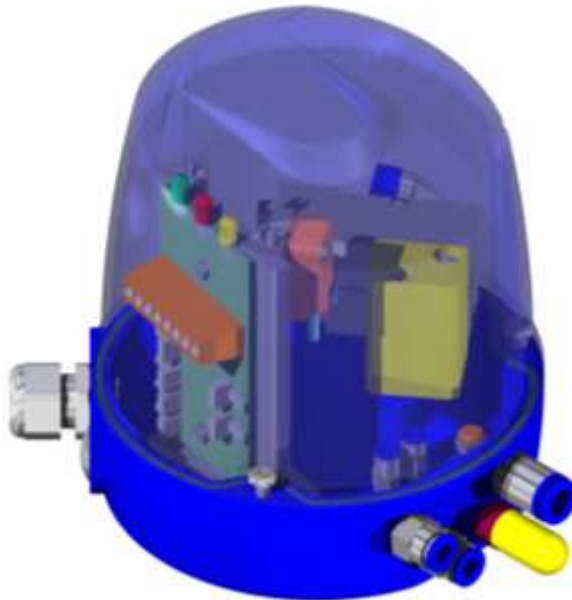




## INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

# C-TOP control head



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Original Manual

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## Declaration of Incorporation

The manufacturer: **INOXPA, S.A.**  
c/ Telers, 57  
17820 Banyoles (Girona), Spain

herewith declares that the machine:

### **C-TOP Control Head**

with the serial number: \_\_\_\_\_

conforms to the relevant provisions of the following directives:

Low voltage Directive 2006/95/EC  
Electromagnetic Compatibility Directive 2004/108/EC

It also declares that the technical documentation for this partly completed machinery has been developed in compliance with Appendix VII Section B and it agrees to issue this documentation as and when required by the national authorities.

The aforementioned partly completed machinery shall NOT be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the Machinery Directive, as required by Appendix II A.

Identification of the person empowered to draw up the Declaration on behalf of the manufacturer, and qualified to compile the technical file established by the Community:

Banyoles, 8 January 2014

David Reyer Brunet  
Technical Office Manager

# 1. Safety

## 1.1. INSTRUCTION MANUAL

This instruction manual contains the basic instructions that must be followed during installation, commissioning and maintenance work.

The information given herein is based on the most up-to-date data available.

INOXPA reserves the right to modify this instructions manual without having to give prior notice.

## 1.2. COMMISSIONING INSTRUCTIONS

This instruction manual contains both essential and useful information in order that your valve be properly handled and maintained.

Not only should the safety instructions set forth in this chapter be obeyed, but all those special measures and recommendations that have been added to other chapters herein must also be observed. It is extremely important that these instructions be kept in a set place near the installation.

## 1.3. SAFETY

### 1.3.1. Warning signs



**Danger for people in general**



**Danger of injury caused by rotating parts of the equipment.**



**Danger! Electricity**



**Danger to the proper operating of the machine.**



**Obligation to ensure safety at work.**

## 1.4. GENERAL SAFETY INSTRUCTIONS



**Please read the instruction manual carefully before installing and commissioning the control head. Should you have any doubts or queries, contact INOXPA.**

### 1.4.1. During the installation procedure



**Your must always bear in mind the *Technical Specifications* set forth in Chapter 8.**

**The installation and use of the C-TOP control head must always be carried out in accordance with health and safety rules that are to be applied.**

**Before putting the valve / actuator into operation, check to make sure that it has been correctly assembled and that the shaft has been perfectly aligned. Incorrect alignment and/or excessive force applied during the securing of the control head may give rise to serious mechanical problems in the same.**



**During the installation procedure, all the electrical work must be carried out by duly authorised personnel.**

### 1.4.2. During operation



**You must always bear in mind the *Technical Specifications* set forth in Chapter 8. The limit values that have been set must NEVER be exceeded.**

**NEVER touch the valve and/or pipes that come into contact with the liquid whenever the valve is in service. If it works with hot products, there is a risk of getting burned.**



The valve / actuator has rotating parts. Fit the head with great care, and do not put either hands or fingers on the piston area, or on the indicated areas when this is connected up to the compressed air. Failure to do so could produce serious injuries.



NEVER sprinkle the internal parts of the head with water. Position the cover and secure it with the screws that have been supplied after doing any maintenance work.

1.4.3.

#### 1.4.4. During Maintenance



You must always bear in mind the *Technical Specifications* set forth in Chapter 8.

NEVER strip the control head if the valve or installation is in service. Make sure that the compressed air supply has been shut off.

Do not leave loose parts on the floor.



All electrical work must be carried out by duly authorised personnel.

1.4.5.

#### 1.4.6. Compliance with the instructions

Any failure to comply with the instructions could endanger the operators, the environment and the machine, and could result in the loss of any rights to claim damages.

Failure to observe these instructions could carry the following risks:

- Serious operational failure of the machine / plant.
- Specific maintenance and fault repair procedures.
- The threat of electrical, mechanical and chemical risks.
- The environment may be endangered by the substances released.

### 1.5. GUARANTEE

Any guarantee will immediately become fully null and void, and what is more, we will be fully compensated for any civil liability claim made against us by third parties, in the event that:

- The installation and maintenance work has not been carried out in accordance with the instructions set forth in this manual.
- The repairs have not been carried out either by a member of our staff, or have been done without our company having issued prior written authorisation.
- The parts used are not original INOXPA pieces.
- Modifications have been carried out without prior written consent.
- The material has been badly, incorrectly or negligently used, or has not be used in accordance with the instructions and end set forth in this manual.

The general delivery conditions already in your possession also apply

Should you have any doubts or require more in-depth explanations about particular data (adjustments, assembly, stripping...) please do not hesitate to contact us.

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# 3. General Information

## 3.1. DESCRIPTION

The **C-TOP** is a pneumatic control head designed to assure the optimum control of INOXPA process valves. It is compatible with the majority of PLC (Programmable Logic Controllers) automated systems, with Digital communication, or with bus (AS-Interface).

It is fitted to the upper part of the pneumatic actuator of the process valve in order to activate and provide remote electrical indication of the operating position of the valve. The indicators can be of two types:

- microswitches (with mechanical contact)
- proximity inductive detectors (without contact)

**C-TOP can be fitted with any process valve available in the food, drink and biopharmaceutical industries.**

## 3.2. OPERATING PRINCIPLE

The **C-TOP** is a control head that includes signalling and command devices to control all types of (piston) process valves. This element incorporates the following functions in a single element:

