (10), thread and ensure the thread is fixed with a Loctite 242 glue.
15. Connect the lantern (66) to the actuator (10) with screws (23b) and washers (25b)
16. Place the gasket (61) on the cap (12)
17. Place the body (01)
18. Connect the body (01) to the cap (12) using the clamp (34)
19. Place ball detectors. It must be placed at least 100 mm from the outlet hole so that it does not interfere with the ball's magnetic field. (see section (7.5))
20. Connect the compressed air.



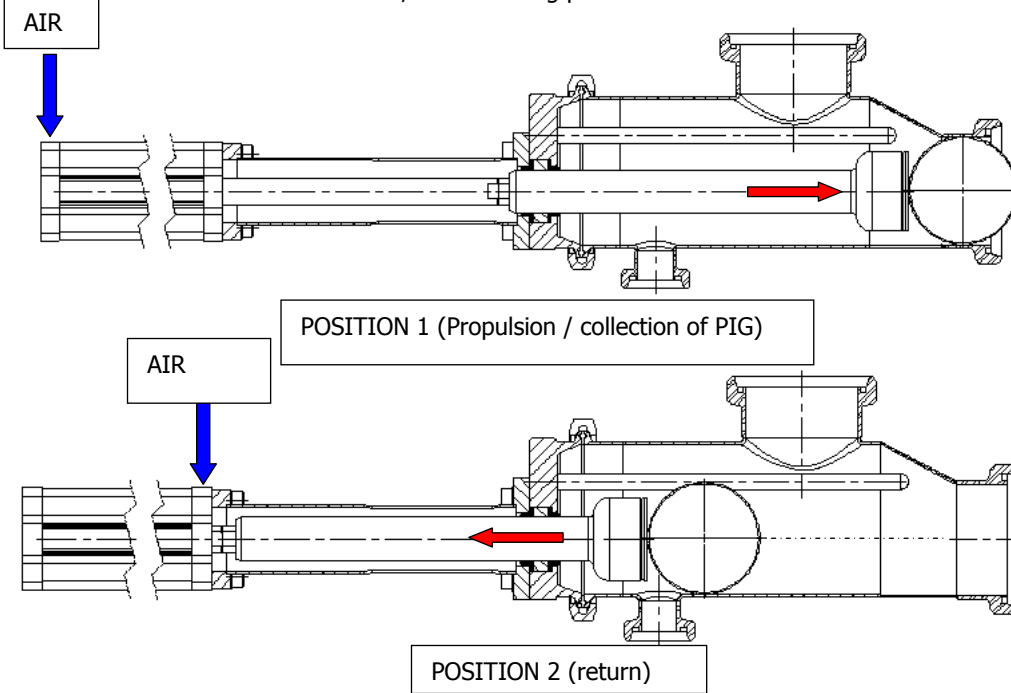
Before starting up the equipment, operate the actuator several times to ensure that it is moving smoothly.



7.2. PIG POSITION

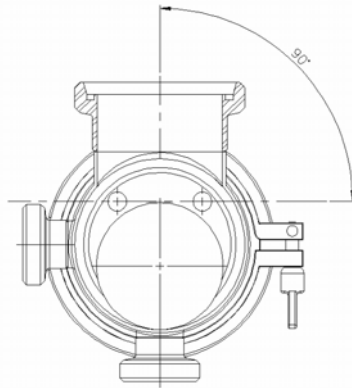
The position of the PIG (65) must be checked during assembly/disassembly or replacement of the actuator.

- POSITION 1: When the PIG is introduced into the pipe or is in a position awaiting the ball.
- POSITION 2: when the PIG returns, it is in resting position.

