REZNOR

INSTALLATION AND OPERATING MANUAL

Sonning²

OHA Systems, Gas

(OHA 100, 200, 400)

WARNINGS

Nortek Global HVAC (UK) Limited equipment must be installed and maintained in accordance with the requirements of the Codes of Practice or rules in force. All external wiring MUST comply with the codes of practice or rules in force in the country of installation.

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.

Read instructions before installing or servicing this equipment. Gas-fired appliances are not designed for use in hazardous atmospheres containing flammable vapours or combustible dust, containing chlorinated or halogenated hydrocarbons, or in applications with airborne silicone substances.

NORTEK GLOBAL HVAC

ErP 2018 ErP Lot 20 Seasonal Efficiency and NOx compliant

Part No. D301067

CE

CONTENTS

1 GENERAL STANDARDS

Before using the appliance, read this manual carefully.

The instructions given herein must be carefully followed, especially with regards the safety standards. The manufacturer declines all responsibility for direct or indirect damage caused to people, animals and property by failure to observe the instructions given herein.

ATTENTION ! !

- This instruction manual is an integral and important part of the radiant strip and must be kept in a safe place nearby for prompt consultation.
- Please read the instructions and warnings given in this manual carefully, as they give you important information regarding safety, installation, use and maintenance.
- If you lose this manual, please contact the manufacturer for a new one.
- This unit has been designed for heating large work areas, like industrial sheds and workshops, warehoues, areas with extensive air exchange, loading bays outside sheds, sports facilities, gymnasiums. As it works with the heat radiation principle; it can be used for heating single areas or for heating the entire room.
- The unit cannot be used to heat industrial areas where the processes and materials used carry the risk of gas, vapour or dust formation which could cause fires or explosions.
- The unit must only be installed by professionally qualified persons, fully respecting current legislation in force. The manufacturer declines all liability for damage caused due to faulty installation or improper and incorrect use of the radiant strip.
- The gas and electrical distribution must be made in accordance with national and local regulations in force in the country where the appliance is installed.
- The unit must be commissioned by a qualified engineer.
- If the radiant strip stops or does not work properly, turn it off immediately. Any parts must be repaired or re placed by a qualified engineer, using only original spare parts. Failure to do so could make the unit unsafe to use.
- To get the best performance from the radiant strip, the manufacturer's instructions must be followed in full and a full maintenance check must be performed at least once a year by a qualified engineer.
- The packing material (nylon, polystyrene, wood, staples, etc.) must not be left lying around within the reach of children, as they are potentially dangerous and also polluting, they must be collected and disposed of in accordance with current legislation.
- If the unit changes hands, or a new tenant enters the premises, all the documentation relative to the radiant strip must be handed over to the new owner.

2 PACKAGING

2.1 PACKING LIST

1) Combustion chamber complete with terminal and electric board are delivered packed on a pallet, wrapped with shrinkwrap.

2) Radiant strip is delivered loose, the pipe is supplied in sections of 6 meters long and packed; the insulation is in nylon bags, all the accessories (bends, brackets, sides, etc.) are packed on pallets and wrapped in shrinkwrap.

3 TECHNICAL FEATURES

3.1 OPERATING DESCRIPTION AND FEATURES

OHA radiant strips are composed of a suspended combustion chamber on the outside and a radiant strip installed inside the facility to be heated.

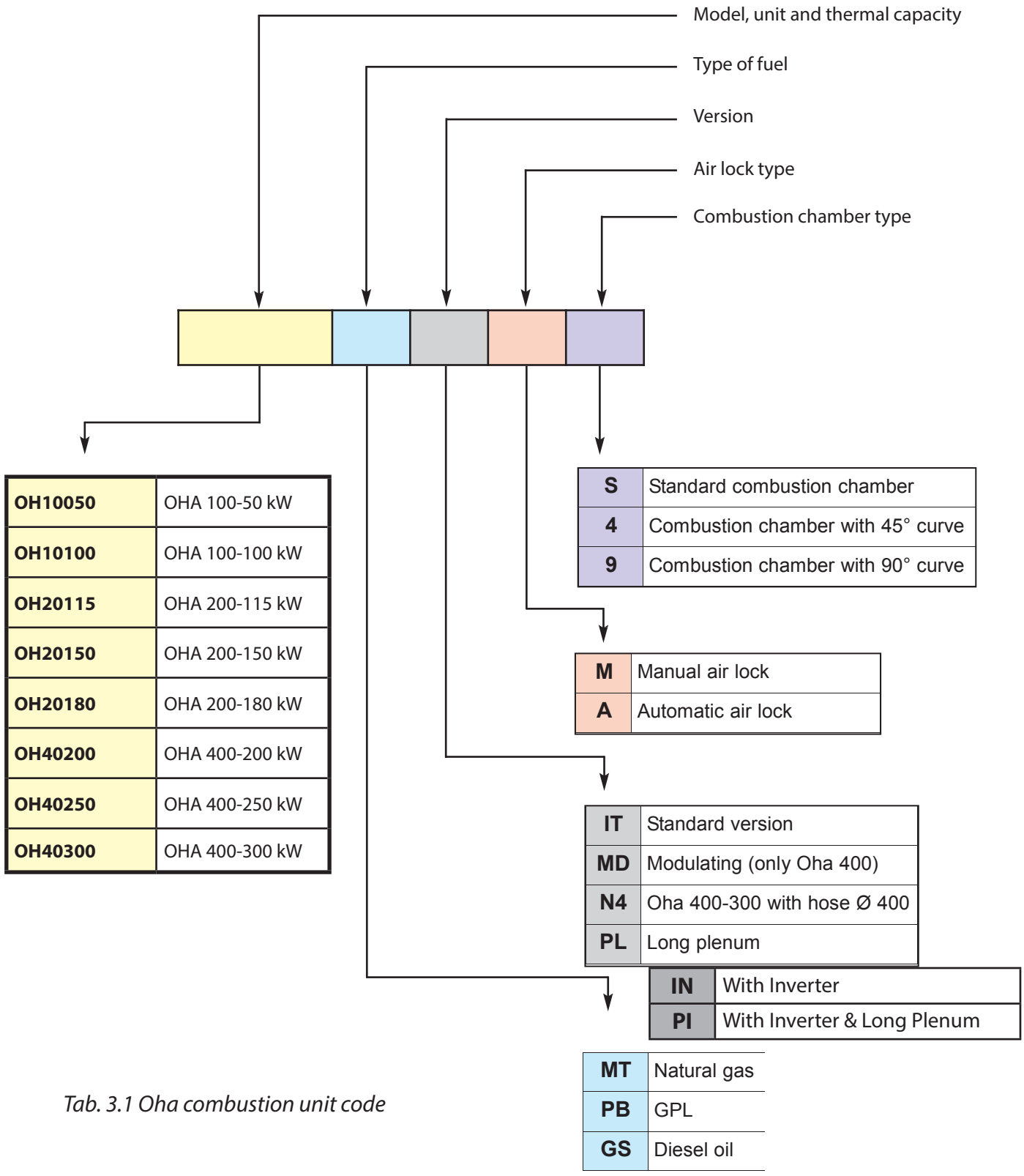
The combustion chamber generates heat through a gas burner, and the vector fluid is constantly recycled by a fan inside the airtight radiant strip which operates under negative pressure.
The variable temperature heat vector fluid is recycled fuel gas, which heats up the stainles steel combustion chamber and mixes with the new fuel gas produced by the burner; both these phases take place on the outside. A special pressurised manifold, mounted on the outside eliminates a part of the burnt mixture through the flue pipe, equivalent in mass to the amount of air and gas that enters the burner.

The temperature of the radiant pipes can vary between a minimum of 150°C and a max. of 300°C, depending on the project. We recommend installing a limit thermostat to allow setting the max. surface temperature of the pipes at levels based on the height the radiant band is installed and the type of processes and materials contained in the premises.
An electric command and control system operates with detection probes to guarantee correct operation of the heat generation processes in the combustion chamber, of heat exchange and airtightness of the radiant strip inside the room, depression in the entire radiant unit and the discharge of the burnt gases through the exhaust pipe.

The comfortable level inside the premises depends on both the air temperature and the average radiated temperature and is set by the black bulb globe inside the room, which, through the electric command and control board, switch on the operations of each single burner, changing the heat delivery (two stage regulation) and controlling ignition. They switch off on the basis of the outside temperature and/or the working hours.

3.2 TECHNICAL FEATURES OF THE COMBUSTION UNIT

3.2.1 Code table



Tab. 3.1 Oha combustion unit code

Example: **OH20180 MT IT M S**
Thermal unit model OHA 200 (OH20), thermal capacity **180 kW** (180), feed **Natural Gas** (MT), **standard** version (IT), **manual** air lock (M), standard combustion chamber (S)

N.B. no spaces must be left in the codes: **OH20180MTITMS**

MODEL			OHA 100		OHA 200		
VERSION			OHA 100-50	OHA 100-100	OHA 200-115	OHA 200-150	OHA 200-180
Thermal capacity		kW (Hi)	50	100	115	150	180
Thermal power		kW (Hi)	45.5	93.0	105.2	138.0	165.6
Combustion efficiency average		%	91.0	93.0	91.5	92.0	92.0
Rated consumption	Natural gas G20	m3/hr	5.29	10.58	12.17	15.87	19.05
	LPG Propane G31	kg/hr	3.88	7.77	8.93	11.65	13.98
Power supply			3/N/PE 50Hz 400v		3/N/PE 50Hz 400v		
Absorbed power		W	1350		3450		4450
Gas supply size		Inches	1″		1″		
Appliance weight		kg	90		230		240
Flue diameter		mm	200		200		
Maximum flue length		m	6		6		
Appliance type			B22		B22		

Tab. 3.2a Features of the OHA combustion unit

MODEL			OHA 400		
VERSION			OHA 400-200	OHA 400-250	OHA 400-300
Thermal capacity		kW (Hi)	200	250	300
Thermal power		kW (Hi)	183	230	276
Combustion efficiency average		%	91.0	92.0	92.0
Rated consumption	Natural gas G20	m3/hr	21.16	26.46	31.75
	LPG Propane G31	kg/hr	15.54	19.42	23.31
Power supply			3/N/PE 50Hz 400v		
Absorbed power		W	4450		5700
Gas supply size		Inches	1″		
Appliance weight		kg	240		260
Flue diameter		mm	200		
Maximum flue length		m	6		9
Appliance type			B22		

Tab. 3.2b Features of the OHA combustion unit

Categories
GB 11 2H3P

	OHA 100-50		OHA 100-100		OHA 200-115		OHA 200-150		OHA 200-180		OHA 400-200		OHA 400-250		OHA 400-300	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
TYPE U	23	30	31	55	51	66	67	83	81	100	90	110	111	138	135	150
TYPE M	34	55	56	85	79	98	99	127	124	153	138	170	171	212	207	254

3.3 Maximum and Minimum Strip Lengths

3.2.2 Main components in the generator

DESCRIPTION	PART NUMBER	OHA 100-50	OHA 100-100	OHA 200-115	OHA 200-150	OHA 200-180	OHA 400-200	OHA 400-250	OHA 400-300
Control equipment	00CEAP0776								
Adjustable air pressure switch 50-500Pa	00CEPR1110								
Motor 1.1kW 1400 rpm + fan wheel Ø 330 x H 140	05ASMO0100								
Motor 3kW 2820 rpm + fan wheel Ø 330 x H 100	05ASMO0101								
Motor 4kW 2880 rpm + fan wheel Ø 330 x H 115	05ASMO0102								
Motor 5.5kW 2900 rpm + fan wheel Ø 330 x H 140	05ASMO0103								
Solenoid valve 3/4"	05CEGV2506								
Solenoid valve 1"	05CEVG2507								
Inverter 4kW	05CEIN2620								
Inverter 5.5kW	05CEIN2618								
Inverter 7.5kW	05CEIN2619								

Tab 3.4

3.2.3 Generator components technical information

CONTROL BOARD	
Part Number	00CEAP0776
Electric power supply	220/240V 50 Hz
Working temperature	-20°C ÷ + 60°C
Pre-washing time	20 sec
Start up safety delay time	max 10 sec
Turn off safety delay time	< 1 sec
PRESSURE SWITCH	
Part Number	00CEPR1110
Assembly position	Vertical
Reset point	50÷500 Pa (± 4 Pa)
Pneumatic connection	wØ 6.2 mm
Max. working pressure	5000 Pa
Working temperature	-30°C ÷ +60°C
ASYNCHRONOUS THREE-PHASE ELECTRIC MOTOR 1.1 kW	
Part Number	05CEMO0766
Electric power supply	400V 50/60 Hz
Electric output	1.1 kW
Absorbed electric power	2.60 A
Motor rpm	1.400 rpm
ASYNCHRONOUS THREE-PHASE ELECTRIC MOTOR 3 kW	
Part Number	05CEMO0763
Electric power supply	400V 50/60 Hz
Electric output	3 kW
Absorbed electric power	6.1A
Motor rpm	2820 rpm
ASYNCHRONOUS THREE-PHASE ELECTRIC MOTOR 4 kW	
Part Number	05CEMO2633
Electric power supply	400V 50/60 Hz
Electric output	4 kW
Absorbed electric power	7,88A
Motor rpm	2880
ASYNCHRONOUS THREE-PHASE ELECTRIC MOTOR 5.5 kW	
Part Number	05CEMO0761
Electric power supply	400V 50/60 Hz
Electric output	5.5 kW
Absorbed electric power	10.6 A
Motor rpm	2900 rpm
SOLENOID VALVE 3/4"	
Part Number	05CEGV2506
Electric power supply	230 50/60Hz
Protection level	IP40
Gas attachment	3/4"
Operating temperature	-10°C ÷ +60°C

SOLENOID VALVE 1”	
Part No.	05CEGV2507
Electric power supply	230V 50/60 Hz protection level IP40
Gas attachment	1”
Operating temperature	-10°C ÷ +60°C

INVERTER	
4kW Part No.	05CEIN2520
5.5kW Part No.	05CEIN2520
7.5kW Part No.	05CEIN2520
Electrical Supply	3ph 380v 50/60 Hz
Ingress Protection	IP20
Operating Temperature	-10 degC to +40degC
Humidity	20-80%

