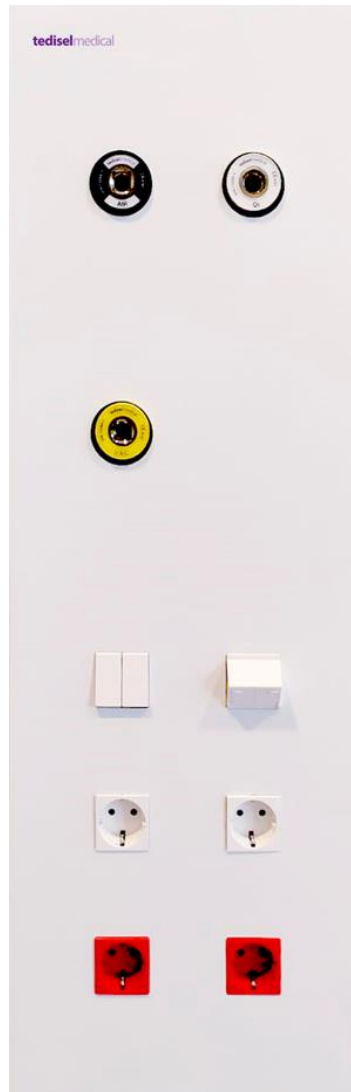


# tediselmedical

## ANTEA

### INSTALLATION MANUAL



CE 0197

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# ANTEA

Installation manual

## 1. Manufacturer

Manufacturer: TEDISEL IBÉRICA S.L.

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## 2. Security information

Important notes in these operating instructions are marked with graphic symbols and signal words.

### 2.1. Injury risk warnings

Signal words such as DANGER, WARNING or CAUTION describe the degree of risk of injury. The triangular symbols visually emphasise the degree of danger.



WARNING

Refers to a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Refers to a potential hazard which, if not avoided, may result in minor or slight injury.



DANGER

Refers to an immediate danger which, if not avoided, will result in death or serious injury.



Risk of finger entrapment

### 2.2. Warnings of risk of damage

The signal word WARNING describes the degree of risk of material damage. The triangular symbols visually emphasise the degree of danger.



Damage to surfaces: warns of damage to surfaces due to unsuitable cleaning agents and disinfectants.

**NOTICE**

Refers to a potential hazard which, if not avoided, may cause damage to the equipment.

### 2.3. Supplementary symbols used in the safety instructions



Fire hazard

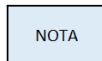


Explosion hazard: warns of ignition of explosive gas mixtures.



Dangerous voltage: warns about electric shocks that can cause serious injury or death.

### 2.4. Additional information



A NOTE provides additional information and useful tips for the safe and efficient use of the device.

### 2.5. Proper use of oxygen.

#### 2.5.1. Oxygen explosion



Oxygen becomes explosive when it comes into contact with oils, greases and lubricants.

Compressed oxygen presents an explosion hazard:

- Ensure that oxygen and gas outlets are free of oil, greasy materials and lubricants!
- Do not use cleaning agents containing oil, grease or lubricants.

#### 2.5.2. fire hazard



Escaping oxygen is fuel:

- Naked flame, red-hot objects and open lights are not allowed when working
- Do not smoke!

### 3. Risks

#### 3.1. Gas explosion



Oxygen becomes explosive when it comes into contact with oils, greases and lubricants.

When in contact with oxygen in the air, medical gases may form an explosive or easily flammable gas mixture. The equipment is not suitable for use in environments containing flammable anaesthetic mixtures with high concentrations of oxygen or nitrous oxide.

If such high concentrations of flammable anaesthetic mixtures with oxygen or nitrous oxide occur in the vicinity of the device, there is a risk of ignition under certain conditions.

#### 3.2. Risk of device malfunction



CAUTION: If one device is connected to the equipment and trips the protection mechanism of the corresponding circuit in the health care facility, other devices connected to the equipment will also lose power.

#### 3.3. fire hazard



Plug-in connections for the supply of medical gases must not come into contact with oil, grease or flammable liquids.

#### 3.4. Danger of electric shock



Signal cables (network, audio, video, etc.) must be electrically isolated from equipment and the connection points of the building's wiring to prevent contact with currents that can cause serious injury or death.

#### 3.5. Risk of equipment falling into the anchorage



WARNING: If during the operation of anchoring the equipment to the mounting surface there is no element to support the equipment, it may fall on the person/s performing the installation of the equipment.

#### 3.6. Risk of burns

During the gas connection operation, the operator may suffer burns due to the welding process, as well as damage to the equipment or other surrounding equipment.



WARNING: Personal injury and material damage may occur.