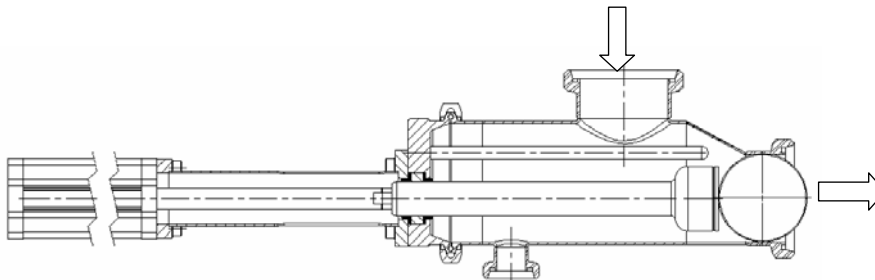


7.3. ORIENTATION OF THE EQUIPMENT

The guide rods of the PIG must remain on a perpendicular plane to the shaft of the outlet hole.



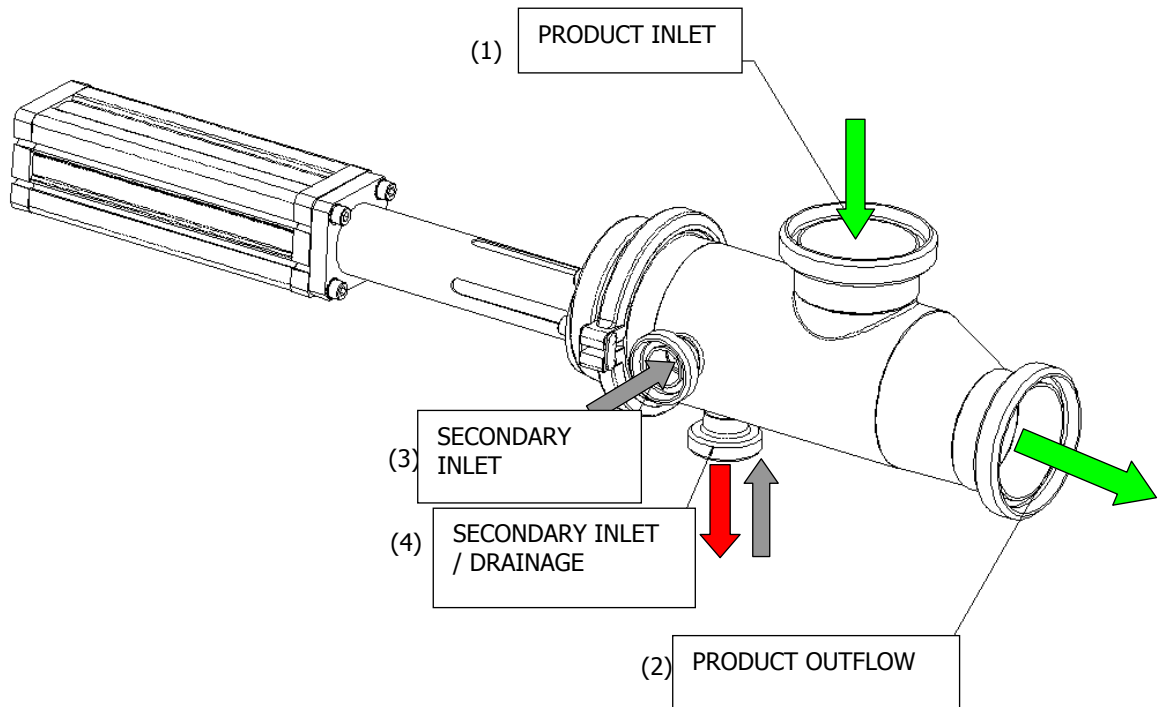
The equipment must be mounted horizontally, and the flow of the product must be in the direction indicated in section 7.4 Fluid connections



7.4. FLUID CONNECTIONS

The equipment has 4 holes, two of which are main ones: Product Inlet (1) and Outlet (2), which are connected to the main piping of the installation, and two smaller secondary holes (3 and 4) for drainage and inflow of the ball-driving fluid and/or CIP. Depending on the requirements, both secondary inlets or only one inlet (4) may be used while alternating between passage of the drive fluid and drainage with a valve. Such design is up to the installation designer.