3.3 THERMAL UNIT EXPLODED VIEW

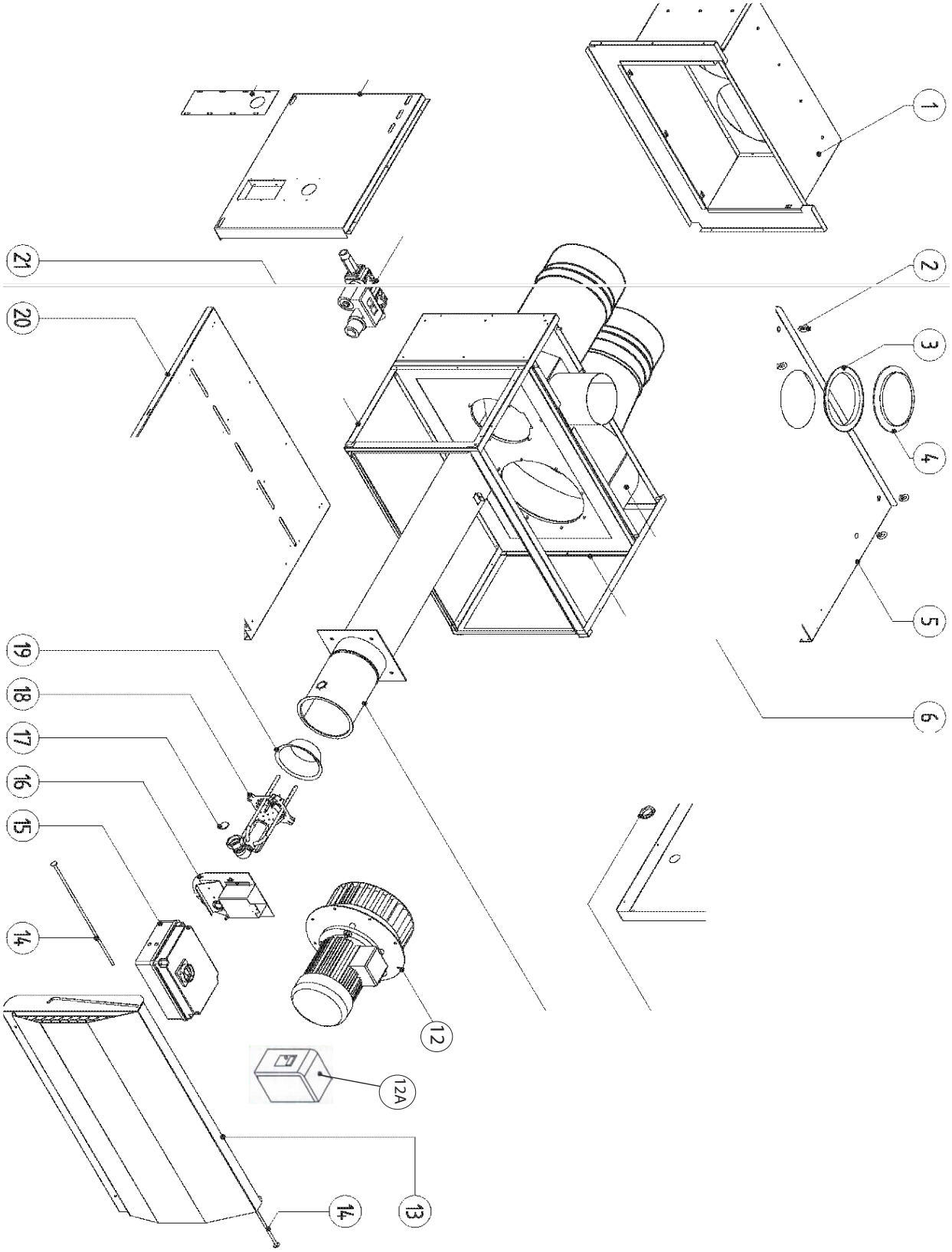


Fig. 3.1 Exploded view OHA

12A

ITEM	DESCRIPTION	QUANTITY
1	Plenum	1
2	M8 eyebolt - female	4
3	Bottom collar	1
4	Top collar	1
5	Top outside panel	1
6	Machine body	1
7	Sealing frame	1
8	Right side external panel	1
9	Sheath clamp Ø 35mm	1
10	Sheath clamp Ø 35mm (nut)	1
11	Combustion chamber	1
12	Motor CW impeller and flange	1
12A	Inverter	1
13	Door panel	1
14	Threaded door bar	2
15	Control panel with door locked isolator	1
16	Air lock	1
17	Gas diaphragm	1
18	Combustion head	1
19	Combustion cone	1
20	Bottom external panel	1
21	Panel supporting frame	1
22	Gas pipe disc	1
23	Hole cover	1
24	Left side external panel	1
25	Solenoid valve assembly	1

Tab 3.5

3.4 DIMENSIONS OF THE GENERATOR

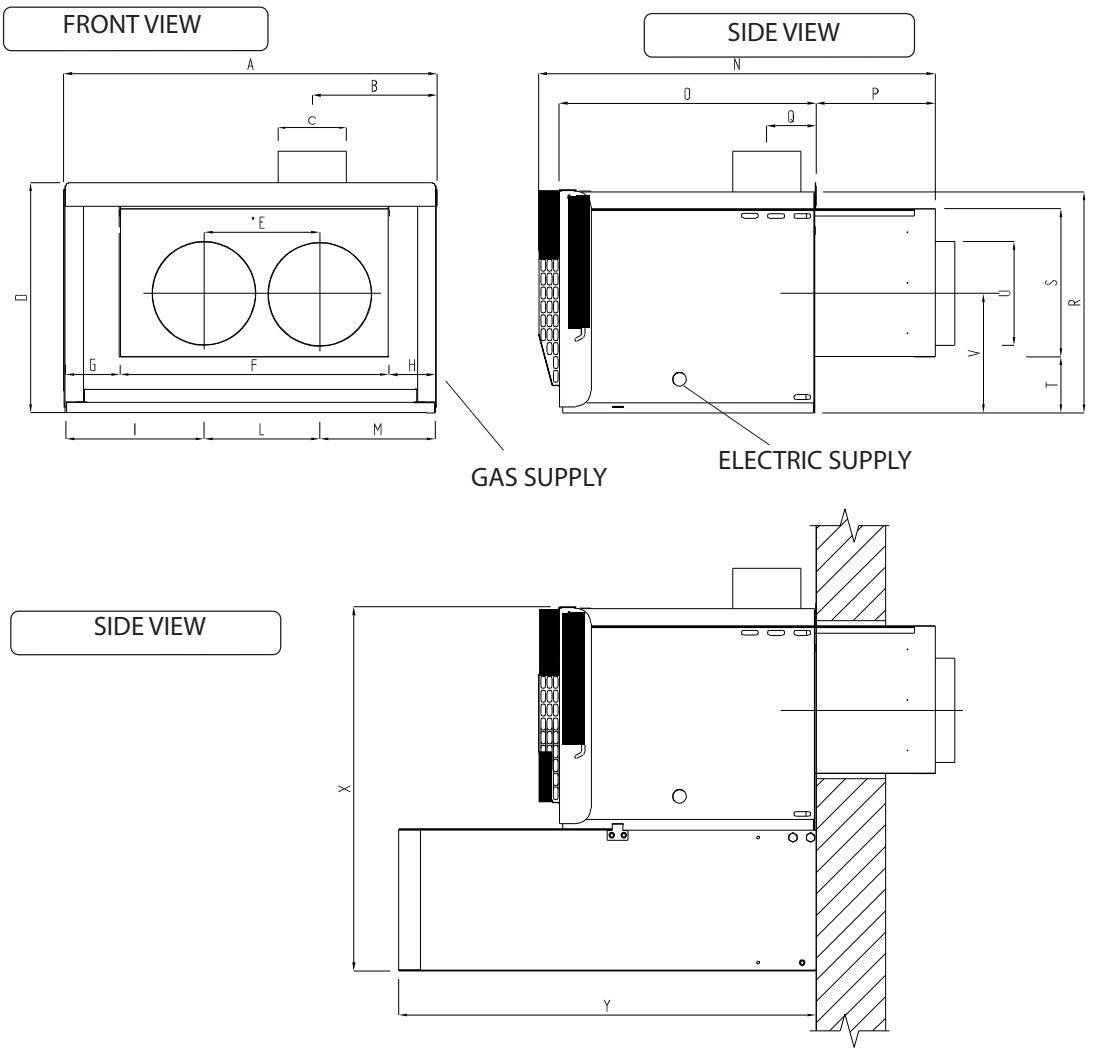


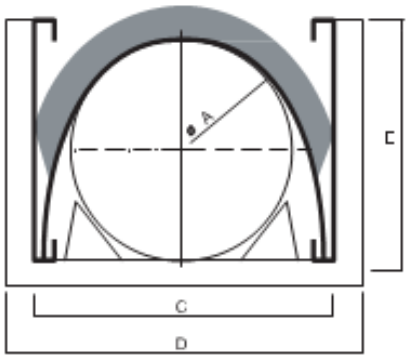
Fig.3.2 External Dimesnsions of the OHA heating unit

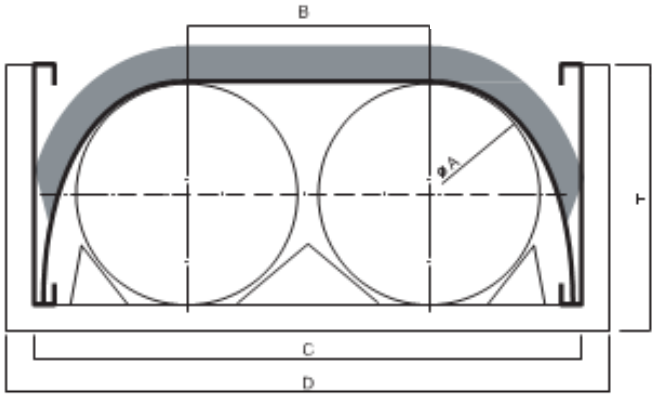
HEIGHT	DIMENSION (mm)		HEIGHT	DIMENSION (mm)	
	Unit with pipe Ø 300 mm	Unit with pipe Ø 400 mm		Unit with pipe Ø 300 mm	Unit with pipe Ø 400 mm
A	1075		**N**	1292	
B	359		**O**	740	
C	200		**P**	493	
D	664		**Q**	142	
E	333	430	**R**	637	
F	774	923	**S**	426	475
G	157	67	**T**	162	113
H	134	70	**U**	300	400
I	398	319	**V**	344	352
L	333	430	**X**	1049	
M	333	302	**Y**	1202	

Tab 3.6

N.B. for units with long plenum, the P and N heights can be respectively 1003 and 1802 mm

3.5 DIMENSIONS OF THE RADIANT STRIP





DIMENSIONS			
LEVEL	**1 pipe**	**2 pipe**	**2 pipe**
A	Ø 300	Ø 300	Ø 400
B	--	335	460
C	512	850	1020
D	580	918	1088
E	374		478
Weight (kg/m)	19	28	35
Weight upper plate (kg/m)	2.5	4.0	4.8
Weight protection grid (kg/m)	1.2	2.0	2.3

Tab 3.7

Fig.3.3 Overall dimensions of the strip

Example: weight of mod. U 300 radiant strip with upper plate and lower protection net

Total weight for meter = 28 + 4,0 + 2,0 = 34,0 kg/m

3.6 OHA 100, OHA 200, OHA 400 COMBUSTION HEAD

OHA 100					
	Units	**Natural gas G20**	**LPG G31**	**Natural gas G20**	**LPG G31**
Thermal capacity	kW	50		100	
Cone diameter	mm	70			
Combustion chamber diameter	mm	204			
Combustion chamber extended diameter	mm	204			
Combustion head part number		05CNTO2506			
Number of additional injectors	n	Without injectors			
Combustion chamber vacuum	mbar	2.5	3.0	2.5	3.0
Gas diaphragm diameter	mm	7.5	4.5	12.0	6.5
Nozzle pressure	mbar	15.0	36.0	18.0	36.0

Tab.3.8

OHA 200							
	Units	**Natural gas G20**	**LPG G31**	**Natural gas G20**	**LPG G31**	**Natural gas G20**	**LPG G31**
Thermal capacity	kW	115		150		180	
Cone diameter	mm	80					
Combustion chamber diameter	mm	168					
Combustion chamber extended diameter	mm	204					
Combustion head part number		05CNTO2505	05CNTO2506	05CNTO2505	05CNTO2506	05CNTO2505	
Number of additional injectors	n	2	Without injectors	2	Without injectors	2	
Combustion chamber vacuum	mbar	5.0					
Gas diaphragm diameter	mm	9.0	6.5	12.0	7.5	13.0	8.0
Nozzle pressure	mbar	17.0	33.0	14.0	36.0	15.0	36.0

Tab.3.9

OHA 400					
	Units	**Natural gas G20**	**LPG G31**	**Natural gas G20**	**LPG G31**
Thermal capacity	kW	200		250	
Cone diameter	mm	120			
Combustion chamber diameter	mm	204			
Combustion chamber extended diameter	mm	204			
Combustion head part number		05CNTO2505		05CNTO2508	05CNTO2505
Number of additional injectors	n	2		4	2
Combustion chamber vacuum	mbar	5.0			
Gas diaphragm diameter	mm	13.0	7.5	15.0	8.5
Nozzle pressure	mbar	9.0	31.0	6.0	31.0

Tab.3.10a

OHA 400					
	Units	**Natural gas G20**	**LPG G31**	**Natural gas G20**	**LPG G31**
Thermal capacity	kW	300		400	
Cone diameter	mm	120		Without	120
Combustion chamber diameter	mm	204			
Combustion chamber extended diameter	mm	204			
Combustion head part number		05CNTO2508	05CNTO2505	05CNTO2508	05CNTO2505
Number of additional injectors	n	4	2	4	2
Combustion chamber vacuum	mbar	5.0			
Gas diaphragm diameter	mm	18.0	10.0	Without	11.5
Nozzle pressure	mbar	9.0	31.0	6.0	31.0