### 3.7. Fire hazard

If the working atmosphere is not sufficiently ventilated, volatile substances (e.g. oxygen) may have concentrated in the working atmosphere and could cause a fire when in contact with the heat source used for welding.



**FIRE HAZARD:** Failure to comply with this point can cause serious damage.

### 3.8. Risk of electrical contact

During assembly of the equipment, it may come into contact with any live wiring in the installation, which can cause the metal parts of the equipment to become live and therefore reach the operator.



**DANGEROUS VOLTAGE:** Failure to comply with this point may result in personal injury.

## 4. Symbols used



Applicable part B



Earth (mass)



Equipotentiality



Protective earth (ground)















Connection point for neutral conductor



Nurse call button



Direct lighting

	Indirect lighting
	Operating instructions
	Health Product
	Waste electrical equipment
	CE symbol
	Product code
	Unique identification code
	Serial number
	Manufacturer
	Date of manufacture
	Reference to the instruction manual
	Damage to surfaces



Fire hazard



Danger of explosion



Hazardous voltage



NOTICE

Notice



Risk of finger entrapment



WARNING

Warning



CAUTION

Caution



DANGER

Danger

# ANTEA

Installation manual

## 5. Installation requirements

### 5.1. Anchoring on the mounting surface. Minimum requirements



DANGER: Failure to comply with this point may result in personal injury.

To install the equipment on a surface, a structure or recess must be prepared to house the equipment and to which the chassis will be fixed by means of the anchorage points.

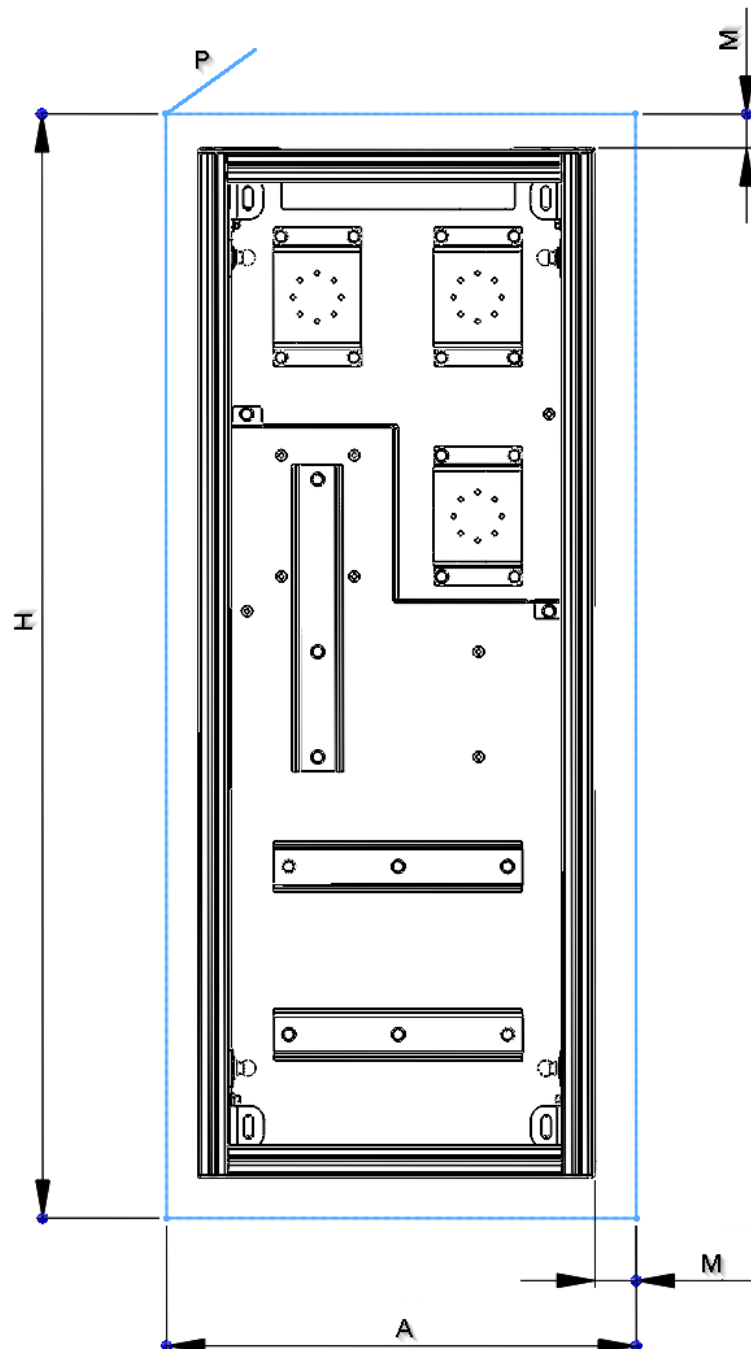


Fig. 1 Structure to be created on the mounting wall

The installation plan of the equipment defines the width of the shaft (A), the height of the shaft (H), the margins for adjusting the position of the equipment (M) and the minimum depth of the shaft (P).