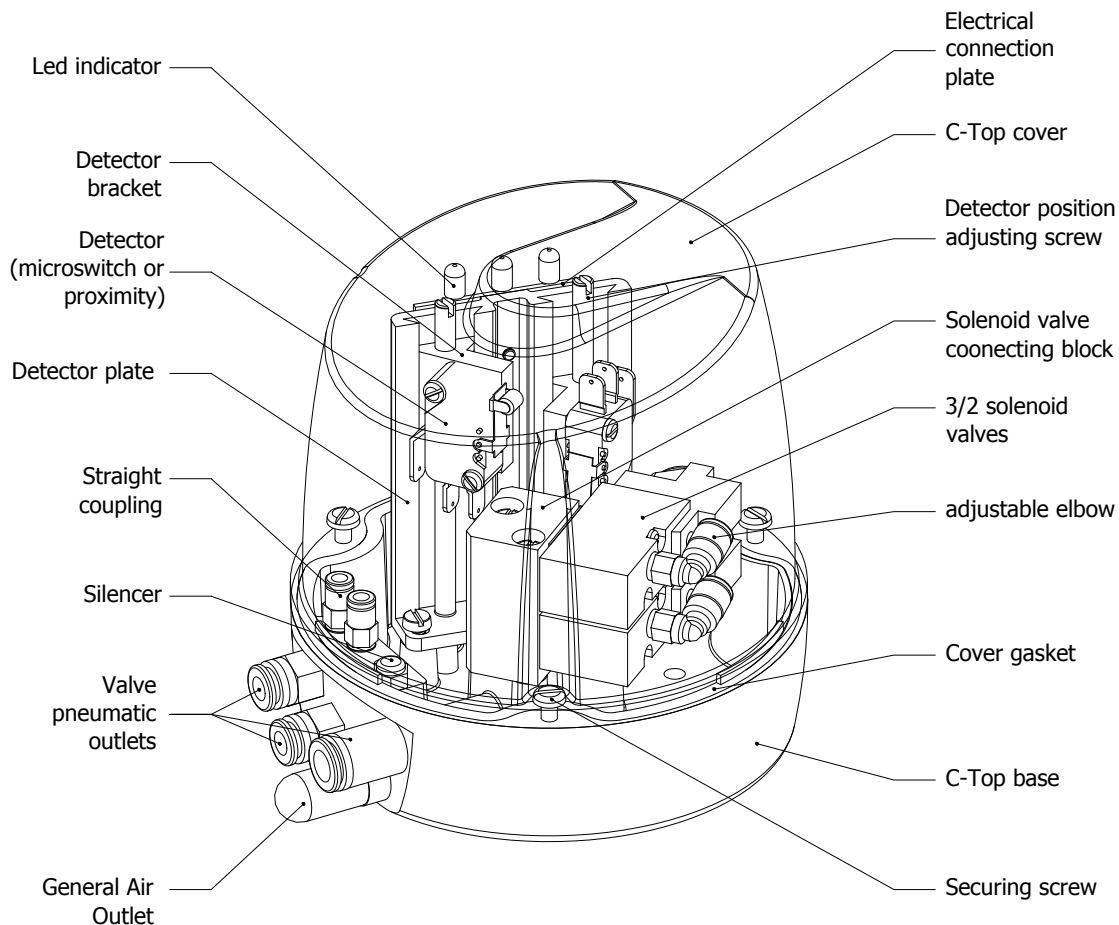
- pneumatic and electrical control of the valve;
- position indicators with feedback
- possibility of communication by (AS-Interface) bus.

It is fitted to the valve's pneumatic drive. It receives signals from a control panel or from a PLC to control the valve, and sends signals to the PLC or control panel in order to indicate its status/position.

Moreover, the **C-TOP**, has 3 signalling LED's providing information as to the status of the valve at all times:

- *green led:* indicates that the valve is in the ON position
- *red led:* indicates that the valve is in the OFF position
- *yellow led:* indicates that position 3 has been activated (for example: mix-proof valve).

## 3.3. COMPONENTS



## 4. Reception and Installation

### 4.1. CHECK THE DELIVERY

The first thing to do on receiving the head is to inspect it and make sure that it corresponds to the item that is entered on the delivery note.

INOXPA checks all of its equipment before packing. Notwithstanding, it cannot guarantee that the goods in question will arrive at the addressee intact. For this very reason, the item that is received, as well as any other article, must be checked. In the event that the product is not in good condition and/or all the parts have not been received, the haulier must write up a report to this end as soon as possible.

### 4.2. DELIVERY AND UNPACKING



**INOXPA does not accept liability should the head, its component parts and any other part they may be supplied, be improperly unpacked.**

#### 4.2.1. Delivery:

Check that all of the parts listed on the delivery note have been received:

- Delivery note.
- Head and a bag with a seal and 2 securing screws.
- Adapter bracket for the pneumatic actuator (whenever it has been ordered).
- Instruction manual.

#### 4.2.2. Unpacking:

- Remove all possible remains of the packing from the equipment.
- Check the head or its constituent parts for possible damage suffered during haulage.

### 4.3. IDENTIFICATION

All heads are identified with a label. See section 8.2 of the chapter entitled *Technical Specifications* for further information.



### 4.4. POSITIONING



**The purchaser or user will be responsible for assembly, installation, commissioning and operation of the control head.**

Position the head in such a way as that after it has been fitted to the valve it can be easily connected up to the compressed air network, and so that there will be no difficulty in making all of the required electrical connections. Furthermore, it is a good idea to position the head in such a way as to make it easy to see the status LED's from a certain distance, in order to be able to check the valve status comfortably. Leave enough space around the valve/actuator so that the inspection of the head, as well as maintenance and stripping operations, can be properly carried out.

It is extremely important to be able to have easy access to the actuator air connection device, even when this is in operation.

The **CTOP** control head possesses the following fitting options:

#### NEW INSTALLATIONS:

- **INOXPA process valves.** No adapter is required: the head is fitted directly on the upper part of the valve drive.
- **in valves made by other manufacturers.** Easy fitting, all you need to do is to fit an adaptation bracket (See Figure 4.1). In this case, the head position will depend on the type of valve to which it is to be fitted, though normally, it will be fitted to the upper part of the pneumatic drive. (The signal indicator must possess the dimensions that are given in Figure 4.2 and 4.3).

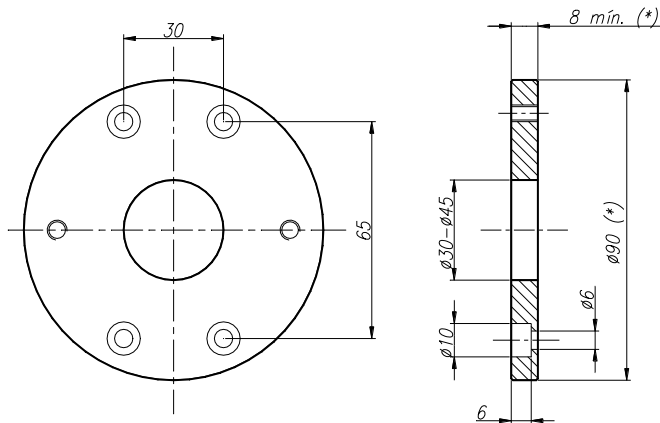


fig. 4.1 (suggested dimensions)

The adapter bracket can be supplied by INOXPA as an accessory, although it may also be made by the purchaser.

The bracket dimensions must be as indicated on the figure shown here. The measurements that are marked with an (\*) may vary.

The screw sizes are for DIN 912 M5 allen screws.