Tab.3.10b

3.6.1 Diaphragm and electrode positions

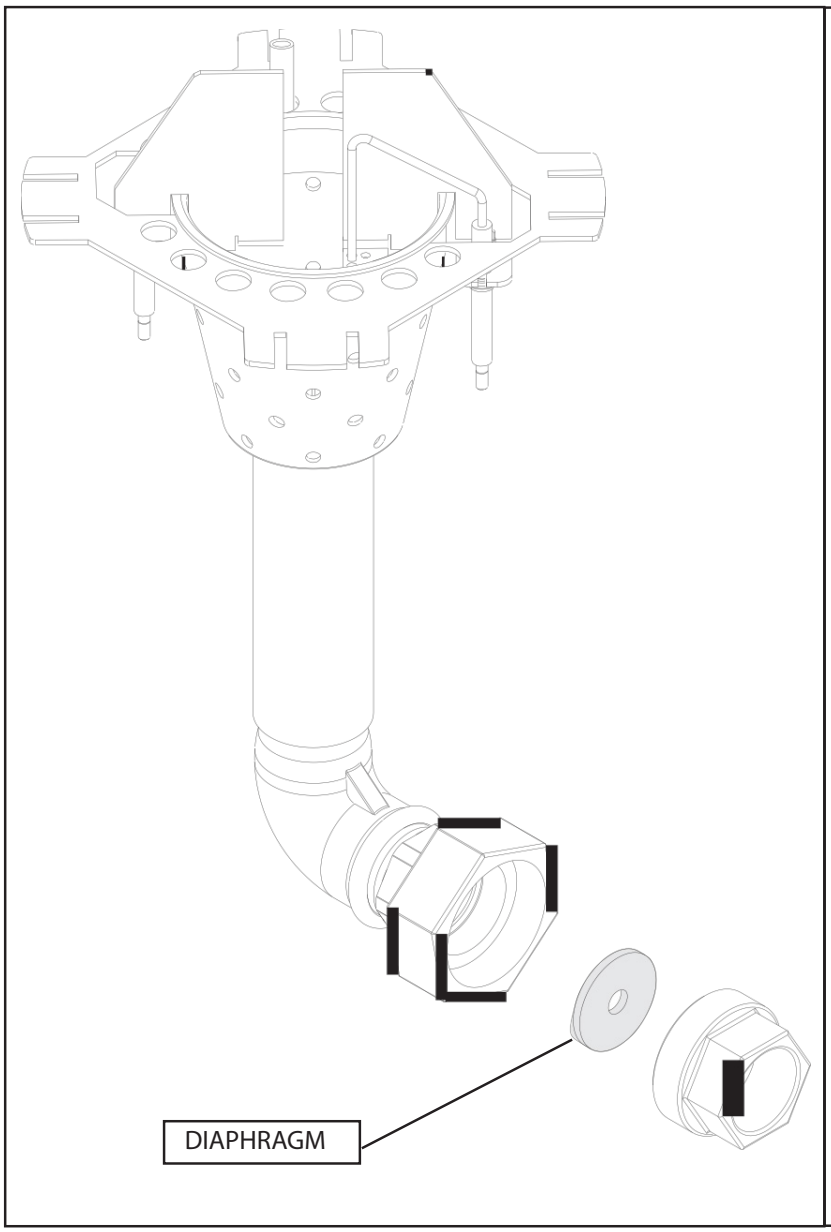


Fig. 3.4 Diaphragm position

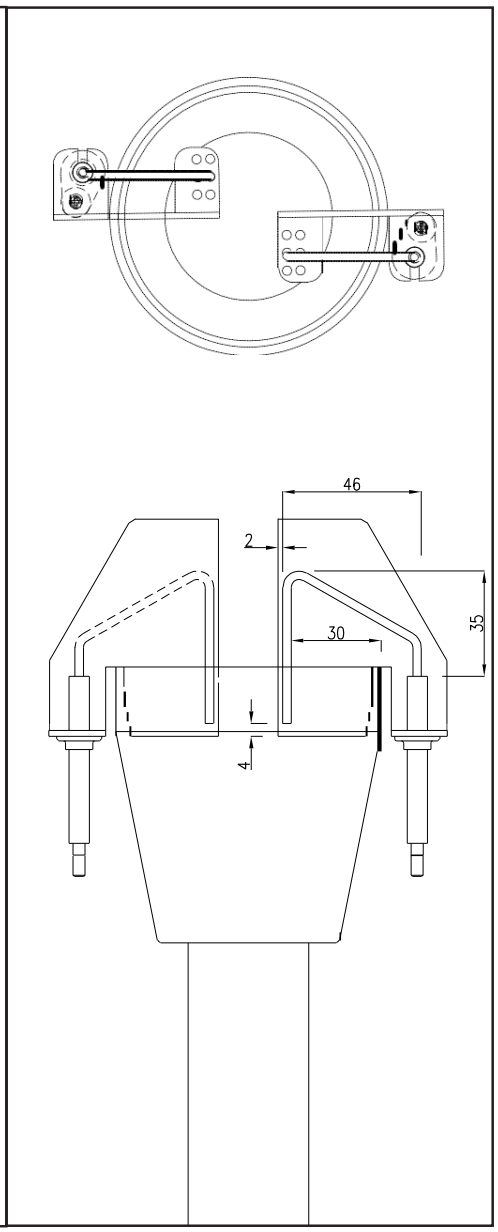


Fig. 3.5 Combustion head with electrode positions

4 INSTALLATION

4.1 INSTALLATION AREA AND SAFETY DISTANCE

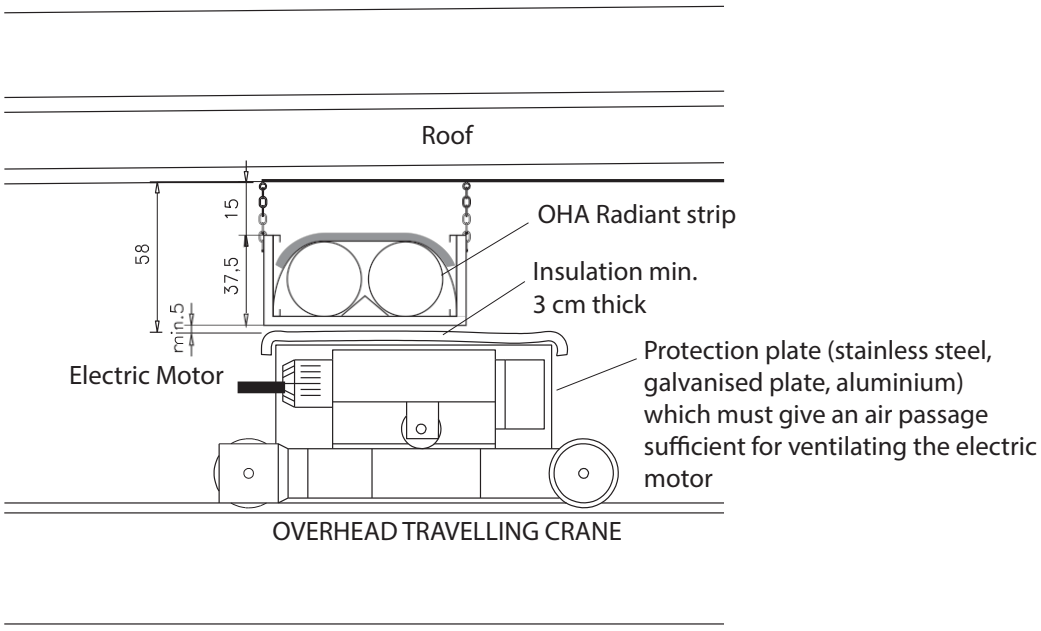


Fig.4.1 Protection for the overhead travelling crane

4.2 MINIMUM DISTANCE BETWEEN THE OHA RADIANT BAND AND INFLAMMABLE MATERIALS

The distance between the external surfaces of the radiating pipes and any inflammable materials must be sufficient to avoid such materials reaching dangerous temperatures, to avoid fires developing or combustion reactions. In all circumstances it must be at least 1.5 meters. The max. surface temperature of the radiating pipes can be set and controlled at any level between 150° - 300°C.

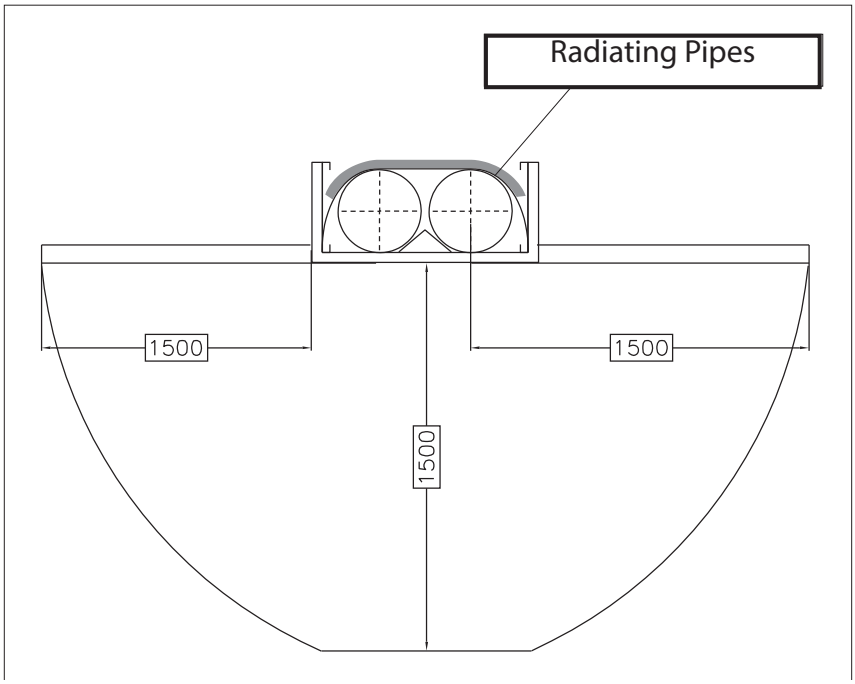


Fig.4.2 Minimum distances between the OHA radiant strip and inflammable materials

4.3 ASSEMBLY SEQUENCE FOR THE STRIP

1) DRILL THE HOLES IN THE WALL (refer to paragraph 4.4.2 phases 5a/5b e 4.4.3)

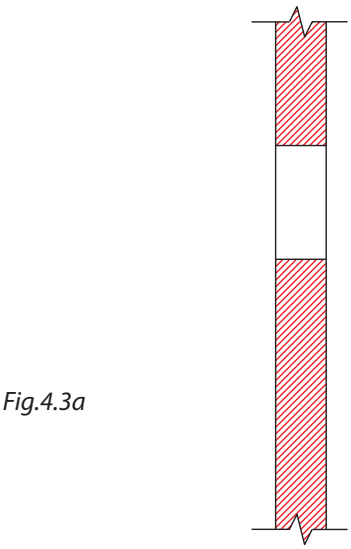


Fig.4.3a

2) INSTALLING THE SUPPORTING PLATFORM (refer to paragraph 4.4.2)

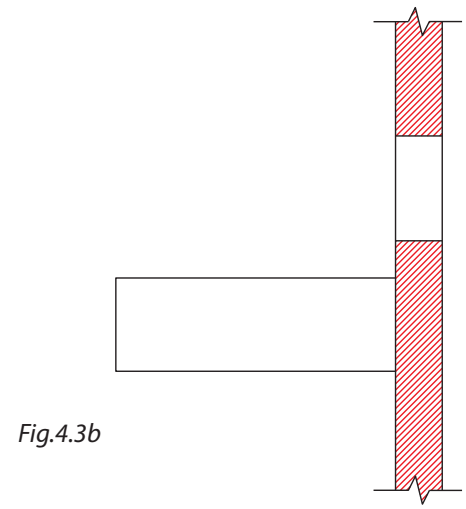


Fig.4.3b

3) FITTING THE COMBUSTION CHAMBER (refer to paragraphs 4.4.3; 4.5 e 4.6.1)

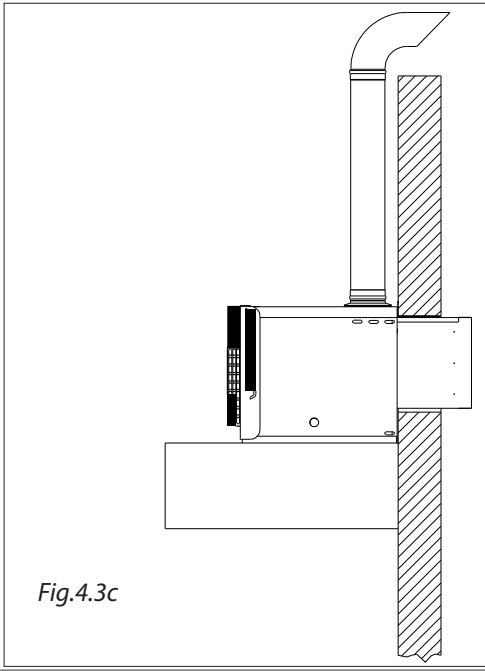


Fig.4.3c

4) FITTING THE BRACKETS (refer to paragraph 4.7

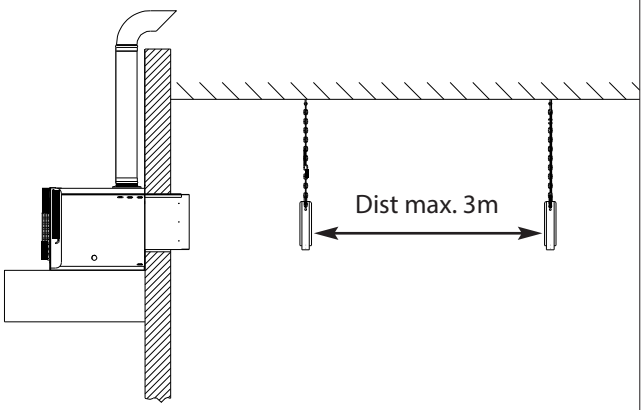


Fig.4.3d

5) INTALLING THE PIPES (refer to paragraphs 4.7.2; 4.7.3; 4.7.4; 4.7.5 e 4.7.7

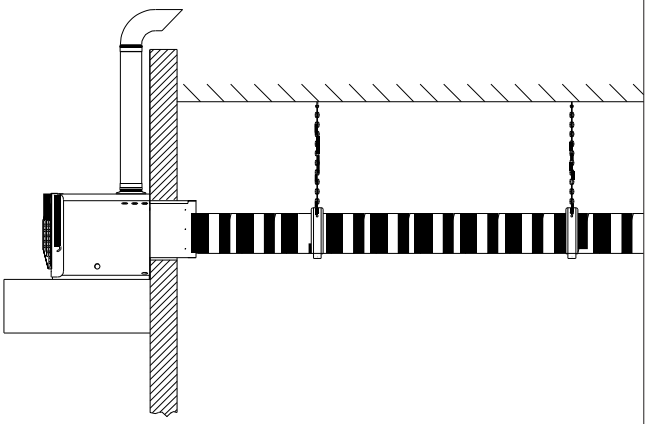


Fig.4.3e

6) FITTING THE SIDES AND TOP INSULATION (refer to paragraphs 4.7; 4.7.1; 4.7.5; 4.7.6 and 4.7.8)

7) CONNECTIONS TO THE GAS SUPPLY PIPES (refer to paragraph 5)

8) ELECTRIC CONNECTIONS
(refer to paragraph 6 and the instruction manual supplied with the electronic control board).