See installation drawing of the equipment.

NOTA

Hardware for mounting the equipment is not included, the method of anchoring will depend on the surface.

	ANTEA	AURA 200	AURA 300
Maximum weight [kg]:	35	45	50
Maximum torque [Nm]:	100	100	100

## 5.2. Training

Personnel performing the installation must be properly trained and qualified by the customer. Persons who:

1. have received the training and are duly registered (at those levels where legal provisions make such registration necessary).
2. have been instructed in the use of this device in accordance with this instruction manual.
3. are able to assess the tasks they perform on the basis of their own professional experience and training in relevant safety standards and can recognise the potential hazards involved in the work.

## 6. Installation and connection

This section of the manual shows how to install and connect the ANTEA equipment. It should be borne in mind that to carry out these operations it will be necessary to remove the front cover of the enclosure.

NOTA

Before proceeding with the installation, the installation plans must be checked in order to locate the inputs arranged in the equipment for supplying the various systems, both for the distribution of medical gases and for the different electrical circuits, nurse call and voice and data.



See installation drawing of the equipment.

The inlet for the medical gas supply ① is located on the upper side of the ANTEA chassis. The electrical connections ② are located on the side(s) of the equipment. See Figure 2.

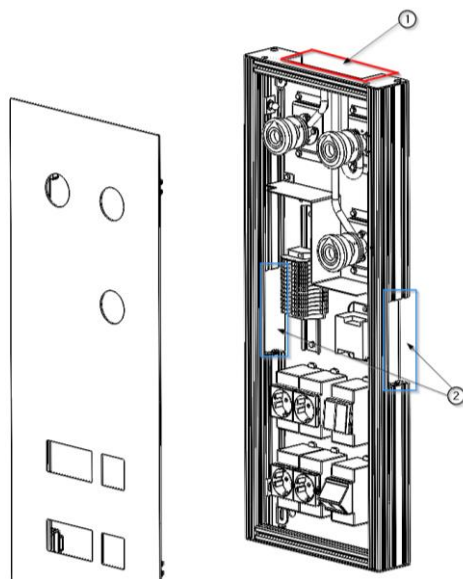


Fig. 2 Location of gas inlets and electrical inlets

### 6.1. Removal/assembly of main or front cover

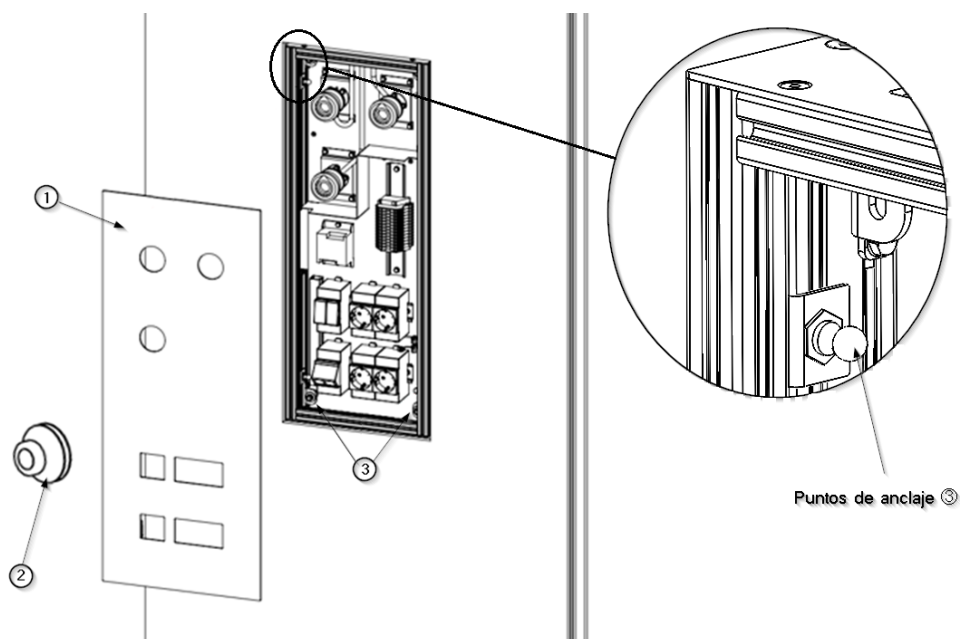


Fig. 3 Removal of ANTEA's front panel

- Remove the cover ① using the suction cup ② as shown in Figure 3. All circuits, gas, electrical, voice and data, will be exposed.
- To refit, present the cover and locate the anchorage points ③.
- Press on the cover in the area of the anchor points ③ until you hear the clipping sound.