### Pieza superior actuador neumático

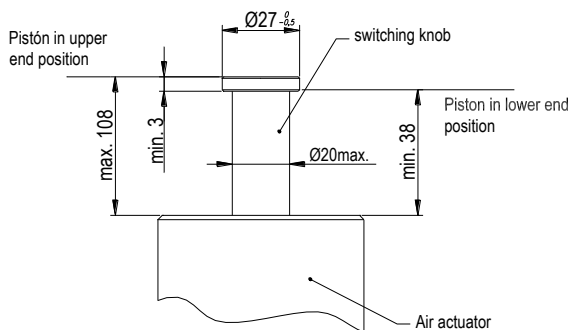


fig. 4.2

For proximity detectors. C-TOP 95690

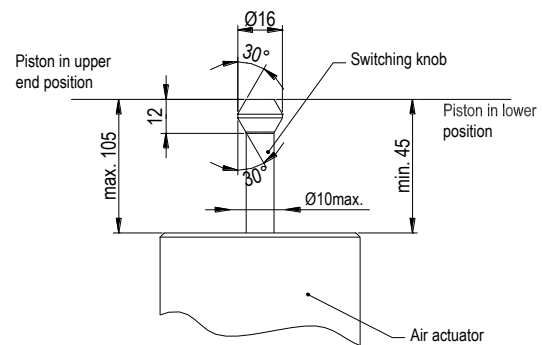


fig. 4.3

For microswitches. C-TOP 95691

### REPAIR / REPLACING OLD MODELS:

- replacing **INOXPA '94 head**. Order the **SCV1010** assembly kit (for actuators and butterfly/ball check valve) or kit **SCN1010** (for multi-way valves) along with the head.
- replacing the **Bürkert-model head**. Order the **SCV1011** assembly kit (for actuators and butterfly/ball check valve) or kit **SCN1011** (for multi-way valves) along with the head.



**The bracket/adapter must be fitted in such a way as to be properly aligned with the pneumatic actuator rod.**

**Failure to observe this recommendation could result in the detectors failing to work correctly.**

#### 4.4.1. Butterfly/ball valve with pneumatic drive. Figure 4.4

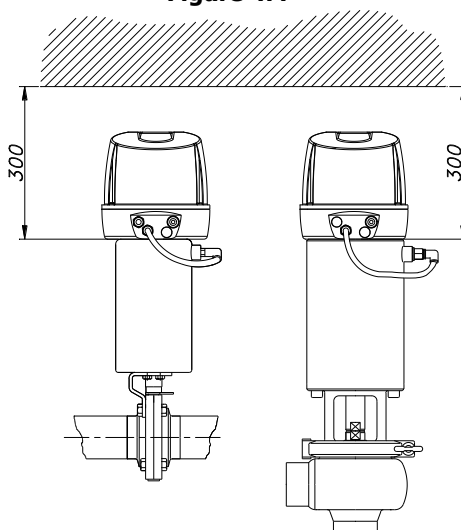
- It is very important to keep the minimum distance (dimension figure A) for pneumatic drive butterfly valves in order to enable the stripping of the actuator.
- Should the head be fitted over another valve, it is extremely important to remember that enough space must be left in order to be able to strip the valve for maintenance. The minimum recommended distance to enable the carrying-out of head maintenance work would be dimension figure B.

#### 4.4.2. Multi-way valve. Figure 4.4

- With respect to multi-way valves, cutoff valves must be distinguished from tank bottom valves.
- In the event of installing the head over another valve, it is important to remember that enough space must be left in order to be able to strip the valve for maintenance. The minimum recommended distance to enable the carrying-out of head maintenance work would be dimension figure B.



Figure 4.4



**INOXPA is not liable for the improper unpacking of the control head and its components.**

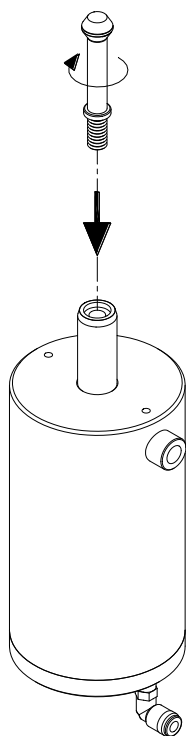


**Proceed with due care. Failure to do so may result in personal injuries.**

**The assembly and stripping of the control head must only be carried out by qualified personnel.**

#### 4.5. FITTING THE HEAD

##### 4.5.1. Fitting



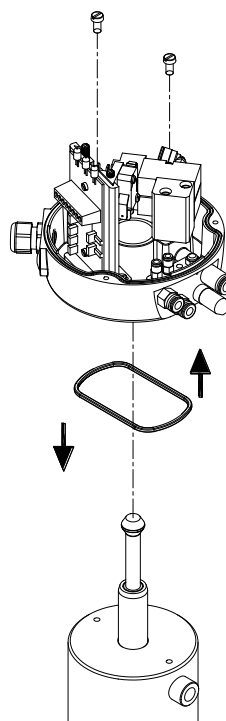
7

### 1

Position the detector shaft in the upper part of the pneumatic actuator, carefully screwing it until it is well secured.

Use:

- a conventional 17mm spanner for **C-TOP** with proximity detectors
- a conventional 7 mm spanner for **C-TOP** with microswitches



### 2

Then position the **C-TOP** in the upper part of the actuator, paying special attention to the base seal.

### 3

Screw down the two screws that will secure the **C-TOP** to the actuator.

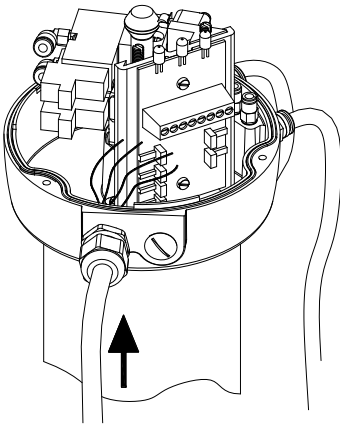


**Before putting the valve into operation, check to make sure that the head is tightly secured to the valve and that there are no loose parts.**



**Only a cross-point screwdriver is needed to fit the head.**

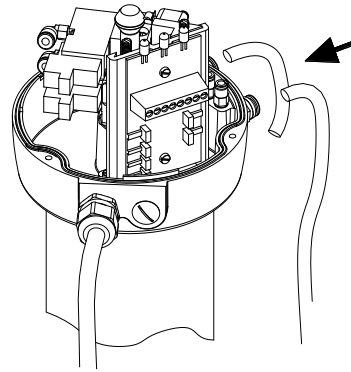
#### 4.5.2. Wiring the head



**4**

Fit the electric wiring, in the basic version and connect the **C-TOP** electrically. (See [electrical connections 4.6](#))

Check to make sure that the wire guide is good and tight.



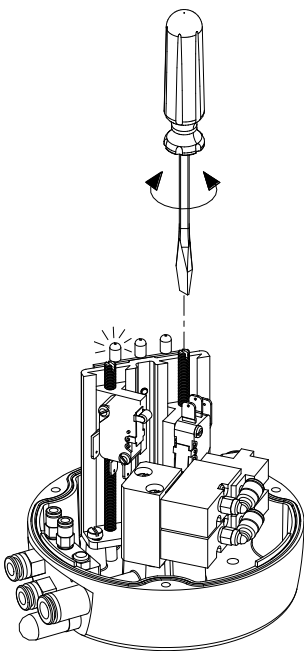
**5**

Connect the  $\varnothing 6$  mm. pipes for the air to the **C-TOP** (See [pneumatic connections 4.7](#)).