9) TESTING AND START UP
(refer to paragraphs 7;7.1; 7.2; 7.3; 7.4)

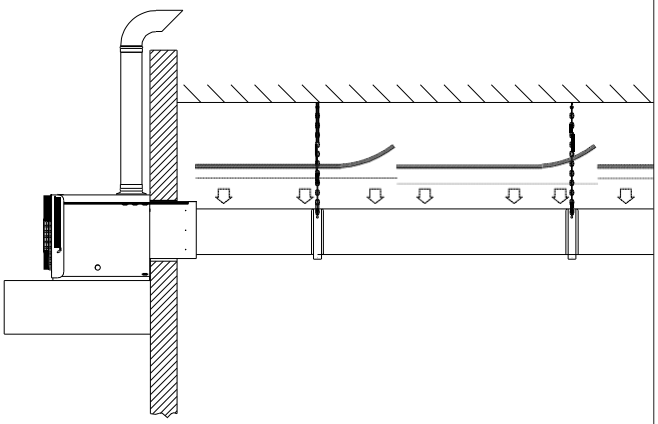


Fig.4.3f

4.4 MODULAR PLATFORM

4.4.1 Platform composition

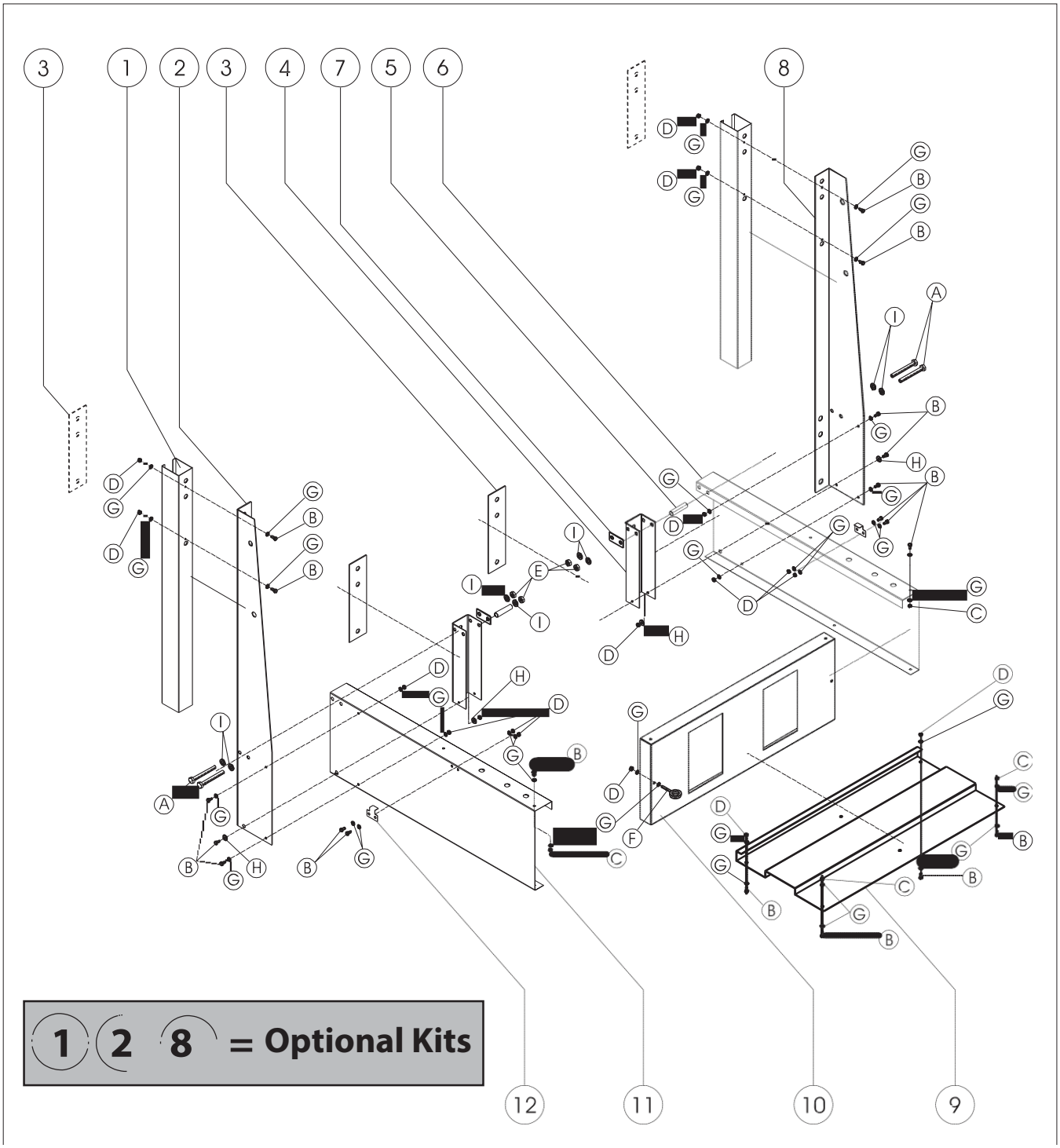


Fig. 4.4 modular platform

POS	PART NUMBER	DESCRIPTION	PLATFORM KIT 05ACKT0500	OPTIONAL	
				ANGULAR GLASS FIXING BRACKET KIT 05ACKT0502	PANEL SUPPORT KIT REI120 05ACKT0501
1	05CVPA8000	Panel support spacer REI120	--	--	2
2	05CVPA8002	Left hand angular support bracket for glass fixing	--	1	--
3	05CVPA8009	Internal plate for platform attachment	2	--	--
4	05CVPA8001	Head reinforcement	2	--	--
5	05CVD18008	Painted reinforcing spacer	2	--	--
6	05CVPA8010	Right side of OHA platform	1	--	--
7	05CVPA8004	Reinforcing plate	2	--	--
8	05CVPA8011	Right hand angular support bracket for glass fixing (opt)	--	1	--
9	05CVPA8006	Platform bottom	1	--	--
10	05CVPA8005	Platform front	1	--	--
11	05CVPA8003	Left side of platform	1	--	--
12	05CNPA8007	Side block for combustion unit	2	--	--
A	00CNVI1070	TE screws M14 x 130	4	--	--
B	00CNVI1050	TE screws M8 x 16	12	4	4
C	03CNDA3022	M8 self-locking nut	4	--	--
D	03CNDA0148	M8 nut	9	4	4
E	03CNDA0900	M14 self-locking nut	4	--	--
F	05CNGO0002	M8 male eyebolt	1	--	--
G	00CNRO0368	Galvanized washer 8 x 17	22	8	8
H	00CNRO1086	Galvanized washer 8 x 24	4	--	--
I	00CNRO1087	Galvanized washer 15 x 28	8	--	--

Tab.4.1

4.4.2 Assembling the standard platform (without glass fixing bracket kit and panel support kit REI120)

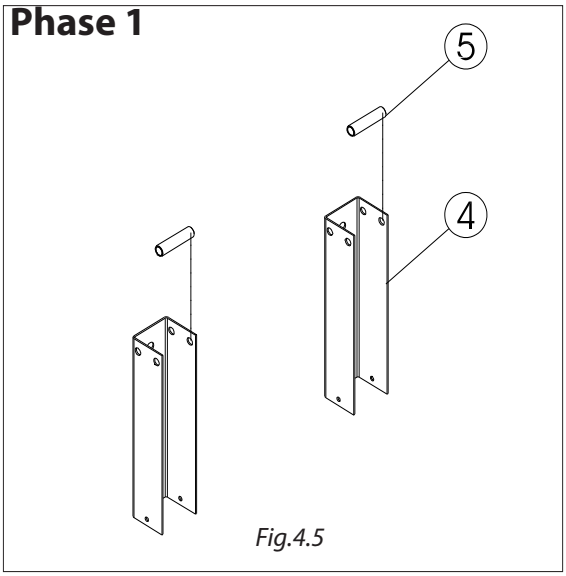
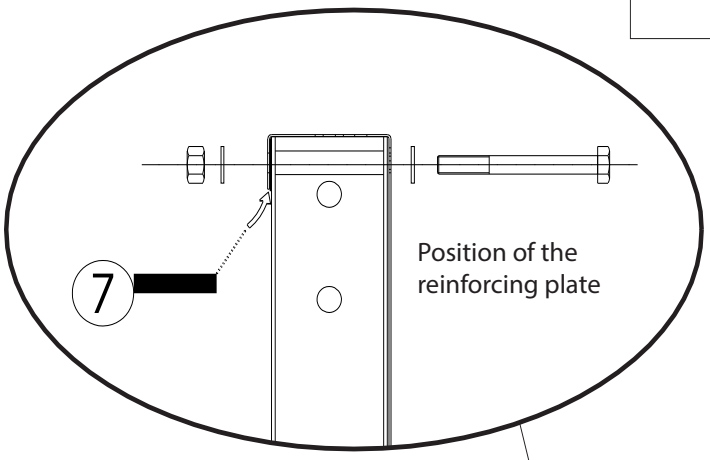
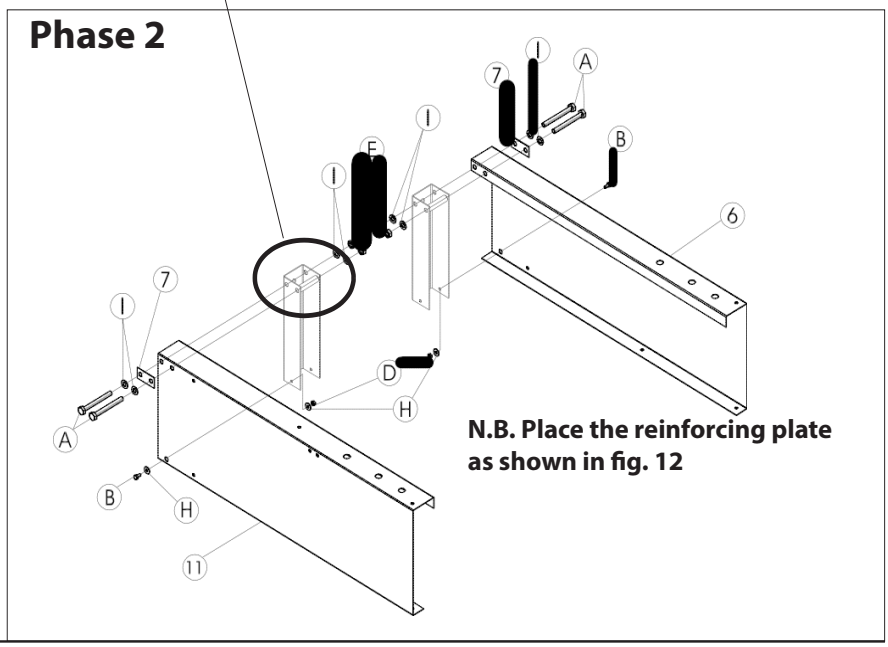