Drainage must necessarily have the port (4) as this is the one that is designed for drainage. If only (4) is used, (3) must be capped with a blind bushing and standard INOXPA seal.

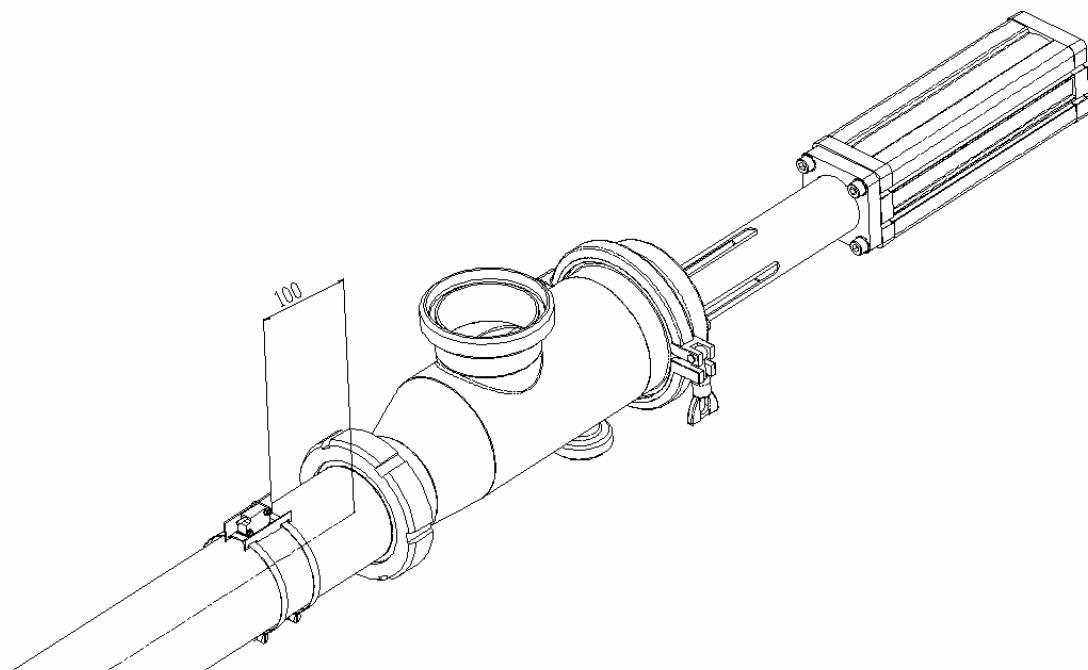


7.5. POSITIONING THE DETECTOR

The PIG detector must be placed at a certain distance from the outlet, as the shaft's magnetic field may interfere with the detection, and the detector may give a signal even if the PIG has not passed. Place the detector at a distance of between 100 and 120 mm from the equipment outlet. Check that the detector is functioning correctly before starting up the equipment.

DO NOT connect the detector before carefully reading the manual and the technical document for the detector.

The connection must be made only by qualified staff.



8. Technical Specifications

8.1. TECHNICAL SPECIFICATIONS

VALVE GENERAL DATA		
Maximum working pressure	DN-40 / 80 DN-1.5"/3"	10 bar
Maximum working temperature	120°C (250°F) EPDM standard seals (Other seals shall be adapted for higher temperatures)	
Surface finish	In contact with the product: $Ra \leq 0.8 \mu m$ External surfaces: satin-finished	

EQUIPMENT MATERIALS	
Parts in contact with the product	AISI 316L (1.4404)
Other steel parts	AISI 304 (1.4301)
Seals in contact with the product	EPDM (Standard) - NBR - VITON - SILICONE.
Surface finish	Parts in contact with the product. < $Ra. 0,8\mu m$
Type of connections	DIN 11851, BS-RJT, SMS, Clamp, Flanges, Macon.