#### 4.5.3. Adjusting the position detectors

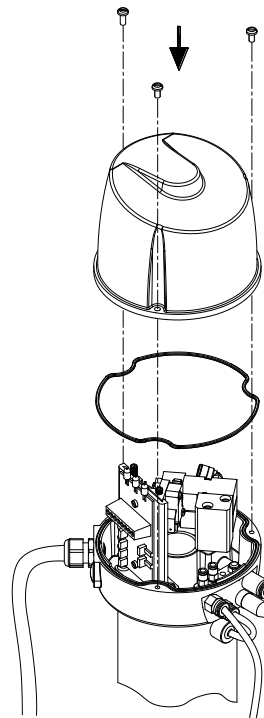
In order to place the detectors at the operating position (or detection position, the regulating screw for each detector must be tightened:

- screw clockwise to raise the detector.
- screw anti-clockwise to lower the detector.



**6**

Adjust the height of the position indicators with a screwdriver.



**7**

Make sure all of the connections (both the air and electrical connections) are properly coupled, cover the **C-TOP**, making sure to position the seal correctly, then tighten the three screws appropriately.

This operation must always be carried out with the head connected to the mains, given that as soon as the detection position has been reached, the status LED indicator will come on. Carry out the adjustment operation for each one of the head position indicators.



**After doing maintenance work on the heads, ALWAYS put the cover back in order to protect the internal electrical components.**

## 4.6. ELECTRICAL CONNECTION

### 4.6.1. 4.6.1 Mains voltage

The **C-TOP** control head has been designed to be connected to different voltages:

DC or direct current: 24V

AC or alternating current: 24/48/110/220V



**The head is supplied from the factory for a predetermined voltage. If the mains voltage proves to be different, the electrical components must be changed (solenoid valves, proximity detectors and electric plate).**

### 4.6.2 Electrical components

All the electrical components used in the **C-TOP** head have a built-in pluggable connector which avoids having to carry out any further interventions or wiring. The printed wiring board has, as a standard feature, the capacity to plug in up to 3 solenoid valves (V1, V2, V3) and 3 proximity detectors or microswitches (S1, S2, S3).

The default assembly is as follows:

#### Output:

**24V** – general output (+ pole for DC)

**GND** – normal or mass for DC.

24/48/110/220 V (2 wires) for alternating current, either of the wires can be connected.

#### Solenoid valves:

signal inputs, to the control panel or PLC

**V1** – first solenoid valve (Simple Effect drive)

**V2** – second solenoid valve (Double Effect drives)

**V3** – third solenoid valve (MixProof drives)

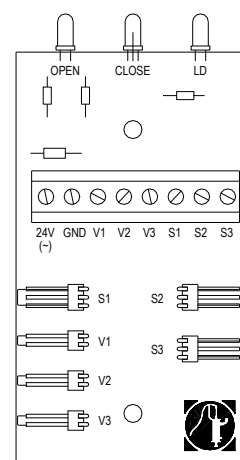
#### Detectors:

signal outputs, to the control panel or PLC

**S1** – Open valve detector position (Green LED)

**S2** – Closed valve detector position (Red LED)

**S3** – MixProof valve detector position (Yellow LED)



## 4.7. AS-INTERFACE ELECTRIC CONNECTION

AS-i interface is a fieldbus system that allows to interconnect a net of actuators and binary sensors (slaves) with a control device of a higher level (Master). The interconnection is carried out by means of a preformed cable. The preformed cables serve for information transmission as well as for power supply of the solenoid valves and sensors. The AS-i version C-TOP unit must always be installed with inductive switches and direct current of 24V.

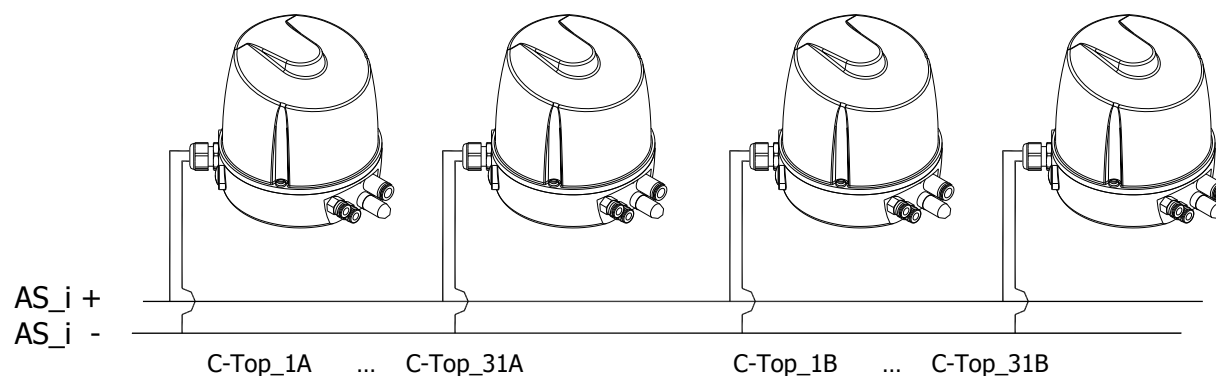
The C-TOP AS-i unit is supplied with the totally prepared cabling to avoid any intervention.

The standard option of the connection to bus is by means of a insulation displacement connector with a 2m cable.

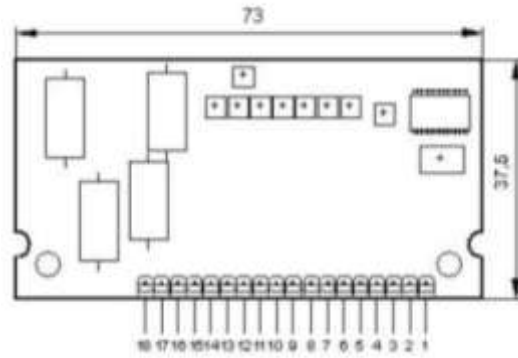
The AS-i cards with printed circuit are prepared for up to 4 solenoid valves and 4 proximity switches.

### 4.7.1. Number of connected C-TOP units and maximum length of the bus circuit

Max. 62 C-TOP AS-i control units can be connected to each Master



#### 4.7.2. AS-i card with up to 4 solenoid valves and 4 detectors:



1	AS-i +	
2	AS-i -	
3	n.c.	
4	+	
5	0V	
6	Outlet 4	Solenoid 4
7	Inlet 4	Switch 4
8	0V	
9	Outlet 3	Solenoid 3
10	Inlet 3	Switch 3
11	0V	
12	Outlet 2	Solenoid 2
13	Inlet 2	Switch 2
14	0V	
15	Outlet 1	Solenoid 1
16	Inlet 1	Switch 1
17	+	
18	n.c.	