Fig.4.5





Phase 3

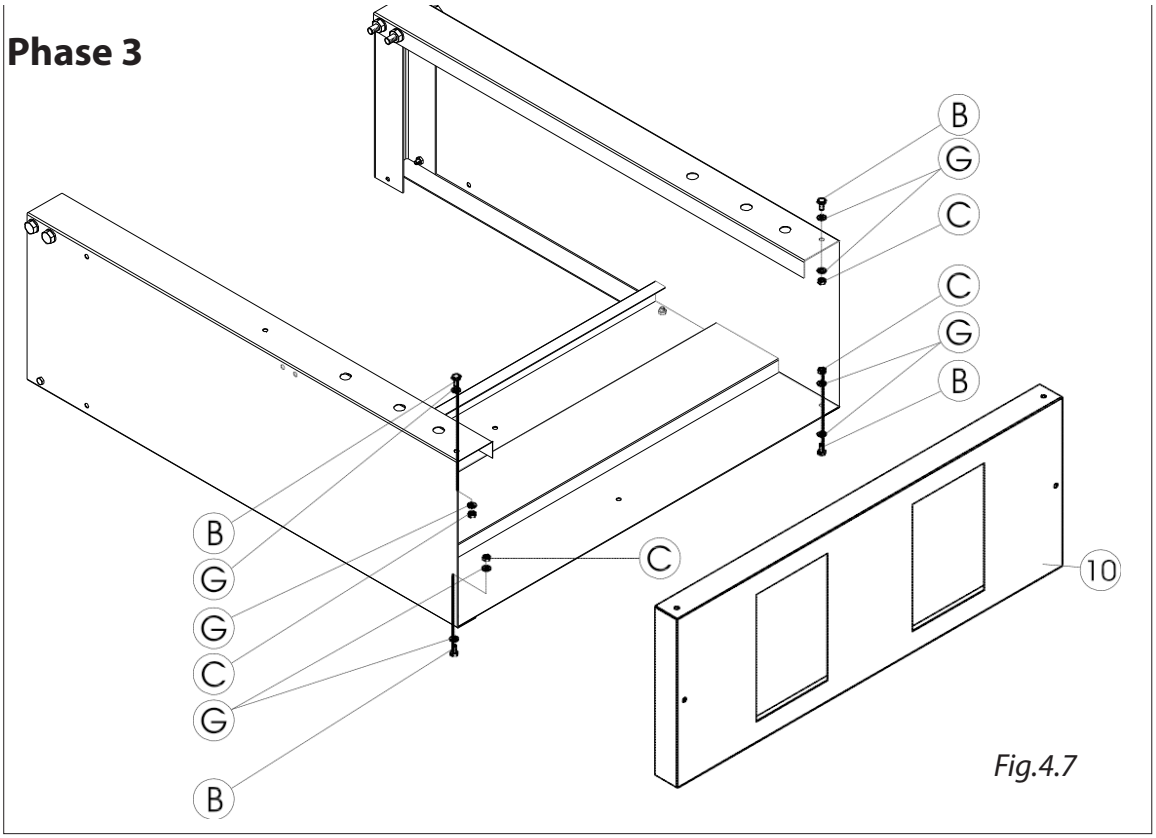


Fig.4.7

Phase 4

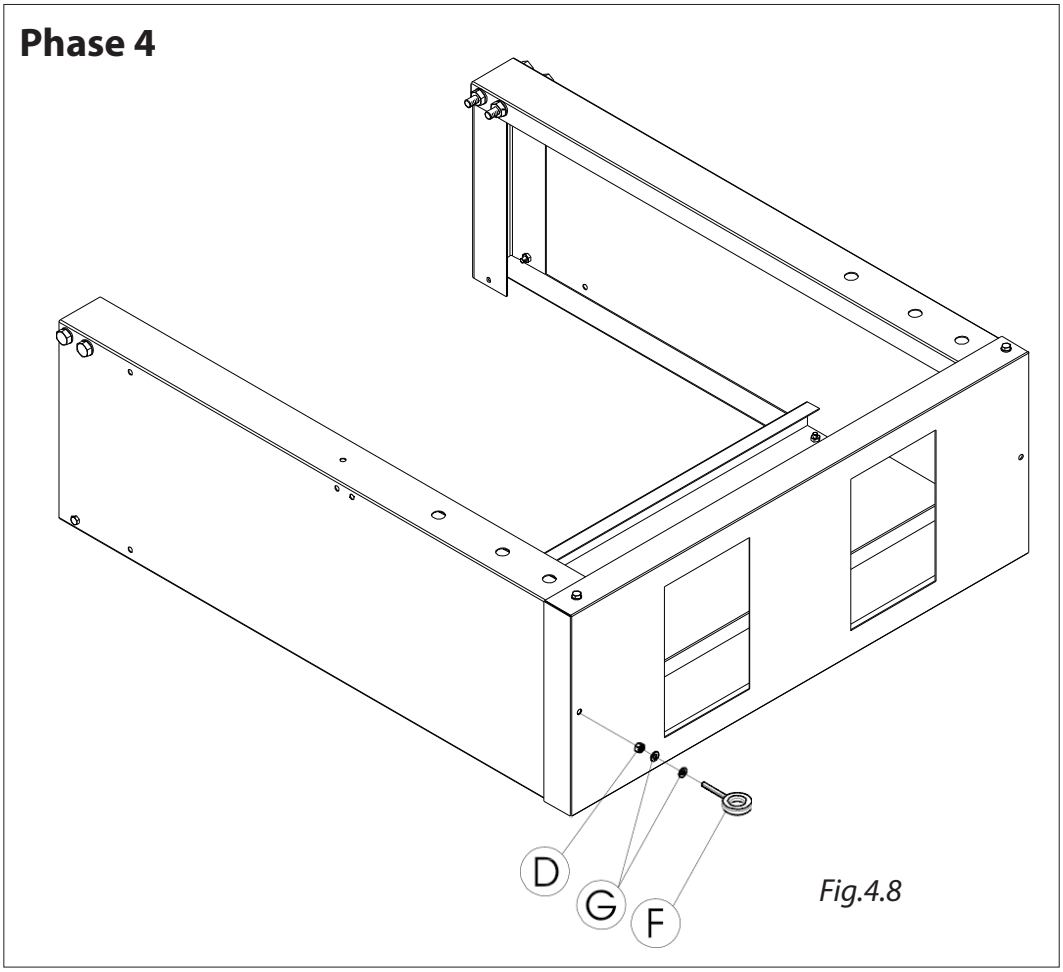


Fig.4.8

Phase 5:
Drilling the wall

LEVEL	DIMENSIONS (mm)	DIMENSIONS FOR PIPE Ø 400 (mm)
A	800	955
B	455	505
C	193	143
D	95	4
E	80	
F	237	
G	969	
H	74	10

Tab 4.2

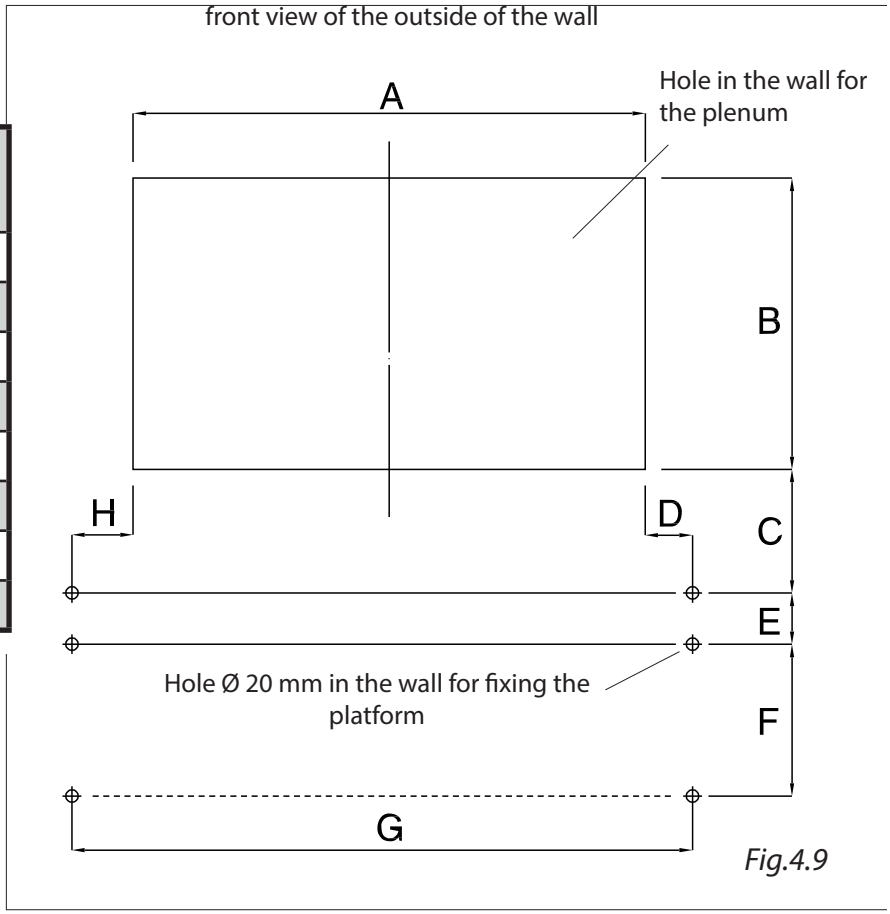


Fig.4.9

Phase 6:
Fixing the platform

N.B. threaded bar Ø 14 mm is required for fixing the platform to the wall

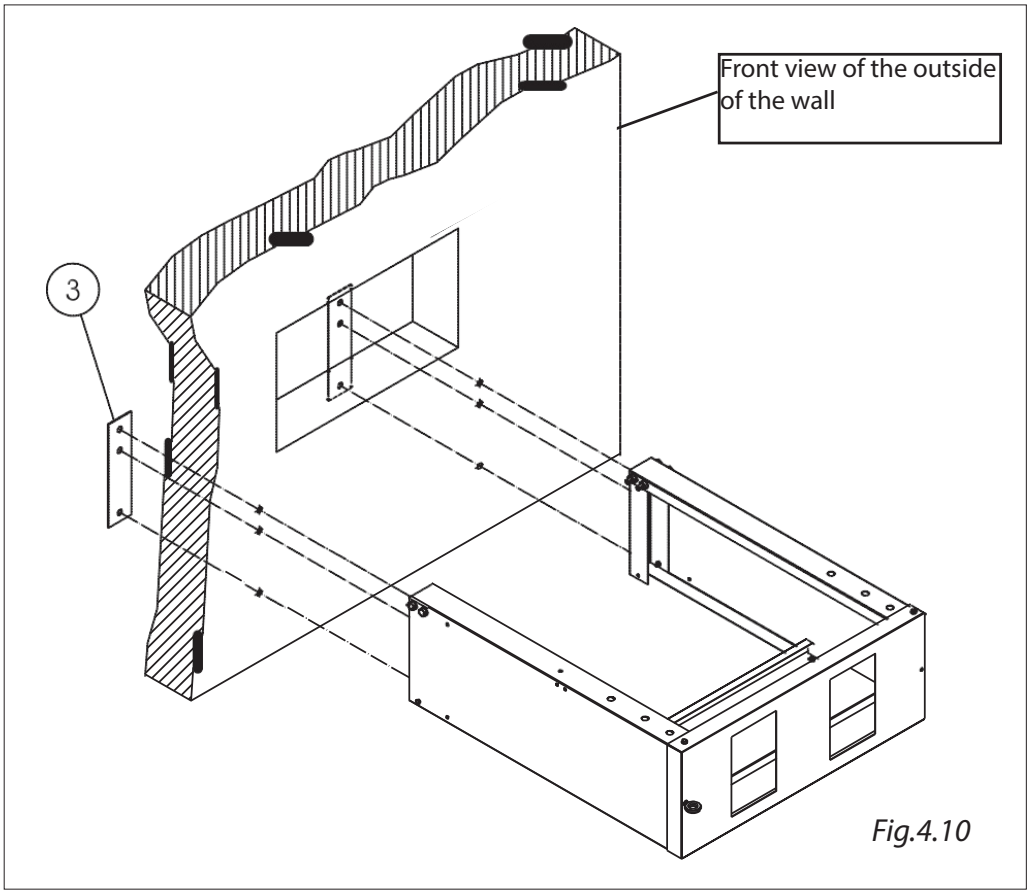
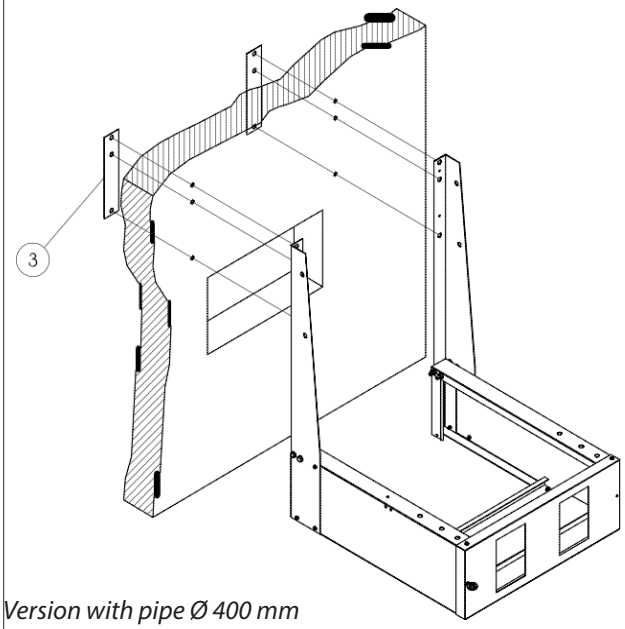
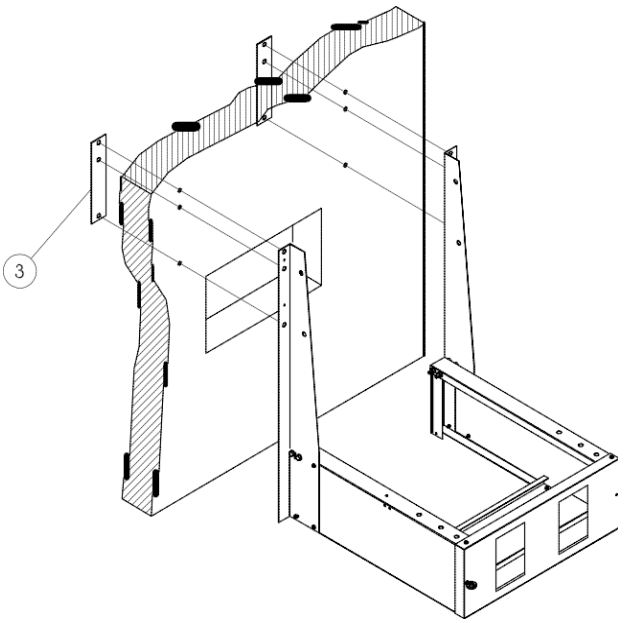


Fig.4.10

Fig.4.11 Fixing the platform with the glass fixing kit, see fig. 4.13 for the template.



Version with pipe Ø 400 mm



Version with pipe Ø 400 mm

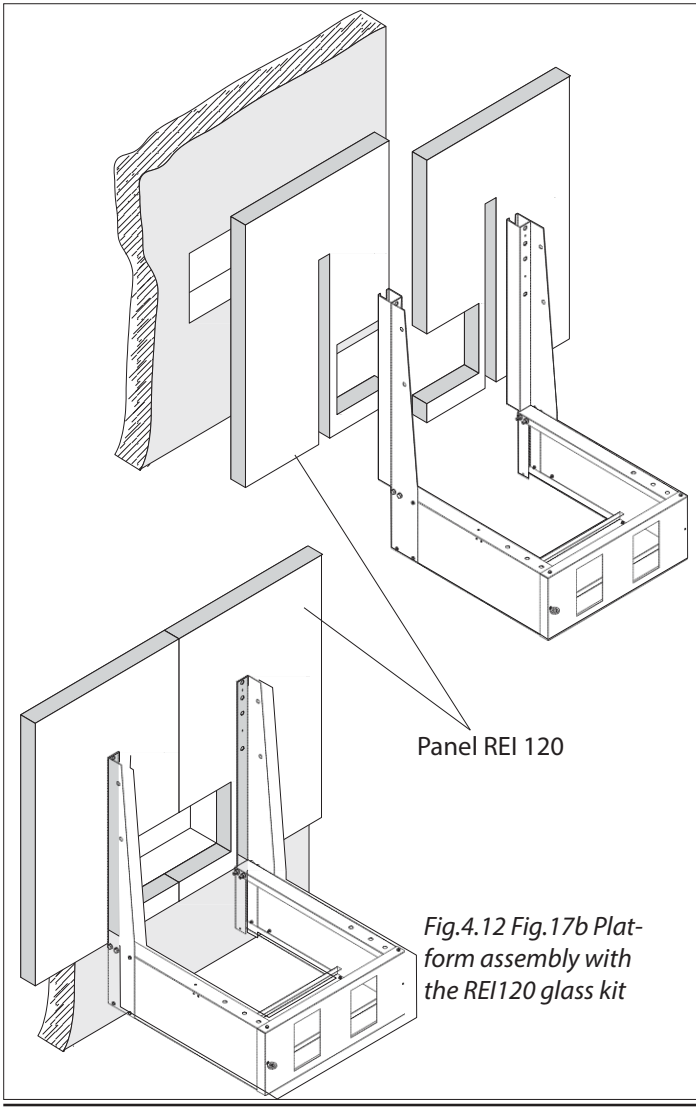


Fig.4.12 Fig.17b Platform assembly with the REI120 glass kit

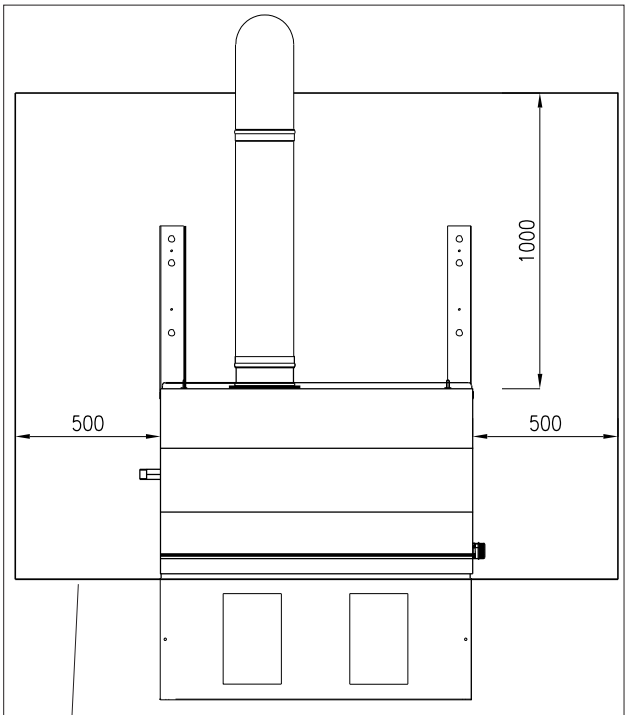


Fig.4.12a Front view of unit OHA with panel REI 120 dimensions

4.4.3 Hole for platform with glass holder kit and REI120 panel support kit

LEVEL	OHA 100,200, 400 (mm)	DIMENSIONS FOR PIPE Ø 400 (mm)
A	990	1148
B	80	
C	237	
D	106	94
E	232	
F	800	955
G	455	505
H	84	99