Make sure not to place fingers near the sides of the ANTEA cover.

Check that the cover is securely in place and that all electrical and gas elements are correctly positioned.

## 6.2. Assembly

Depending on the version, there are rows of anchorage points for the installation of the device. The number and distance of these anchor points will vary depending on the length of the equipment and is defined in the corresponding installation drawing that accompanies the equipment.



See installation drawing of the equipment.

- Locate the anchor points ① and ② indicated on the installation drawing supplied with the equipment. See Figure 4.

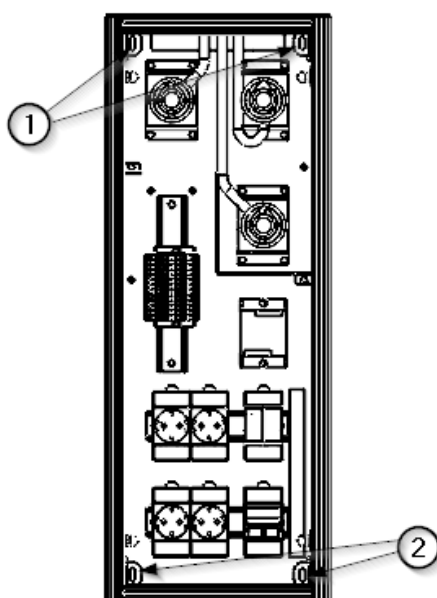


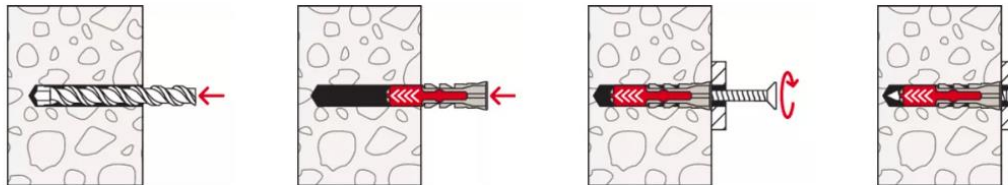
Fig.4 Anchorage points for ANTEA equipment

- Once the device is in position, it must be secured at the two upper anchor points ①, solely for the purpose of securing the device.
- Afterwards, we can make the rest of the joints to make the final tightening of all of them once they are all in place.

### 6.2.1. Installation on a masonry wall

The joining elements to be used when installing ANTEA on a conventional masonry surface are as follows (see Figure 5).

Position	Description
1	Screw DIN 571 for 8 mm socket, hexagon head, zinc plated
2	Wide washer DIN 9021 M6 zinc plated
3	Fischer DuoPower Bicomponent Cue



Loads											
DuoPower											
Highest recommended loads <sup>1)</sup> for a single anchor.											
The given loads are valid for wood screws with the specified diameter.											
Type		5 x 25	6 x 30	6 x 50	8 x 40	8 x 65	10 x 50	10 x 80	12 x 60	14 x 70	
Wood screw diameter	[mm]	4	5	5	6	6	8	8	10	12	
Min. edge distance concrete	$c_{min}$ [mm]	30	35	35	50	50	65	65	80	100	
Recommended loads in the respective base material F... <sup>2)</sup>											
Concrete	≥ C20/25	[kN]	0,40	0,95	1,65	1,10	2,30	2,15	4,20	3,30	5,30
Solid brick	≥ Mz 12	[kN]	0,30	0,50	0,55	0,62	0,69	1,20	1,45	1,30	1,35
Solid sand-lime brick	≥ KS 12	[kN]	0,50	1,00	1,60	1,25	2,25	2,20	3,85	2,80	4,50
Aerated concrete	≥ AAC 2 (G2)	[kN]	0,05	0,10	0,15	0,10	0,16	0,20	0,30	0,24	0,35
Aerated concrete	≥ AAC 4 (G4)	[kN]	0,25	0,38	0,55	0,42	0,60	0,60	1,10	1,00	1,45
Vertically perforated brick	≥ Hlz 12 ( $\rho \geq 0,9 \text{ kg/dm}^3$ )	[kN]	0,13	0,15	0,17	0,25	0,40	0,25	0,40	0,35	0,40
Perforated sand-lime brick	≥ KSL 12 ( $\rho \geq 1,6 \text{ kg/dm}^3$ )	[kN]	0,40	0,60	0,60	0,70	1,00	0,70	2,00	0,75	1,50
Gypsum block	( $\rho \geq 0,9 \text{ kg/dm}^3$ )	[kN]	0,10	0,18	0,37	0,25	0,50	0,35	0,65	0,50	0,50
Gypsum fibreboard	12,5 mm	[kN]	0,24	0,33	0,35	0,35	-	0,50	-	-	-
Gypsum plasterboard	12,5 mm	[kN]	0,12	0,15	0,15	0,15	-	0,15	-	-	-
Gypsum plasterboard	2 x 12,5 mm	[kN]	0,13	0,15	0,24	0,20	0,32	0,30	-	-	-
Mattone Forato Typ F8		[kN]	0,30	0,30	-	0,25	-	0,25	-	-	-
Tramezza Doppio UNI 19		[kN]	0,15	0,15	0,23	0,15	0,30	0,20	0,52	0,35	0,35
Sepa Parpaing		[kN]	0,30	0,45	0,25 <sup>3)</sup>	0,45	0,45 <sup>3)</sup>	0,45	0,45 <sup>3)</sup>	0,60 <sup>3)</sup>	0,60 <sup>3)</sup>
<sup>1)</sup> Required safety factors are considered.											
<sup>2)</sup> Valid for tensile load, shear load and oblique load under any angle.											
<sup>3)</sup> Load determination on plastered wall.											