#### Program:

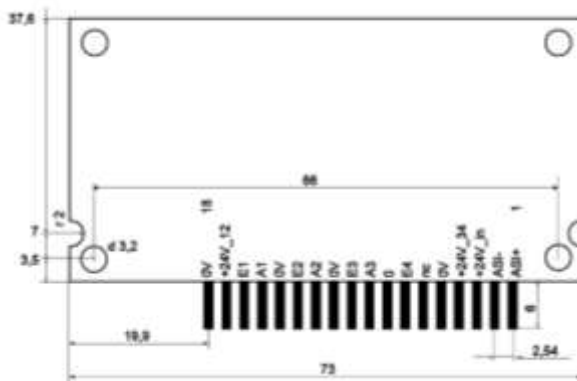
By default the direction is 0, easily reprogrammable by master.

This card is standard for the following heads:

DESCRIPTION	CODE
C-TOP DETECTORES 24V DC 3+1E 3+1D	V9721-4484001AS

### 4.7.3. AS-i card with up to 3 solenoid valves and 3 detectors:

By default, the assembly is as follows:



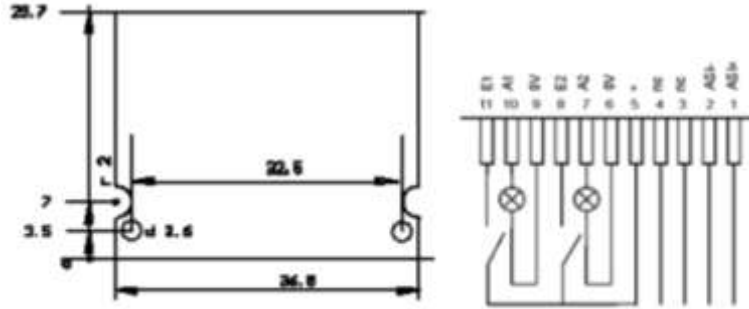
1	AS-i +	
2	AS-i -	
3	n.c.	
4	+	
5	0V	
6	n.c.	
7	Inlet 4	
8	0V	
9	Outlet 3	Solenoid 3
10	Inlet 3	Switch 3
11	0V	
12	Outlet 2	Solenoid 2
13	Inlet 2	Switch 2
14	0V	
15	Outlet 1	Solenoid 1
16	Inlet 1	Switch 1
17	+	
18	n.c.	

This card is standard for the following heads:

DESCRIPTION	CODE
C-TOP DETECTORES 24V DC 2E 3D AS-I	V9721-2384001AS
C-TOP DETECTORES 24V DC 3E 2D AS-I	V9721-3284001AS
C-TOP DETECTORES 24V DC 3E 3D AS-I	V9721-3384001AS

#### 4.7.4. AS-i card with up to 2 solenoid valves and 2 detectors:

By default, the assembly is as follows:

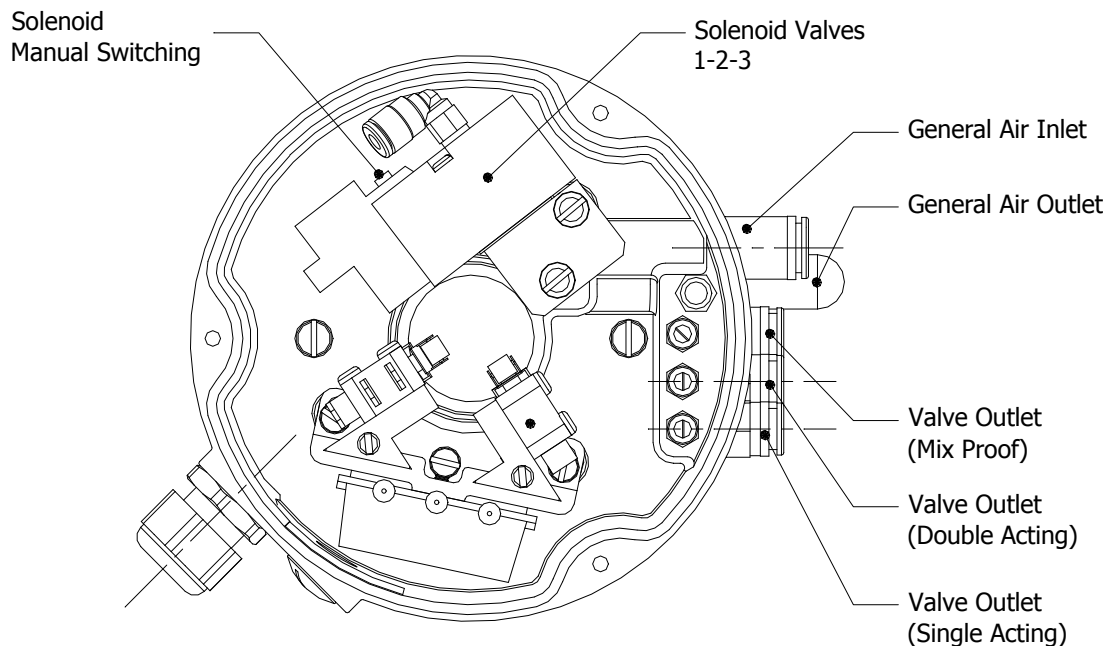


1	AS-i +	
2	AS-i -	
3	n.c.	
4	n.c.	
5	+	
6	0V	
7	Outlet 2	Solenoid 2
8	Inlet 2	Switch 2
9	0V	
10	Outlet 1	Solenoid 1
11	Inlet 1	Switch 1

This card is standard for the following heads:

DESCRIPTION	CODE
C-TOP DETECTORES 24V DC 0E 2D AS-I	V9721-0284001AS
C-TOP DETECTORES 24V DC 1E 1D AS-I	V9721-1184001AS
C-TOP DETECTORES 24V DC 1E 2D AS-I	V9721-1284001AS
C-TOP DETECTORES 24V DC 2E 2D AS-I	V9721-2284001AS

#### 4.8. PNEUMATIC CONNECTIONS



All the air connections are of the rapid type, for  $\varnothing 6$  mm piping.

# 5. Commissioning

Before putting the head (with or without actuator) into operation, the detailed instructions given in chapter 4 – *Reception and Installation* should be read carefully.

## 5.1. COMMISSIONING



**Before commissioning, the people who are responsible must be informed as to how the control head works and the safety instructions to be observed. This instruction manual will be readily available to personnel at all times.**

Before commissioning the **C-TOP** the following precautions need to be taken:

- The head is properly tightened to the valve/drive. Contrariwise, water could get inside the equipment, either deteriorating it or preventing its use.
- Check that all of the electrical wires have been properly secured in order to avoid possible signal failures.
- Check that the piston and the indicator can move without coming into contact with the position detectors. Make sure that the detectors are at the correct detection height.
- Check that the compressed air pressure at the head inlet is that which is indicated in the *Technical Specifications* in Chapter 8.
- Control the possible air leaks before fitting the cover. Check to make sure that all of the pipes and their connections are well sealed and have no leaks.
- Check that there is power. At least one of the LED's must be on.
- Fit the seal and the cover, securing the same by means of the three screws that have been supplied.

## 5.2. C-TOP COMMISSIONING

The C-TOP's are prepared for start-up without any interior cabling.

They are supplied with M12 AS-i (Vampire) connector (2 meters long) that allow for an easy connection to the cable.