FRONT VIEW OF THE OUTSIDE OF THE WAL

Hole in the wall for the plenum

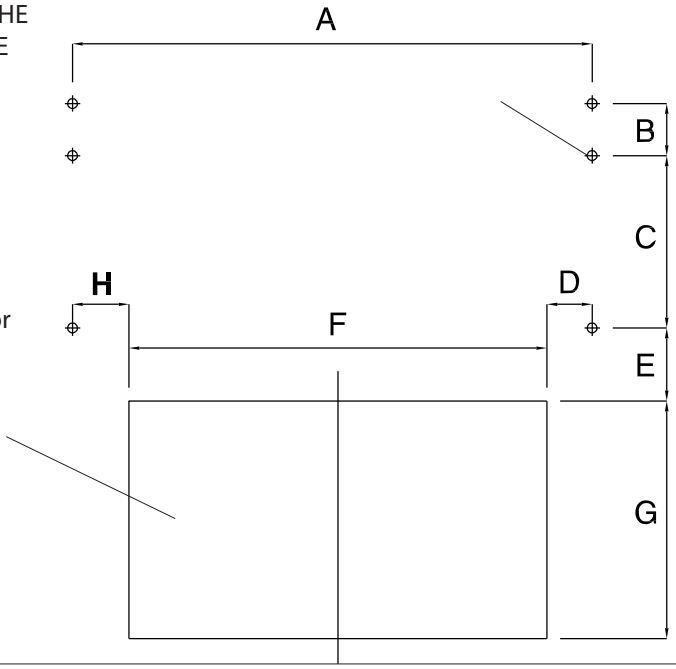


Fig.4.13

4.5 ASSEMBLING THE HEATING UNIT ON THE PLATFORM

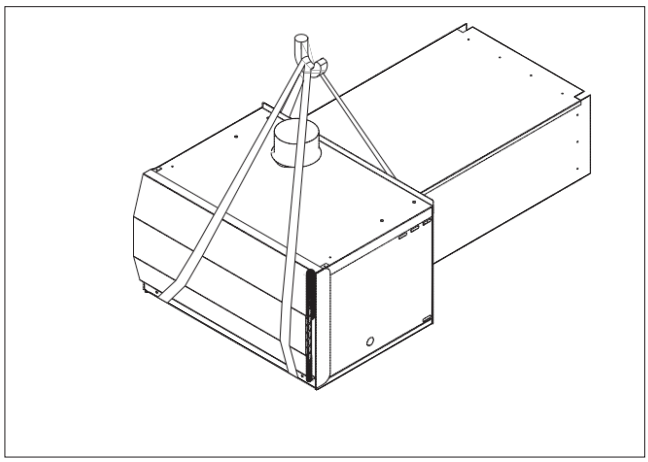


Fig.4.14a How to lift the combustion chamber (without using the eyebolts)

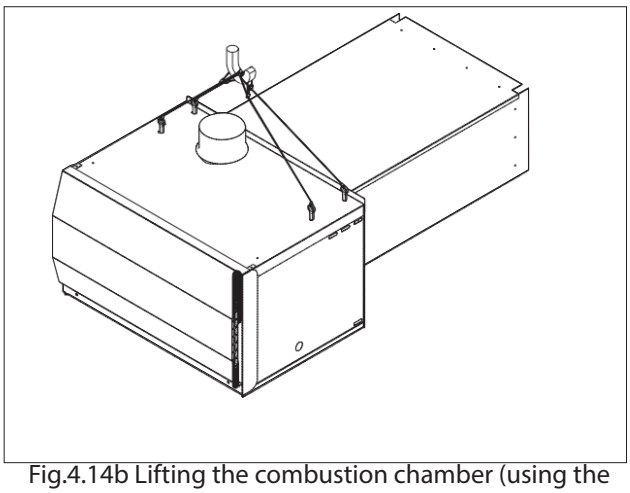
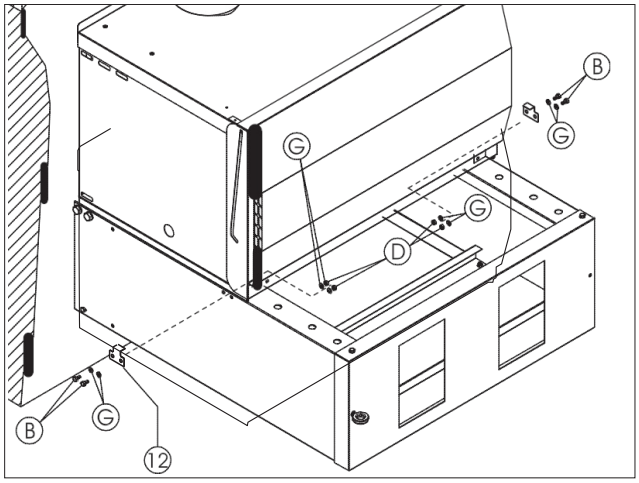


Fig.4.14b Lifting the combustion chamber (using the eyebolts).



WHEN PERFORMING ANY MAINTENANCE WORK, ENSURE THE PERSON IS SAFELY HARNESSED AND HOOKED TO A SOLID ATTACHMENT

The combustion chamber can be installed inside if the combustion air is drawn from the outside through a pipe.

Fig.4.15 Positioning the heating unit and fixing the side blocks (for the lifting see fig. 4.14a, 4.14b)

4.6 TILTED BRACKET FOR ROOF UNIT

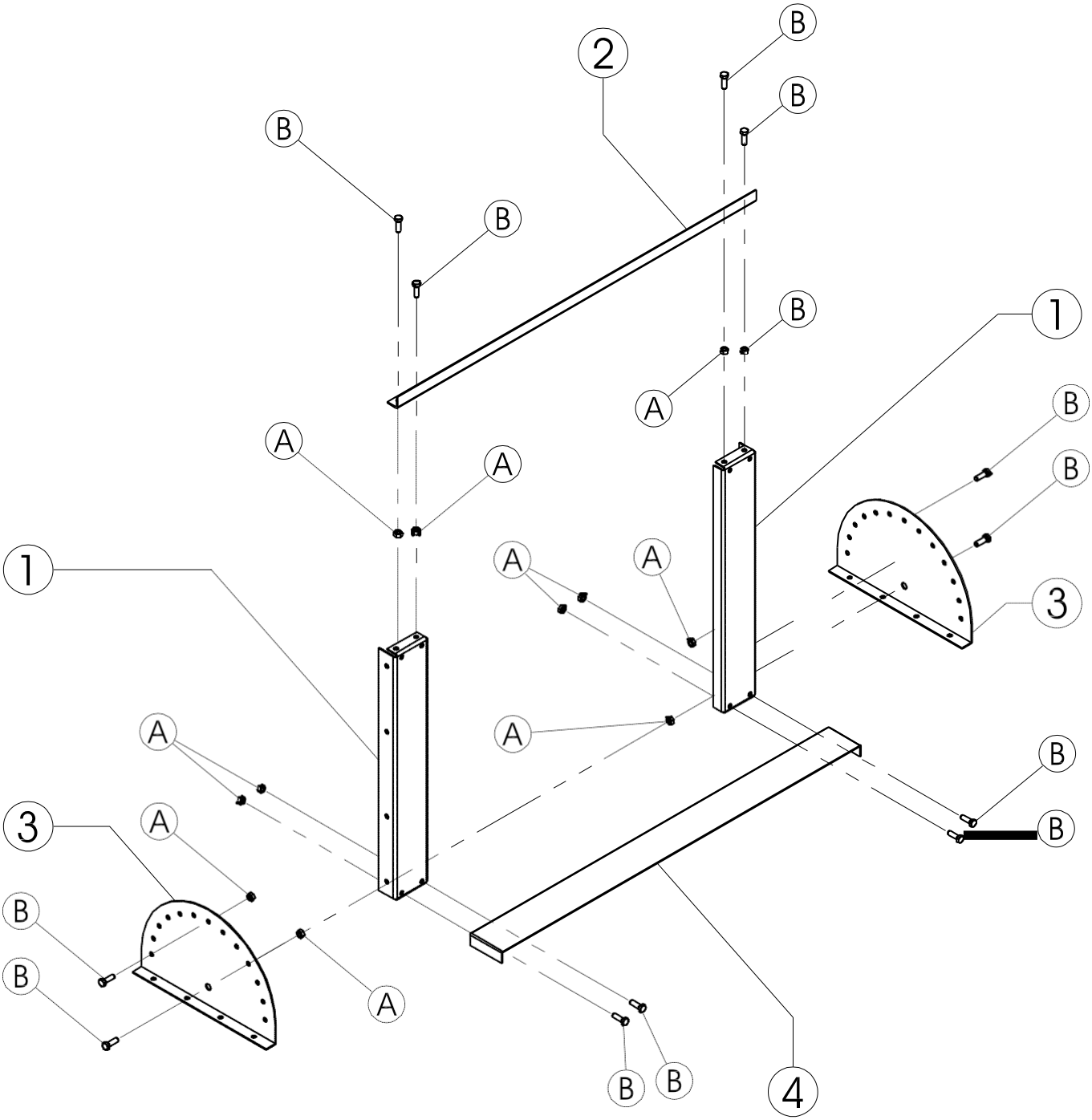


Fig. 4.16 Tilted roof bracket

POS	DESCRIPTION	QUANTITY
1	Right/left support	2
2	Angle iron	1
3	Graduated right/left part	2
4	Bottom crosspiece	1
A	M10 nut	12
B	M10 x 30 screw	12

TAB.4.4

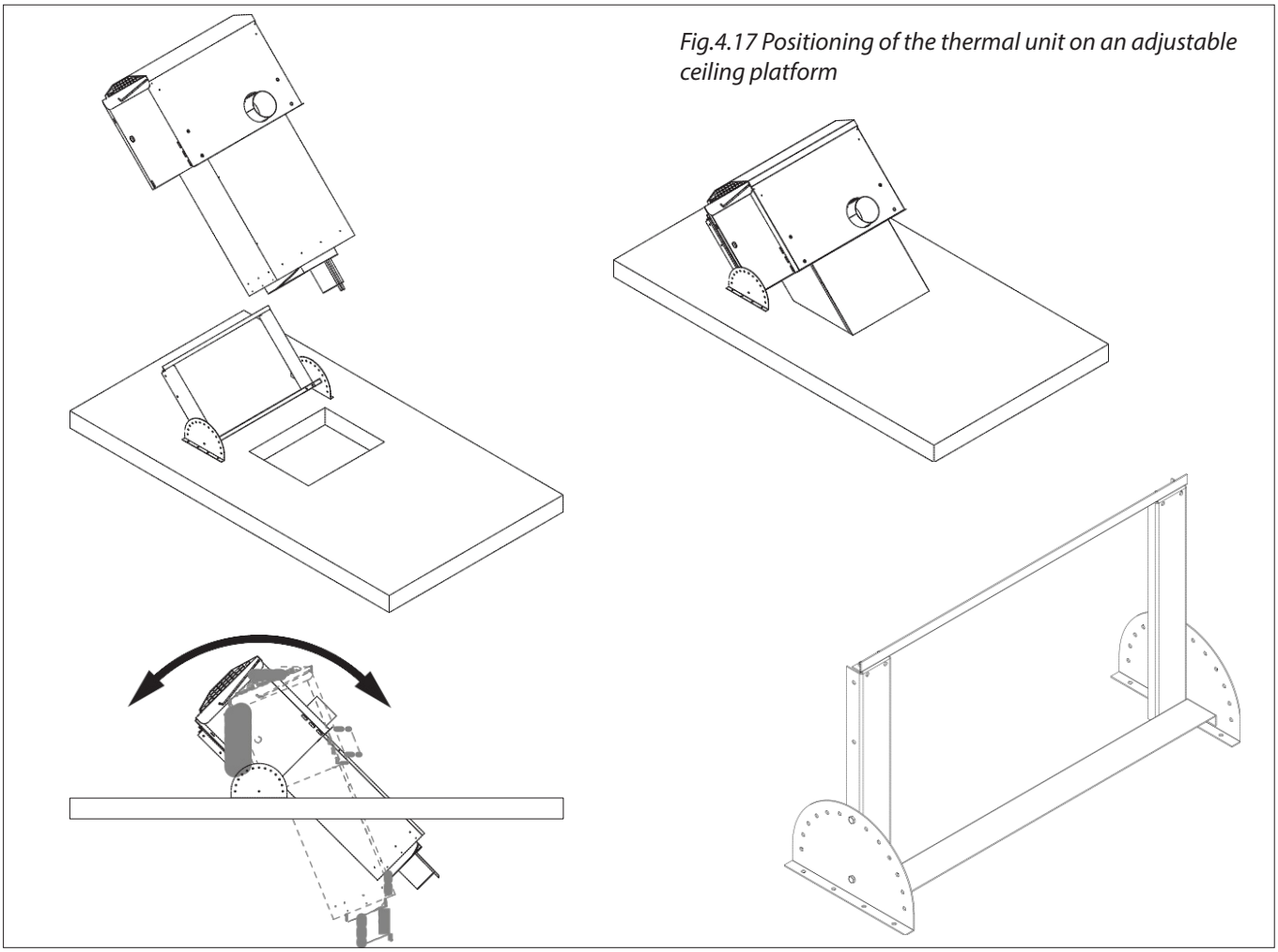
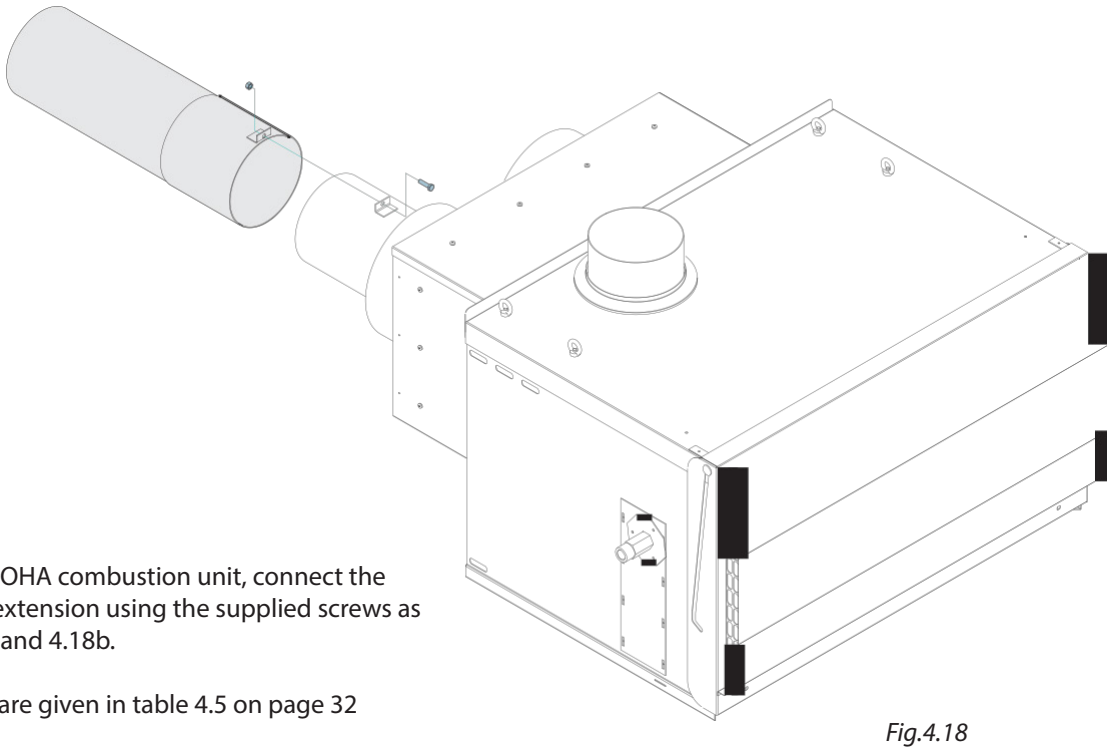


Fig.4.17 Positioning of the thermal unit on an adjustable ceiling platform

4.7 CONNECTING THE COMBUSTION CHAMBER EXTENSION



Before positioning the OHA combustion unit, connect the combustion chamber extension using the supplied screws as shown in figures 4.18a and 4.18b.