PNEUMATIC ACTUATOR GENERAL DATA	
Cycle	Double acting
Compressed air pressure (Actuator)	5-7 bar (72-101 PSI)
Compressed air quality	In accordance with DIN/ISO 8573.1 <ul style="list-style-type: none"> o <u>Solid-particle content</u>: Class-3 quality / Max. particle size 5 microns / Max. particle density 5 mg/m³ o <u>Water content</u>: Class-4 quality / max. condensation point +2 °C. If the equipment operates at high altitude or low ambient temperature, the condensation point must be adapted accordingly. o <u>Oil content</u>: Class-5 quality, preferably oil-free / max. 25 mg oil per 1 m³ air.
Continuous working temperature	-10°C to +60°C
Air connections	R1/8" (Gas)

RECOMMENDATIONS OF USE:

The maximum admissible output depends on the model and viscosity of the fluid driving the PIG. No greater than 1.5 m/s water velocity is generally recommended. In the case of using compressed air as the PIG propellant, you should not drive the PIG with dry pipes. The allowable air pressure depends on the model, conditions of use and the status of the installation. Pressure is recommended to increase progressively until adequate pressure. Generally the recommended initial pressure boosting product is between 1 to 2 bar, and may increase to a maximum of 4-5 bar, depending on the product and working conditions.

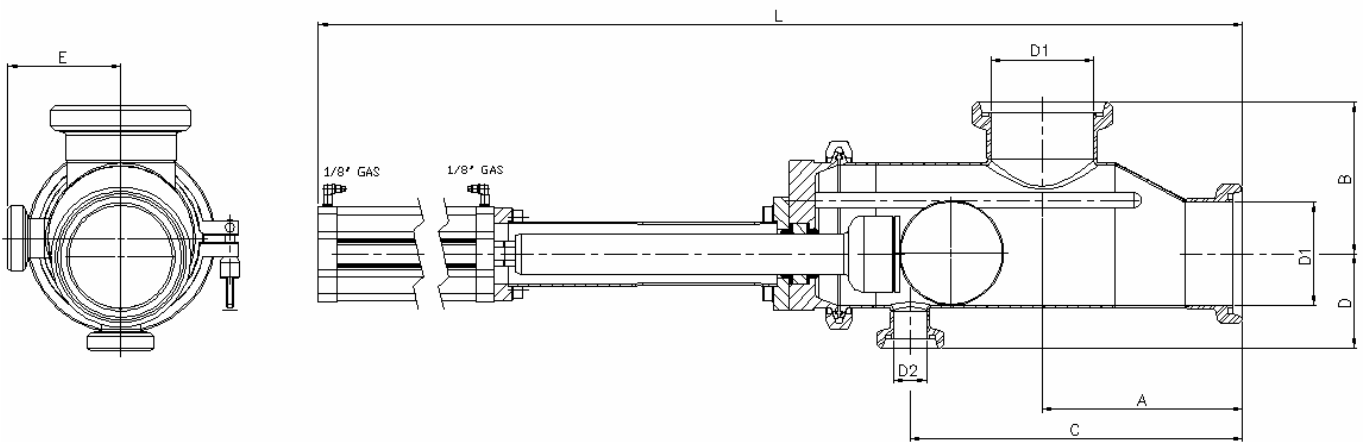


When there is no product in the pipe, the return in the PIG should be done at low pressure. If the impelling fluid is compressed air, a pressure of return between 0,5 – 1 bar is recommended, depending on the installation, model and conditions of use. In case of doubt, please consult INOXPA because a speed of return too high might seriously damage the PIG system.