All the C-TOP AS-i control units are by default supplied with the same direction (0), and each unit of the installation must be redirected from the Master.

There is an option to direct the C-TOP's AS-i at the factory (to be consulted.)



**Do not modify the operation settings for which the C-TOP head has been designed without having received prior written authorisation from INOXPA.**



**Danger of burns! Do not touch the valve or pipes while there is hot liquid in circulation or when cleaning and/or sterilisation work is being carried out.**

# 6. Troubleshooting: Causes and solutions

PROBLEM	CAUSE/EFFECT	SOLUTION
<b>THE VALVE IS JERKING</b>	Insufficient air supply	<ul style="list-style-type: none"> <li>• Check that the compressed air circuit bypass valve is open.</li> <li>• Check the supply pressure.</li> <li>• Insufficient flow.</li> </ul>
	The actuator is not driving the valve efficiently.	<ul style="list-style-type: none"> <li>• Check the compressed air feed pressure.</li> <li>• Replace a pneumatic actuator for a bigger one.</li> </ul>
	Excessive line pressure	<ul style="list-style-type: none"> <li>• Check the pressure in the installation and regulate whenever appropriate.</li> </ul>
<b>THE VALVE DOES NOT OPEN/CLOSE</b>	<p>The compressed air feed is not open.</p> <p>There is not enough air pressure.</p> <p>There is air, but the solenoid valve is not working.</p> <p>Dirt access to the actuator.</p>	<ul style="list-style-type: none"> <li>• Open the compressed air passage towards the control head.</li> <li>• Increase the feed air pressure.</li> <li>• Check that power is being supplied.</li> <li>• Check the compressed air pressure and the pipes.</li> </ul>
<b>THERE IS NO POSITION SIGNAL</b>	The detectors do not detect the shaft in position.	<ul style="list-style-type: none"> <li>• Adjust the height of the detectors.</li> <li>• Check to see that the detectors/microswitches are working properly.</li> </ul>
<b>AIR LEAK</b>	The air is continuously leaking from inside the head	<ul style="list-style-type: none"> <li>• Check all of the pneumatic connections of the head's internal components.</li> </ul>
<b>HAMMERING</b>	The shutoff valve is closing very quickly.	<ul style="list-style-type: none"> <li>• Fit a flow regulator at the actuator inlet, in order to control the flow speed.</li> </ul>
<b>WATER HAS GOT INSIDE</b>	Failure of gasket sealability	<ul style="list-style-type: none"> <li>• Tighten the cover and base screws.</li> <li>• Change the base or cover seal, if necessary.</li> </ul>

Checks to be made in the event of a breakdown/repair of or to any particular component:

### **ELECTRICAL** (the head must be connected to the mains)

- Check that the proximity detectors are working properly by introducing a metal object into the detection area.
- Check that the microswitches are working properly by activating the lever with your finger. (if the status LED comes on this shows that the detector/microswitch is working properly.)

### **PNEUMATICS** (the compressed air feed must be open).

- Make sure that there are no air leaks at the pneumatic connections.
- Check the proper working of the electrically operated valves by activating them manually.



# 7. Maintenance

## 7.1. GENERAL COMMENTS

This control head does not require maintenance work. Should any component fail to work please contact the supplier so as to order spare parts.



Read carefully Chapter 8. *Technical Specifications*.



All electrical work must be carried out by qualified personnel.

## 7.2. STORAGE

The **C-TOP** head valves must be stored in an enclosed area in the following conditions:

- Temperature from 5°C to 30°C
- Air humidity <60%

The equipment must **NOT** be stored in the open air.

### 7.2.1.

## 7.3. CLEANING



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

Use rubber gloves during the cleaning process.



When cleaning the head, use non-aggressive liquids that are compatible with the material from the components of the equipment are made. Check that all the cavities are free from dirt.

Monitor the concentration of cleaning solutions, it could give rise to deterioration in the base or the head cover.

In order to remove any remains of cleaning products, ALWAYS rinse the element in question with clean water after completing the cleaning process.

## 7.4. ASSEMBLY AND STRIPPING

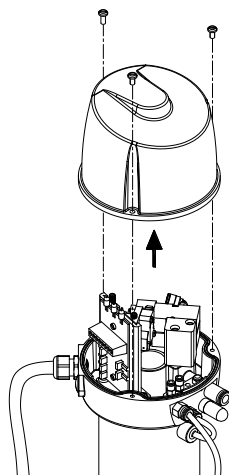


INOXPA is not liable for the improper handling of the head control, or of its components. Before starting work on stripping the equipment, disconnect the actuator air and the head from the mains.

### 7.4.1. Replacing the head

See *Chapter 4.5* for instructions on the stripping and fitting of the valve drive head.

### 7.4.2. Repairs



Take off the head cover by loosening the securing screws.

The type of head, its position and the description of the part given in the chapter on technical specifications must be quoted whenever ordering spare parts.

As soon as the piece has been replaced, re-fit the head and make sure that the screws have been tightened properly. Contrariwise, the protection of the electrical components may be considerably reduced.

# 8. Technical Specifications

## 8.1. TECHNICAL SPECIFICATIONS

### MATERIALS

<i>Base</i>	PPO + GF, blue
<i>Cover</i>	PC, transparent, blue-grey
<i>Seals</i>	EPDM
<i>Weight</i>	560 – 640 gr.

### PNEUMATIC SPECIFICATIONS

<i>Connections</i>	Air inlet:	G 1/8" – is supplied with snap-fit plug for 6/4 pipe
	Air vent:	G 1/8" – is supplied with silencer
	Air outlets:	G 1/8" – is supplied with snap-fit plug for 6/4 pipe
<i>Fluid</i>	lubricated compressed air, neutral gasses according to DIN ISO 8573-1	
<i>Cont. max. oil</i>	1 ppm	
<i>Fluid max. temp</i>	50°C (155°F)	
<i>Work pressure</i>	1.5 to 7 bar (22 to 102 PSI)	
<i>Nominal flow</i>	150 NI/min (to 6 bar, 20°C and 1 bar differential pressure)	
	(to 87 PSI, 74°F and 87 PSI differential pressure)	
<i>Run</i>	minimum	3 mm
	maximum	70 mm

### ELECTRICAL SPECIFICATIONS

<i>Protection</i>	IP 65/67 according to EN 60529	
<i>Supply voltage</i>	DC	24V or by means of AS-i bus
	AC	24/110/220V
<i>Connections</i>	3 options:	
	• threaded terminals with M16 cable gland (standard version)	
	• multipin connector	
	• AS-i bus.	

### Solenoid valves:

(the C TOP can fit up to 3 solenoid valves.)