The extension lengths are given in table 4.5 on page 32

Fig.4.18

COMBUSTION UNIT	DIAMETER X EXTENDED CHAMBER LENGTH (mm)	COMBUSTION UNIT TOTAL LENGTH + EXTENDED CHAMBER (mm)
OHA 100	204 x 500	1500
OHA 200	204 x 1000	2000
OHA 400	204 x 500	2000

Tab 4.5

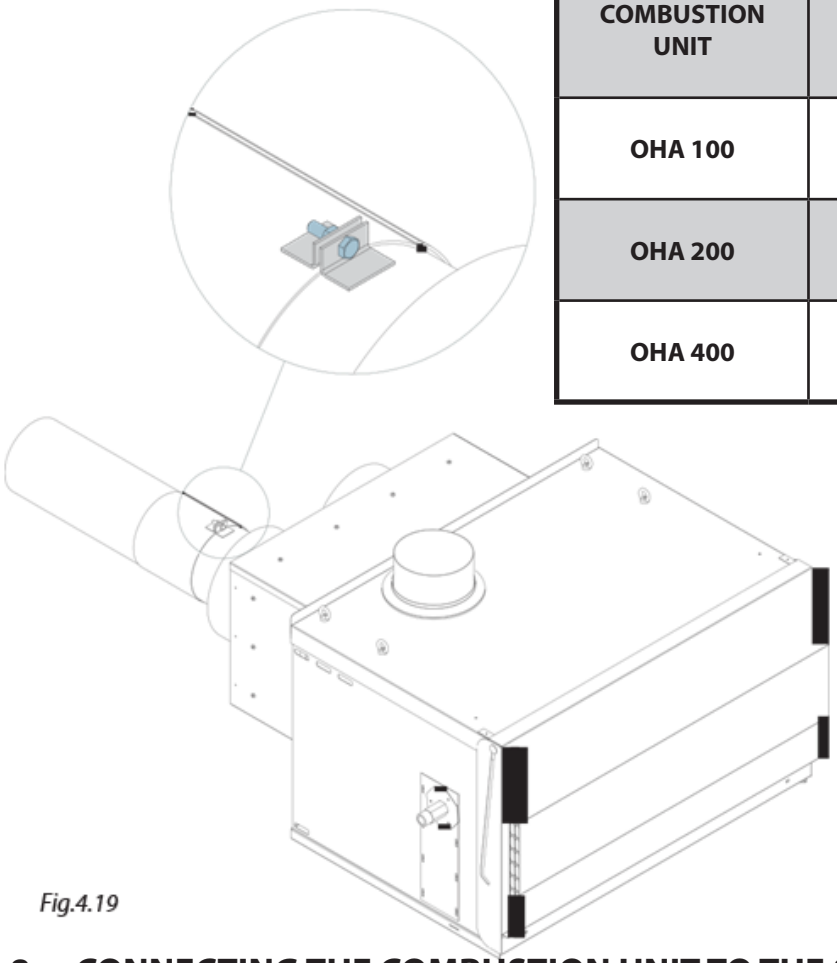


Fig.4.19

4.8 CONNECTING THE COMBUSTION UNIT TO THE STRIP

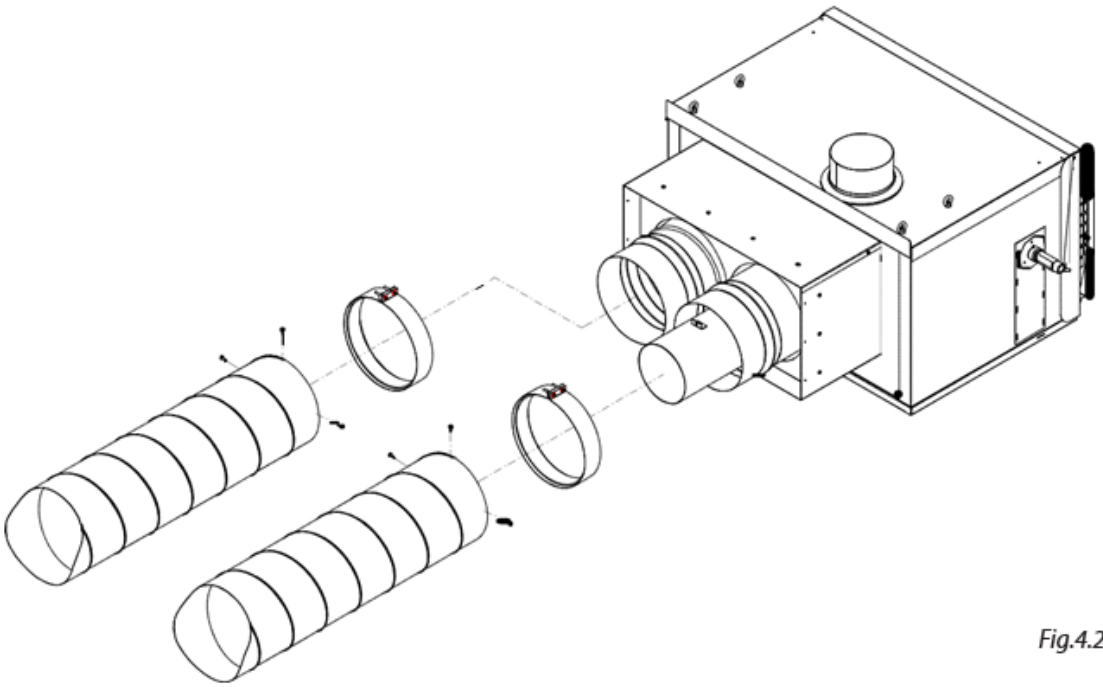


Fig.4.20

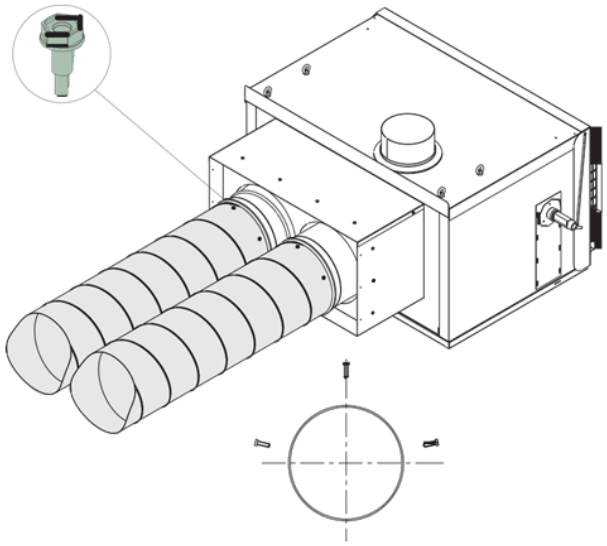
To connect the combustion unit to the radiant circuit, there are 2 nipples, as for the pipe joins (for more information consult paragraph 4.7.2).

1) The nipples are already screwed to the combustion unit (fig. 4.19).

2) Introduce the nipples to the outlet pipe, taking care that the conical part adheres well all around the pipe, fix them in place with the 3 self-tapping screws to the sides and top as shown in fig. 4.20.

3) Fit the clamp as shown in 4.21 and tighten the screw and nut; the clamp must be placed to cover the join and the fixing screws.

4) Once the clamp is firmly fixed, the unit should appear as shown in fig. 4.22, with the fixing screws pointing upwards,



Details of the screw layout *Fig.4.21*

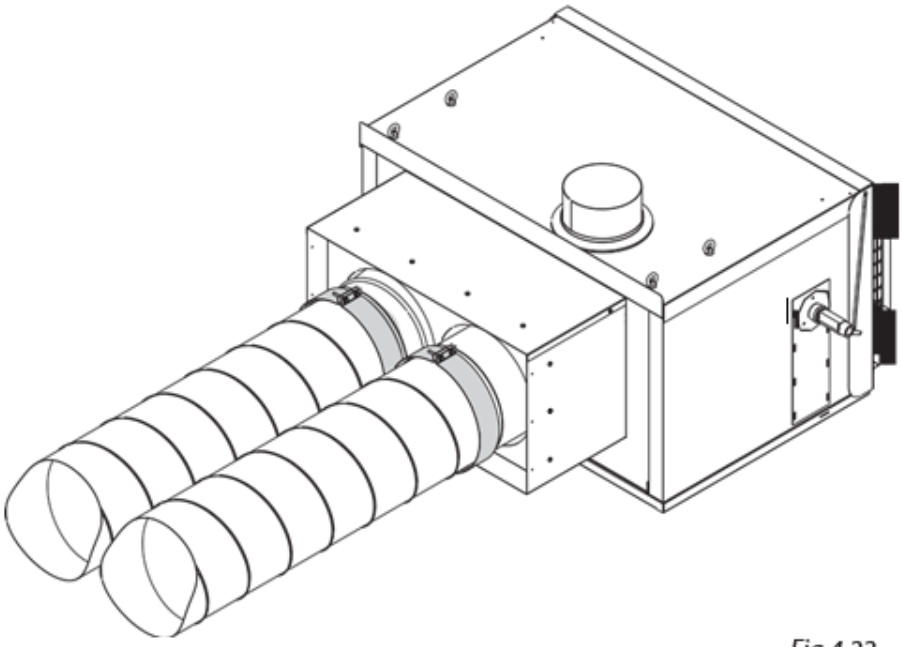


Fig.4.22

4.9 ASSEMBLING THE STRIPS

The strips are subject to movement due to expansion, therefore the chains must be long enough to allow for this.

1) Fit the bracket guide in the support bracket housing.

2) Fix the turnbuckle & speedlink to the support bracket using nut & bolt as shown in the enclosed figure, (refer to detailed figure 4.23).

3) For the chain capacity, refer to the band weights that are given in the table 3.7 on page 15 and the notes in fig. 4.23.

4) To hook to the building structure, the fixing must be chosen on the basis of the roof and the minimum capacity (for the dimensions, refer to the table 3.7 on page 15).

5) Place the radiant pipes on the bracket.

6) Fit the side layer between the pipes and the bracket, repeat on the other side.

7) Fix the sides in place with their supports (see fig. 4.26).

Chain characteristics:

- dimensions 3.9x21.0x7.3 mm
- a minimum working load of 100 kg must be guaranteed (with distance between the brackets at 3m)