Tools/assembly tightening torque

Equipment size	DN-40 / 50 DN-1.5" / 2"	DN-65 / 80 DN-2.5" / 3"
Allen key	4	6
Tightening torque	7 Nm	10 Nm

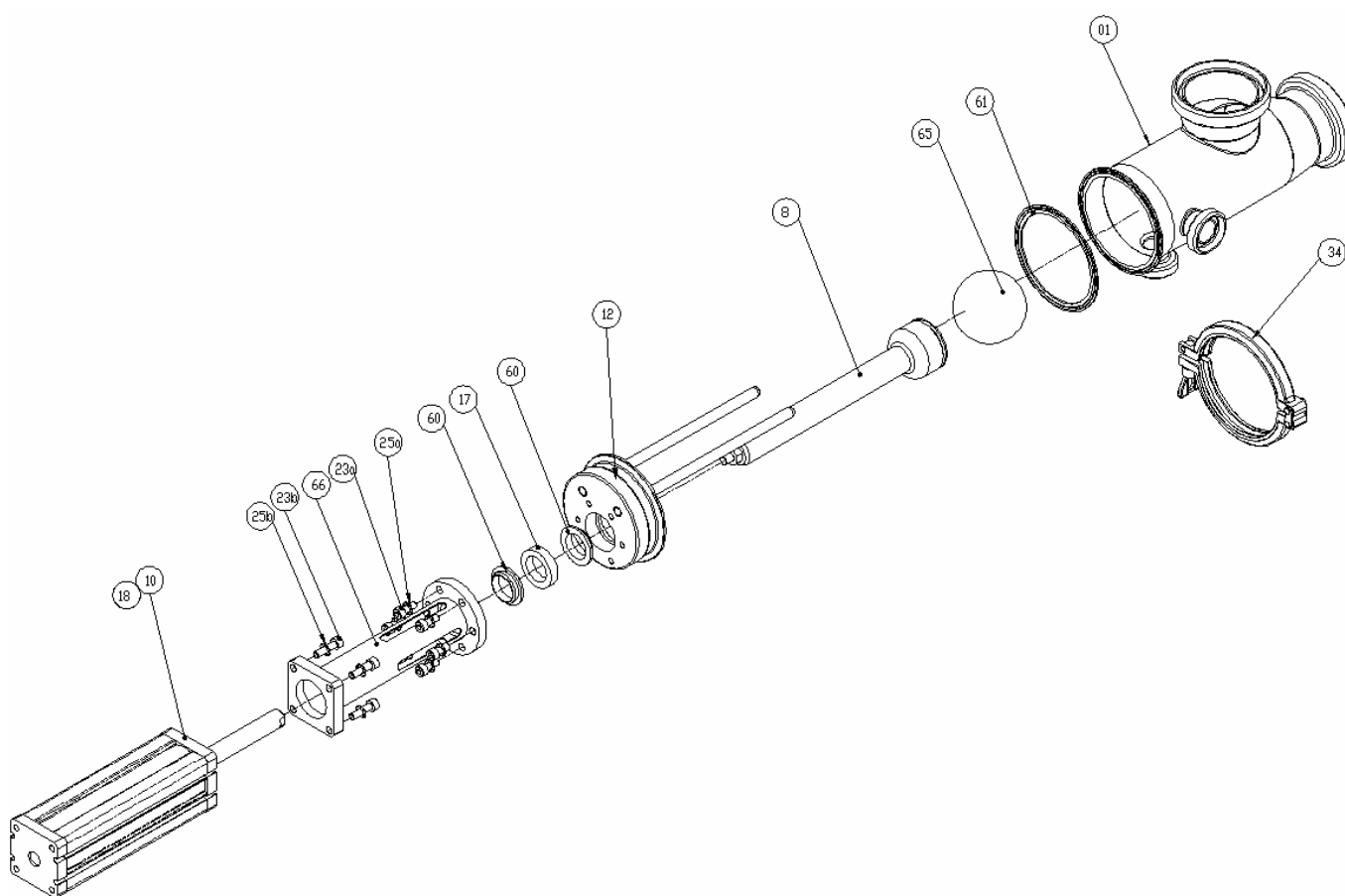
8.2. EQUIPMENT DIMENSIONS



DN	D1	D2	A	B	C	D	E	L*	DN	D1	D2	A	B	C	D	E	L*
40	38	26	116	91	173	52	74	588	1 1/2"	34.8	22.1	115	88	169	50	74	586
50	50	26	104	87	168	58	74	589	2"	47.5	22.1	104	80	167	56	74	585
65	66	26	159	122	255	67	89	836	2 1/2"	60.2	22.1	159	113	250	64	88	822
80	81	26	156	105	262	75	89	839	3"	72.9	22.1	141	107	245	70	88	824

* L may vary according to the actuator to be mounted. The length indicated is the length of the standard INOXPA actuator.

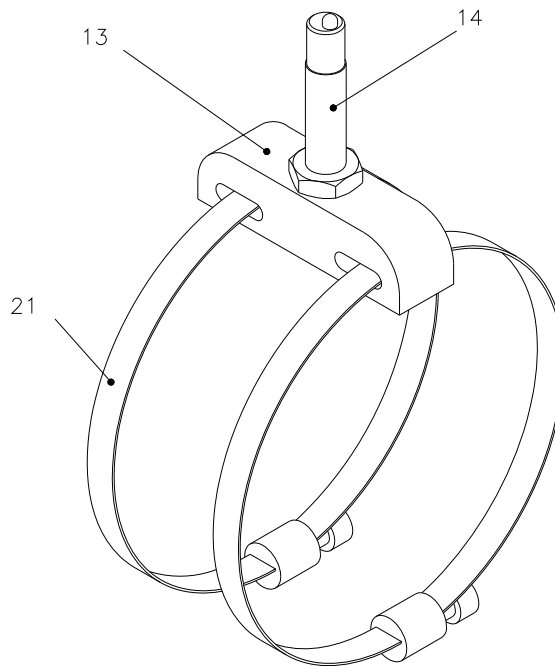
8.3. SILPIG EXPLODED VIEW AND PARTS LIST



POS	DESCRIPTION	CODE			
		DN-40	DN-50	DN-65	DN-80
01	BODY	1S020-0110006040	1S020-0110006050	1S020-0110006065	1S020-0110006080
08	SHAFT	1S020-0800006040	1S020-0800006040	1S020-0800006065	1S020-0800006065
10	PNEUMATIC PISTON	1S020-1000020040	1S020-1000020040	1S020-1000020065	1S020-1000020065
12	CASING COVER	1S020-1200006040	1S020-1200006050	1S020-1200006065	1S020-1200006080