<i>Type</i>	3/2 Valve (normally closed)
<i>Air pressure</i>	1.5 to 7 bar (22 PSI a 101,5 PSI)
<i>Consumption</i>	DC: 0.55 W
	AC: 1.9 VA
<i>Response time</i>	≤ 25 ms
<i>Optical indicator</i>	Red Led
<i>Peak suppressor circuit</i>	

### Position indicators (Inductive)

<i>Voltage</i>	5....25V DC PNP
<i>Consumption (signal)</i>	2,1 mA
<i>Protection</i>	IP 67



**In order to assure the good valve performance, it is essential that the compressed air be supplied in accordance with the conditions described herein. Contrariwise, irreparable damage may be caused to the material.**

## 8.2. CHARACTERISTICS

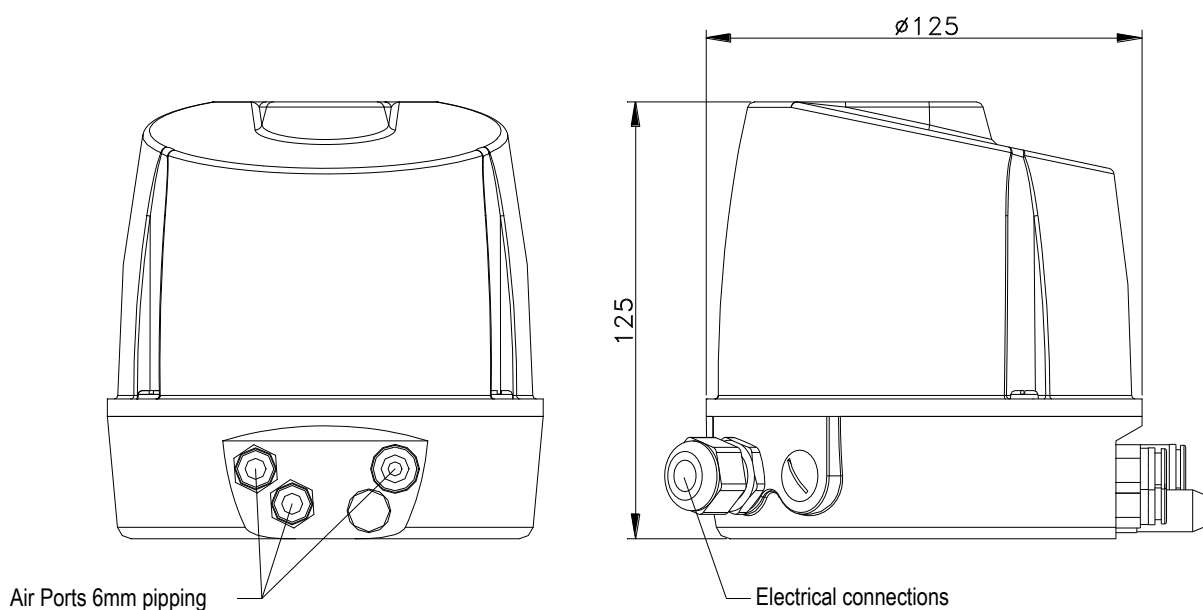
Connection	solenoid valves	num. Detectors <sup>(1)</sup>	Voltage	Description	CODE
Connectors	0	2 proximity detectors	24V DC	Control head with printed circuit board. Power is supplied directly to the connectors. M16 cable gland.	V9721-0284000
	1				V9721-1284000
	2				V9721-2284000
	3				V9721-3284000
	0	2 microswitches	24V DC <sup>(2)</sup>		V9621-0284000
	1				V9621-1284000
	2				V9621-2284000
	3				V9621-3284000
Multipin	0	2 proximity detectors	24V DC	Control head with printed circuit board. Factory pre-wired electrical connections. Electrical connection brought about via an 8-pole terminal.	
	1				
	2				
	3				
	0	2 microswitches	24V DC <sup>(2)</sup>		
	1				
	2				
	3				
AS-i BUS <sup>(3)</sup>	0	2 proximity detectors	24V DC	Control head with printed circuit board. Direct head connection by means of a Direct connection from the head by means of a <i>guillotine</i> plug to the two-wire field bus signal cable.	V9721-0284000AS
	1				V9721-1284000AS
	2				V9721-2284000AS
	3				V9721-3284000AS

<sup>(1)</sup> it can be supplied with another number of detectors: from 0... to 3

<sup>(2)</sup> there are other versions (alternating current feed 24/110/220V AC 50/60 Hz).

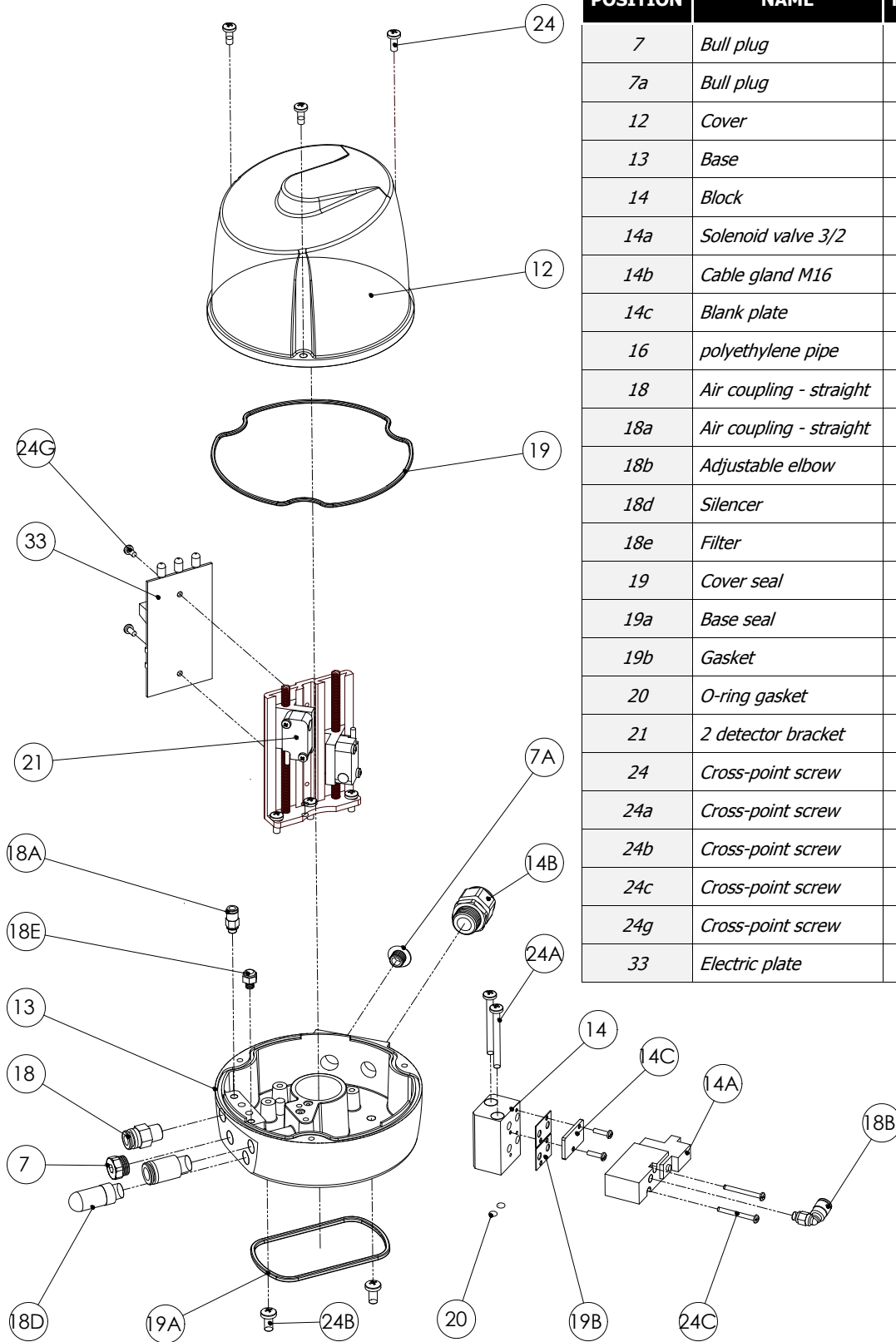
<sup>(3)</sup> only supplied with inductive proximity detectors.