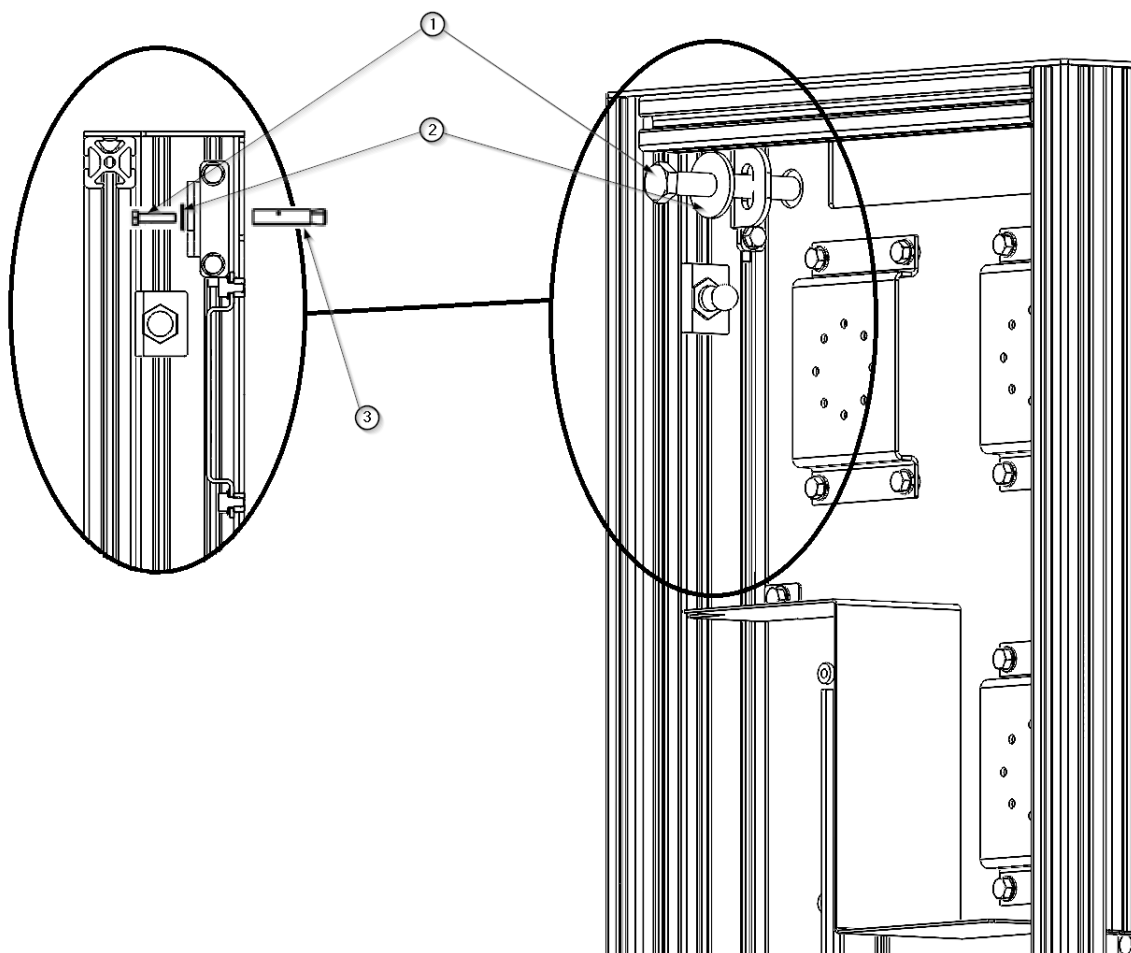


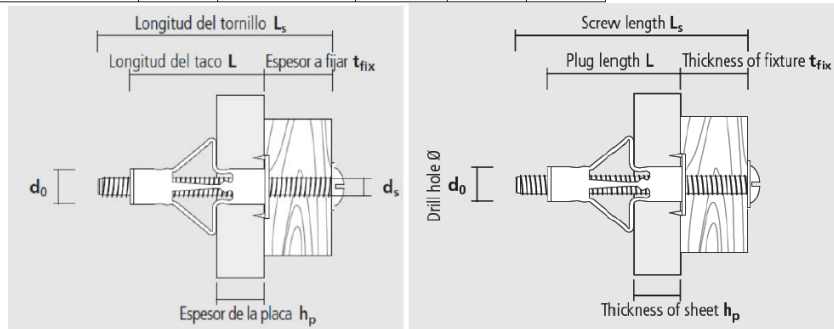
Fig.5 Anchorage points for ANTEA in a masonry wall

### 6.2.2. Mounting on plasterboard panels.

The recommended connecting elements when installing Aura on a conventional masonry surface are as follows (see Fig. 6).

Position	Description
1	Metal expansion plug for gypsum plasterboard (incl. screw)
2	Wide washer M6 zinc plated

REF	d <sub>o</sub> [mm]	h <sub>p</sub> min-max [mm]	Rosca- thread	L <sub>s</sub> [mm]	L [mm]