17	GUIDE BUSHING	1S020-1700076040	1S020-1700076040	1S020-1700076065	1S020-1700076065
18	ELBOW 1/8" BSP	1P120-0030000623	1P120-0030000623	1P120-0030000623	1P120-0030000623
23a	DIN 912 ALLEN SCREW	1T112-0502004	1T112-0502004	1T112-0502004	1T112-0502004
23b	DIN 912 ALLEN SCREW	1T112-0803504	1T112-0803504	1T112-0803504	1T112-0803504
25b	WASHER DIN 127 M8 (A2)	1T427-0800004	1T427-0800004	1T427-0800004	1T427-0800004
25a	WASHER DIN 127 M5 (A2)	1T427-0500004	1T427-0500004	1T427-0500004	1T427-0500004
34	CLAMP	R0720-004065	R0720-004065	R0720-004114	R0720-004114
60	SHAFT SEAL (EPDM)	1S020-0500052040	1S020-0500052040	1W501-0540052040	1W501-0540052040
	SHAFT SEAL (VITON)	1S020-0500078040	1S020-0500078040	1W501-0500078040	1W501-0500078040
61	CLAMP SEAL (EPDM)	R1760-050076	R1760-050076	R1760-050104	R1760-050104
	CLAMP SEAL (VITON)	R1760-080076	R1760-080076	R1760-080114	R1760-080114
65	PIG (SILICONE)	S8000-6100040	S8000-6100050	S8000-6100065	S8000-6100080
	PIG (EPDM)	S8000-5200040	S8000-5200050	S8000-5200065	S8000-5200080
	PIG (VITON)	S8000-7800040	S8000-7800050	S8000-7800065	S8000-7800080
66	LANTERN	1S020-2100004040	1S020-2100004040	1S020-2100004065	1S020-2100004065