## 8.3. DIMENSIONS



### 8.4. EXPLODED VIEW AND PARTS LIST

**CTOP with 2 proximity detectors and 1 solenoid valve (connector electrical connections) 24/110/220V AC/DC**

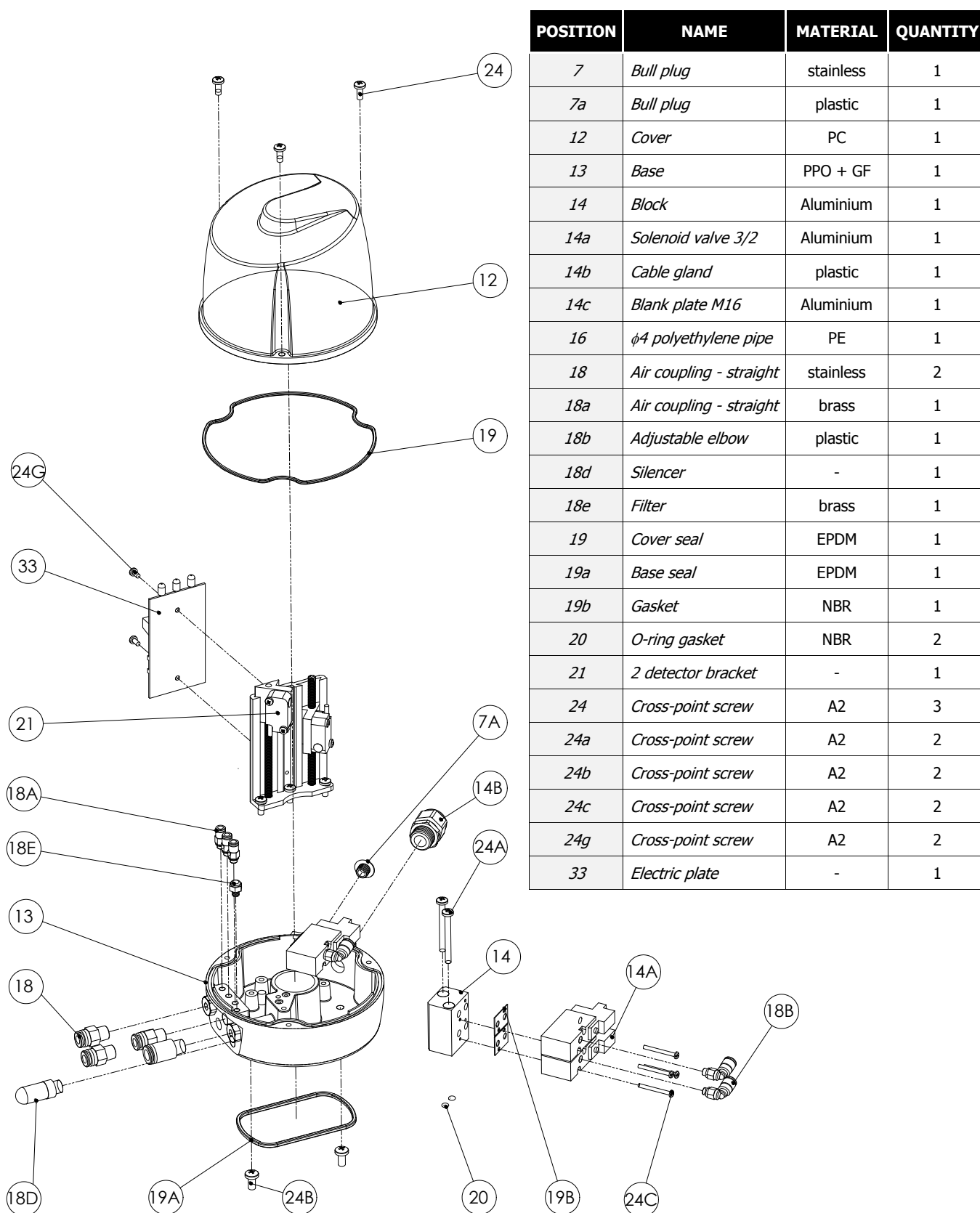


POSITION	NAME	MATERIAL	QUANTITY
7	Bull plug	stainless	1
7a	Bull plug	plastic	1
12	Cover	PC	1
13	Base	PPO + GF	1
14	Block	Aluminium	1
14a	Solenoid valve 3/2	Aluminium	1
14b	Cable gland M16	plastic	1
14c	Blank plate	Aluminium	1
16	polyethylene pipe	PE	1
18	Air coupling - straight	stainless	2
18a	Air coupling - straight	brass	1
18b	Adjustable elbow	plastic	1
18d	Silencer	-	1
18e	Filter	brass	1
19	Cover seal	EPDM	1
19a	Base seal	EPDM	1
19b	Gasket	NBR	1
20	O-ring gasket	NBR	2
21	2 detector bracket	-	1
24	Cross-point screw	A2	3
24a	Cross-point screw	A2	2
24b	Cross-point screw	A2	2
24c	Cross-point screw	A2	2
24g	Cross-point screw	A2	2
33	Electric plate	-	1

The microswitch version has the same parts. Only one part is different 21.

The electric plate (33) and the solenoid valves (14A) vary according to the voltage of the head in question

**CTOP with 2 proximity detectors and 2 solenoid valves (connector electrical connections) 24/110/220V AC/DC**



POSITION	NAME	MATERIAL	QUANTITY
7	Bull plug	stainless	1
7a	Bull plug	plastic	1
12	Cover	PC	1
13	Base	PPO + GF	1
14	Block	Aluminium	1
14a	Solenoid valve 3/2	Aluminium	1
14b	Cable gland	plastic	1
14c	Blank plate M16	Aluminium	1
16	φ4 polyethylene pipe	PE	1
18	Air coupling - straight	stainless	2
18a	Air coupling - straight	brass	1
18b	Adjustable elbow	plastic	1
18d	Silencer	-	1
18e	Filter	brass	1
19	Cover seal	EPDM	1
19a	Base seal	EPDM	1
19b	Gasket	NBR	1
20	O-ring gasket	NBR	2
21	2 detector bracket	-	1
24	Cross-point screw	A2	3
24a	Cross-point screw	A2	2
24b	Cross-point screw	A2	2
24c	Cross-point screw	A2	2
24g	Cross-point screw	A2	2
33	Electric plate	-	1

The microswitch version has the same parts. Only one part is different 21.  
 The electric plate (33) and the solenoid valves (14A) vary according to the voltage of the head in question

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