HRM 4-20	8	3-18	M4	52	46
HRM 4-24	8	18-24	M4	58	52
HRM 4-38	8	32-38	M4	72	66
HRM 5-16	11	3-16	M5	58	52
HRM 5-32	11	14-32	M5	71	65
HRM 5-45	11	32-45	M5	88	80
HRM 6-16	13	3-16	M6	58	52
HRM 6-32	13	14-32	M6	71	65
HRM 6-45	13	32-45	M6	88	80
HRM 8-16	13	3-16	M8	61	53
HRM 8-32	13	16-32	M8	73	66



**PROCEDIMIENTO DE INSTALACIÓN / INSTALLATION PROCEDURE**

Instalación con pinza / Mounting with installation pliers

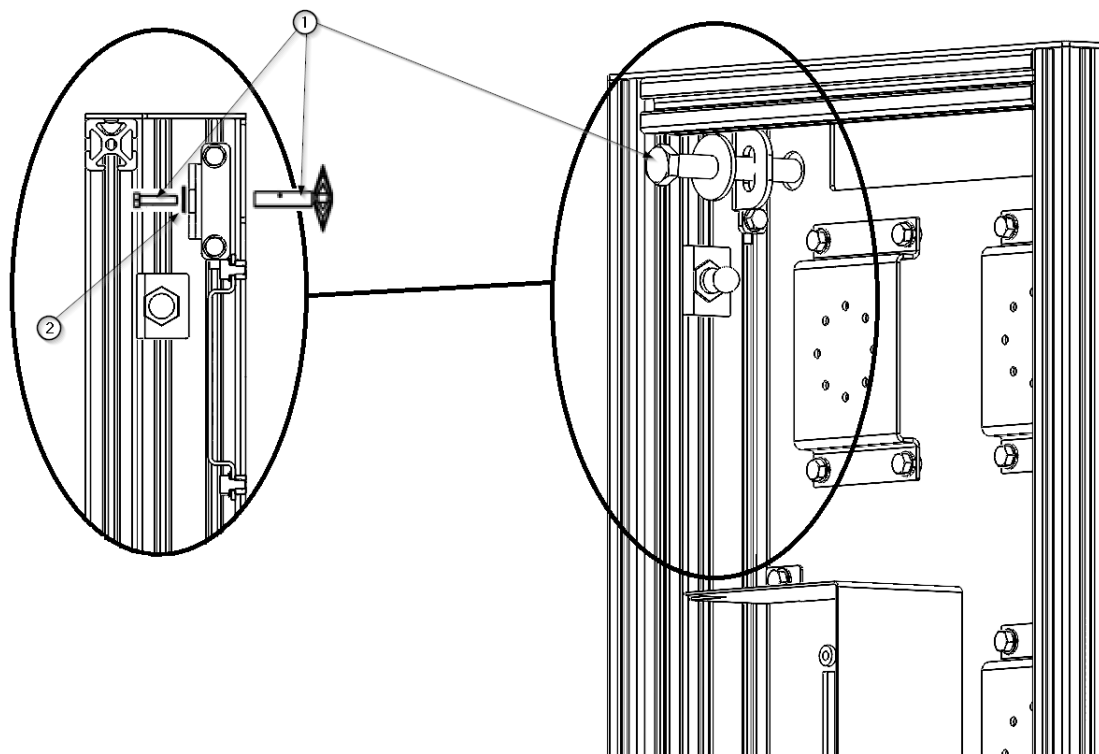
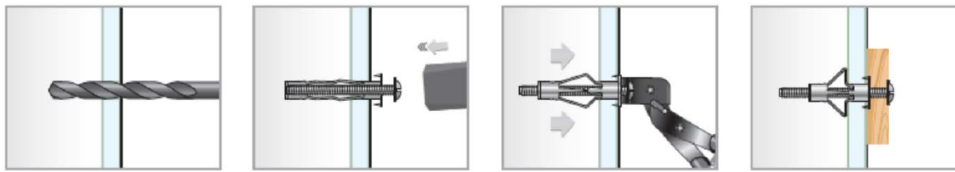