POS	DESCRIPTION	CODE			
		DN-1 1/2"	DN-2"	DN-2 1/2"	DN-3"
01	BODY	1S020-0170106040	1S020-0170106050	1S020-0170106063	1S020-0170106076
08	SHAFT	1S020-0800006040	1S020-0800006040	1S020-0800006065	1S020-0800006065
10	PNEUMATIC PISTON	1S020-1000020040	1S020-1000020040	1S020-1000020065	1S020-1000020065
12	CASING COVER	1S020-1200006040	1S020-1200006050	1S020-1200006063	1S020-1200006080
17	GUIDE BUSHING	1S020-1700076040	1S020-1700076040	1S020-1700076065	1S020-1700076065
18	ELBOW 1/8" BSP	1P120-0030000623	1P120-0030000623	1P120-0030000623	1P120-0030000623
23a	DIN 912 ALLEN SCREW	1T112-0502004	1T112-0502004	1T112-0502004	1T112-0502004
23b	DIN 912 ALLEN SCREW	1T112-0803504	1T112-0803504	1T112-0803504	1T112-0803504
25b	WASHER DIN 127 M8 (A2)	1T427-0800004	1T427-0800004	1T427-0800004	1T427-0800004
25a	WASHER DIN 127 M5 (A2)	1T427-0500004	1T427-0500004	1T427-0500004	1T427-0500004
34	CLAMP	R0720-004065	R0720-004065	R0720-004114	R0720-004114
60	SHAFT SEAL (EPDM)	1S020-0500052040	1S020-0500052040	1W501-0540052040	1W501-0540052040
	SHAFT SEAL (VITON)	1S020-0500078040	1S020-0500078040	1W501-0500078040	1W501-0500078040
61	CLAMP SEAL (EPDM)	R1760-050076	R1760-050076	R1760-050104	R1760-050104
	CLAMP SEAL (VITON)	R1760-080076	R1760-080076	R1760-080114	R1760-080114
65	PIG (SILICONE)	S8000-6101040	S8000-6101050	S8000-6101063	S8000-6101076
	PIG (EPDM)	S8000-5201040	S8000-5201050	S8000-5201063	S8000-5201076
	PIG (VITON)	S8000-7801040	S8000-7801050	S8000-7801063	S8000-7801076
66	LANTERN	1S020-2100004040	1S020-2100004040	1S020-2100004065	1S020-2100004065

8.4. PIG DETECTOR EXPLODED VIEW AND PARTS LIST



PART N°	DESCRIPTION	CODE			
		DN-1 1/2" DN-40	DN-2" DN-50	DN-2 1/2" DN-65	DN-3" DN-80
13	SUPPORT	1S900-42088040	1S900-42088040	1S900-42088040	1S900-42088040
14	DETECTOR	1S900-330000	1S900-330000	1S900-330000	1S900-330000
21	FLANGE	1S900-34003065	1S900-34003065	1S900-34003040	1S900-34003040

<http://k-tep.com.ua/>

✉ k-tep@ukr.net

■ Office +38 044 2091823

■ МТС +38 066 9076563

■ Киевстар +38 098 6909428

Skype: [k-teppumps](#)

Замечания

Условия поставки: DDP склад г. Киев

Заметки

Время поставки рассчитано согласно дате предложения и изменяется в зависимости от даты подтверждения заказа.

Размещая заказ, покупатель принимает предложение и все спецификации, характеристики и условия, указанные в данном документе.