Fig.6 Anchor points for ANTEA in a plasterboard wall

### 6.3. Electrical and voice/data connection:

- Remove the front cover of the equipment. The electrical, voice and data connections are visible.



See installation drawing of the equipment.

The electrical, voice and data circuits enter the equipment through a window ① whose dimension and location are detailed in the installation plan of the equipment. The electrical circuits terminate in a common terminal block ②, except for voice and data, whose connection is direct to the corresponding mechanism ③. See Figure 7.

The equipment must be installed by qualified personnel taking into account national regulations.



To avoid the risk of electric shock, the equipment must be connected to a protective earth.

Failure to do so may result in personal injury.

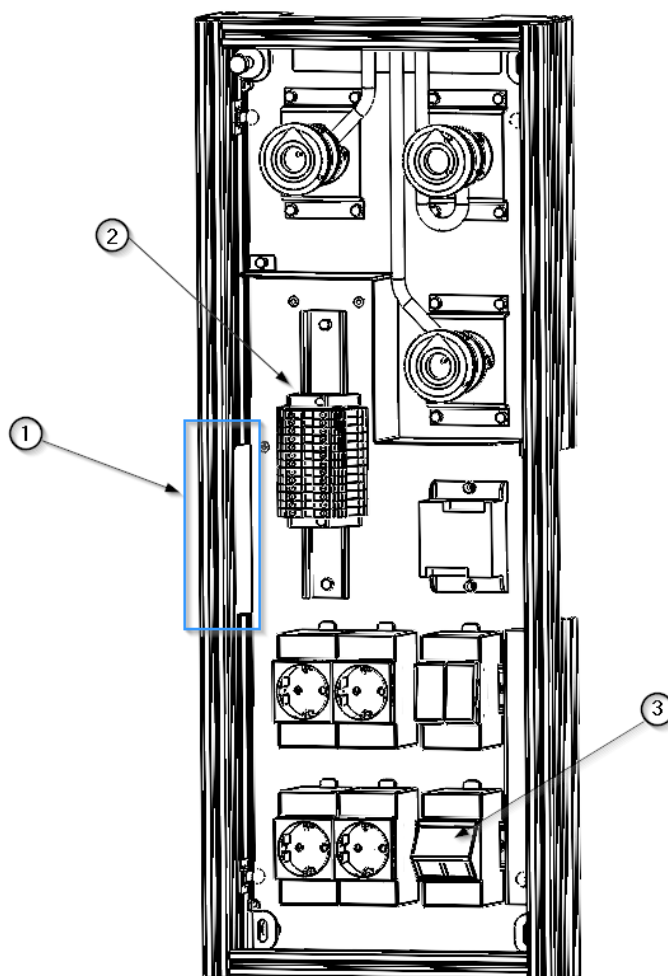


Fig.7 Detail of electrical connection points at ANTEA



See installation drawing of the equipment.

#### 6.4. Gas connection:

The medical gas circuits of the equipment protrude approximately 10 cm through an upper window ①, the size and location of which are detailed in the installation drawing of the equipment. The connection of the medical gas circuits ② shall be carried out outside the equipment, in accordance with the applicable regulations, UNE EN ISO 7396-1\_2016 and UNE EN ISO 7396-2\_2007 by qualified personnel.

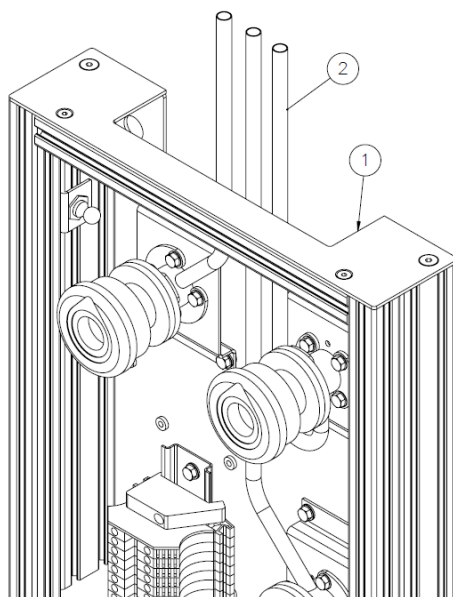


Fig.8 Medical gas and vacuum connection inlet

- Remove the front cover of the unit. The gas connections are visible.



See point 6.1 of this manual

- Identify each of the gas circuits before welding outside the equipment. See installation drawing of the equipment.



The gas circuits must be connected outside the equipment, and the installation plan must be checked before starting the operation.

- Cut the pipe of the piping of the equipment and the pipe corresponding to the circuit coming from the installation to the necessary height, so that both coincide. Use the corresponding copper fittings or reducers depending on the diameters of both pipes.
- If the positioning or distribution of the pipes of the equipment does not coincide with the pipes of the installation, place copper elbows in position joining both pipes.
- Solder the components.

- Replace the protective cover as described in chapter 6.1 of this manual.



**WARNING:** If the distance between the gas outlet and the beginning of the gas inlet is less than 200 mm, the valve must be removed from the gas outlet prior to the welding process.

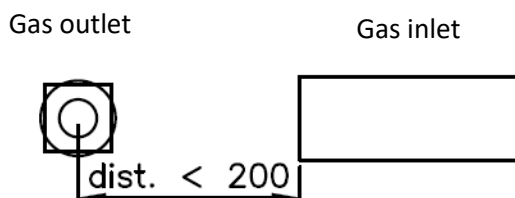


Fig.9 Minimum gas welding distance to the installation

## 6.5. External power protection requirements

For installations in critical hospital areas (operating theatres, ICUs, etc.), the power supply to the equipment must include upstream protections that meet the following requirements:

- Power supply lines for electrical sockets: 16 A Type II MCB.
- Lighting or brake lines: 16 A Type II MCB + 25 A / 30 mA Type II RCD.

## 7. Installation checks

When making adjustments to the equipment, it is necessary:

- verify that the relevant medical gas shut-off valves are properly closed and ensure that the system cannot be reopened.
- verify that the system is electrically disconnected, and measures must be taken to ensure that the system cannot be reconnected.



**CAUTION:** Failure to comply with this point will result in serious damage.

### 7.1. Mechanical test

It must be checked that each of the anchorage points is properly fixed to the mounting surface and that the equipment does not move.



**WARNING:** Personal injury may result from dropping the equipment.

## 7.2. Electrical circuit tests.

In accordance with IEC 60601-1, the following tests shall be performed to ensure the proper functioning of the equipment:

1. Voltage verification at power sockets
2. Lighting module operation check
3. Protective earth connection verification
4. Equipotential bonding verification

Power must be supplied to each of the circuits provided and a test must be carried out to check that all the mechanisms provided in the circuit in question, and only these, are supplied with voltage.

- Check continuity of protective earth wiring.



**DANGEROUS VOLTAGE:** To avoid risk of electric shock, equipment must be connected to a protective earth. Failure to do so may result in personal injury.

## 7.3. Gas circuit test.

To verify the correct installation of the medical gas pipelines, the following tests are carried out:

1. Tightness test, according to Annex C UNE-EN ISO 7396-1.
2. Mechanical integrity, according to Annex C UNE-EN ISO 7396-1.
3. Verification of mechanical operation and identification for medical gas outlets, according to Annex C UNE-EN ISO 7396-1.
4. Absence of cross-connections, according to Annex C UNE-EN ISO 7396-1.

These tests shall be carried out at operating pressure.



**CAUTION:** Danger of metallic element impact due to faulty disconnection, can cause serious personal injury.

## 7.4. Check envelope.

Check that each of the enclosure elements that have been removed to carry out the installation operations described in this manual are properly fixed and secured in their intended position.

- Checking of openings, closings, foldings, displacements.



**WARNING:** The use of gloves is recommended as minor personal injury may occur.

## 8. Regulations

### 8.1. Team ranking

According to the new **MDD 93/42/EEC** regulation on medical devices, this product group is classified as:

- Class IIb, according to Annex II, with the exception of section 4, rule 11.

-IP20 protection class according to IEC 60529.

Equipment designed for continuous operation.

### 8.2. Reference standards

The device complies with the safety requirements of the following standards and directives:

ISO11,197 Medical supply units

IEC 60601-1: Medical electrical equipment. General requirements for basic safety and essential performance.

IEC 60601-1-2: Medical electrical equipment. Part 1-2. General requirements for basic safety and essential performance. Collateral standard. Electromagnetic disturbances.