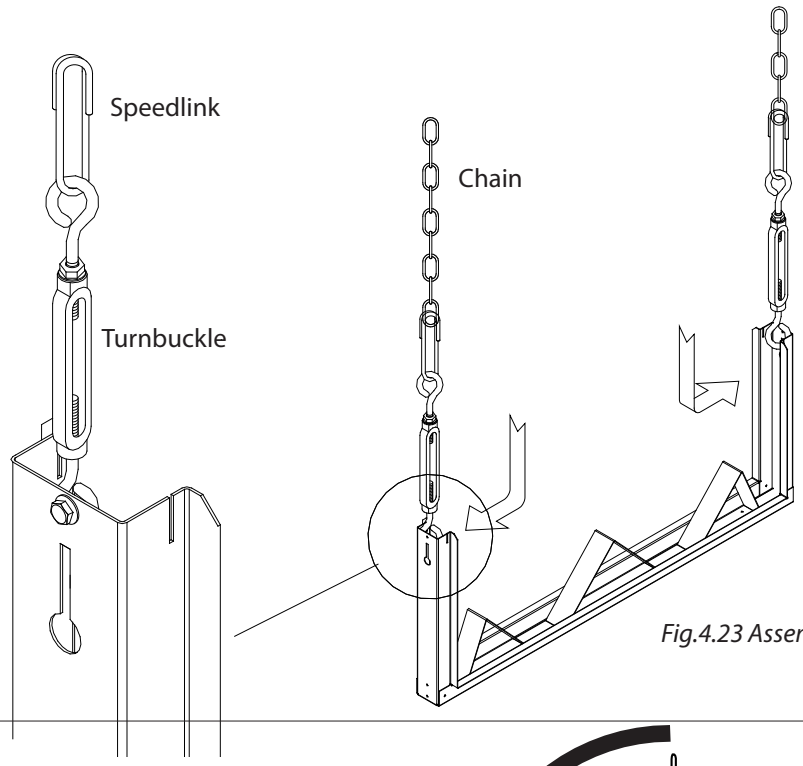


Fig.4.23 Assembling the belt support brackets

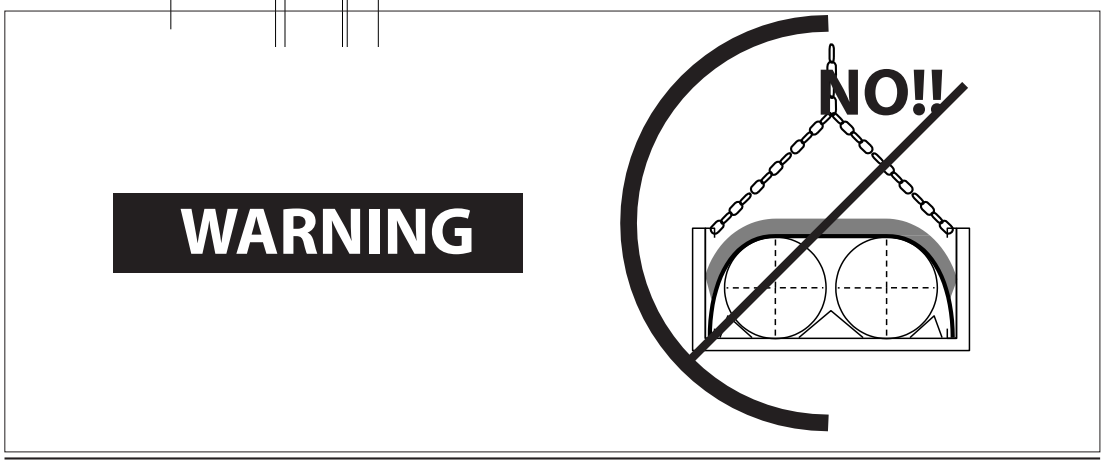


Fig.4.24 Incorrect assembly

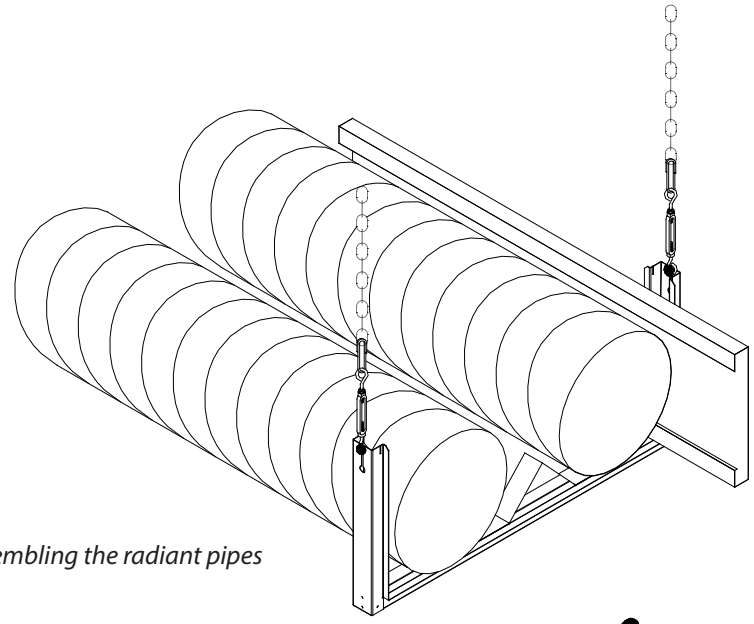


Fig.4.25 Assembling the radiant pipes

To fit the sides to the brackets, fit the "U" shaped support by clicking it into the slots (A), so that the slits in bracket (B) line up as shown in fig. 4.26.

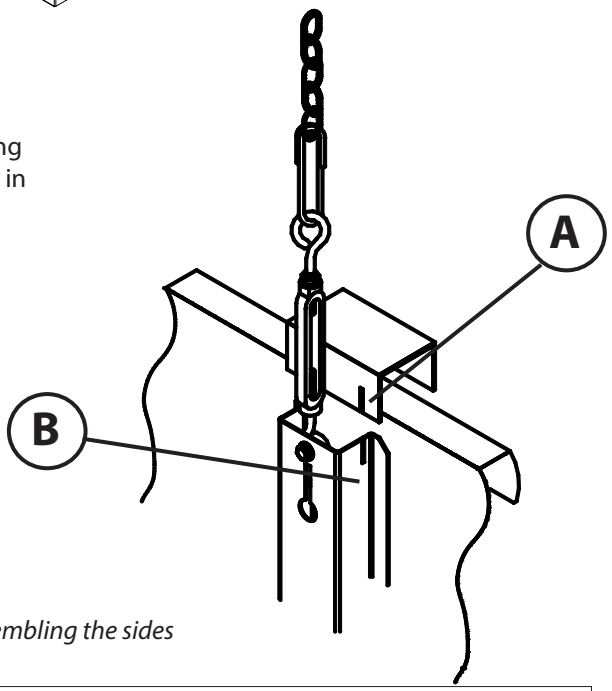


Fig.4.26 Assembling the sides

Attention:
in case the distance between the holders is more than 3 meters or near the side junctions (see picture 26a), it is necessary to use a further holder (part number 05CNDI8010) which keeps the sides of the strip straight (fig 4.27).

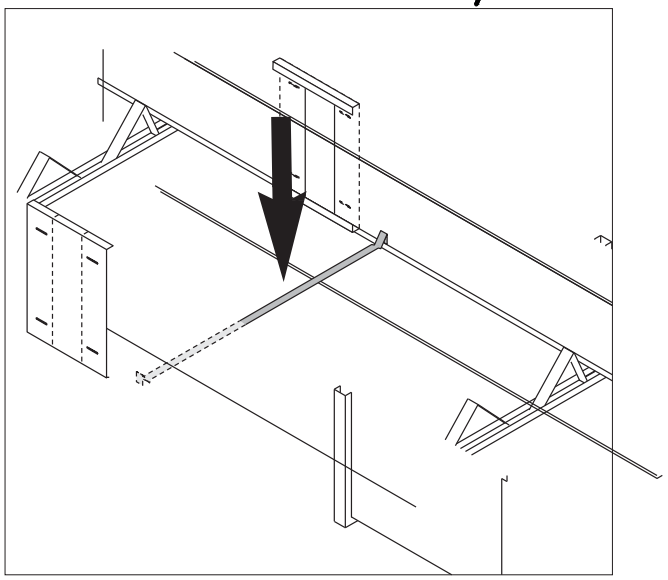


Fig.4.27

4.9.1 Side connections

A) Join the two sides with the connections.

B) Leave at least 80 mm between the heads of the two sides, to allow for expansion.

C) Fix in place with self-drilling screws.

ATTENTION: the two screws must be left slightly loose so that the sides can expand inwards.

ATTENTION: if the distance (A) fig.4.28 between the connections and the sides is more or equal to 1 meter, it could cause cambering.

- Fix the connections with camber using a further 4 self-drilling screws as shown in figure 4.28.
- The space between the heads of the side connections without camber is sufficient to allow the sides to expand inwards (fig. 4.29 point B).

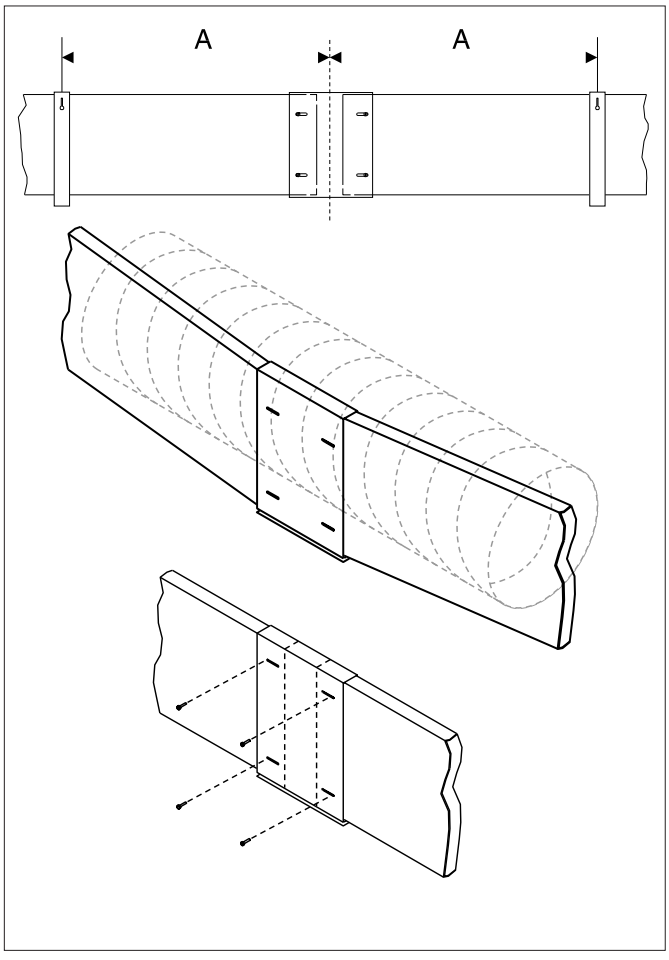
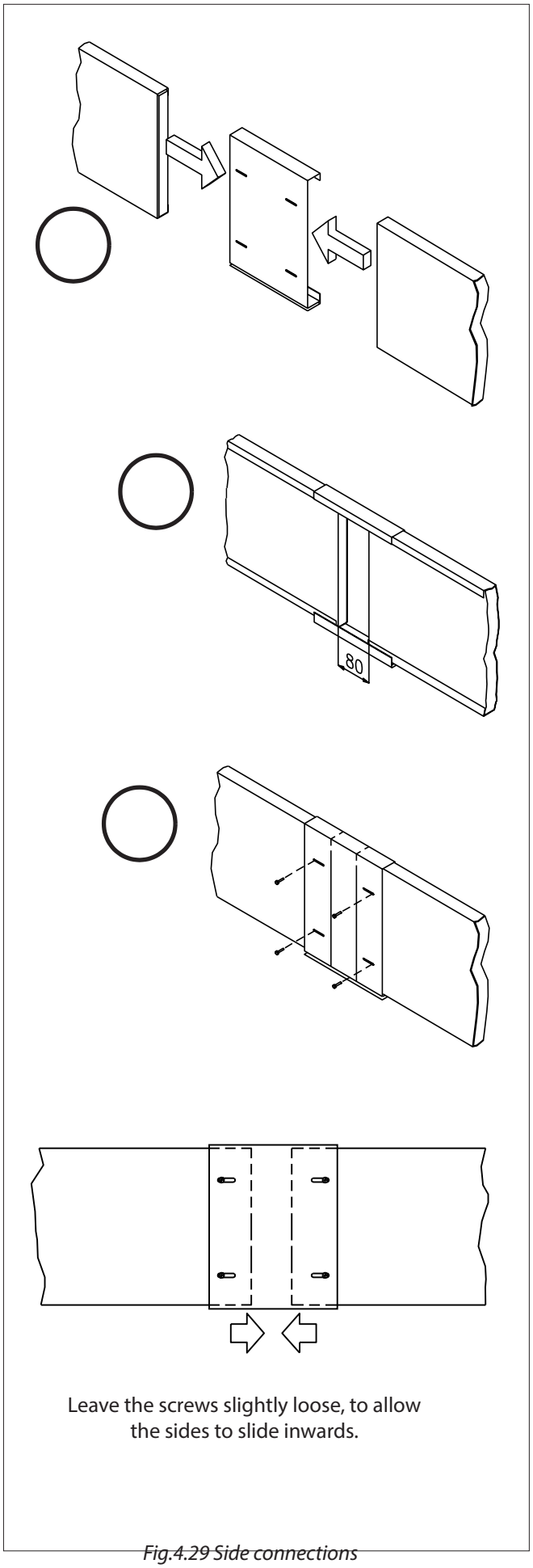


Fig.4.28 Side connections



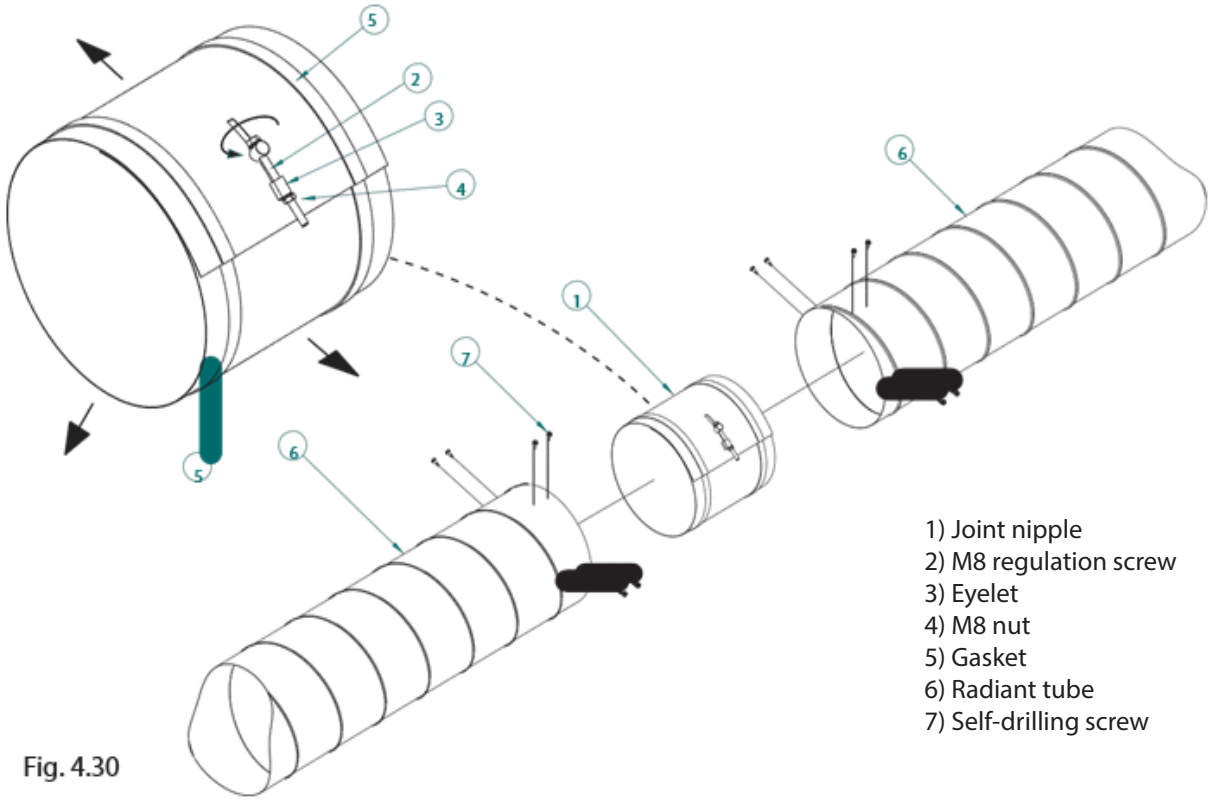
Leave the screws slightly loose, to allow the sides to slide inwards.

Fig.4.29 Side connections

4.9.2 Connections between pipes

IMPORTANT !!

The connections must be airtight, as the entire system is under vacuum.
This ensures the system will work correctly and safely.



1) Joint nipple
2) M8 regulation screw
3) Eyelet
4) M8 nut
5) Gasket
6) Radiant tube
7) Self-drilling screw

Fig. 4.30

The joint nipples are carefully developed by the manufacturer to assure a perfect seal, when subject to high temperatures. They are fixed to the tubes by self-tapping screws.

The nipples are sealed to the emitter tube by gaskets, which are on the sides of the nipples.
To see how to assemble the pieces, please see pictures 4.31 -4.35:

1) Insert the nipple in the first emitter tube for a coupling length of about 120 mm, as shown in figure 4.31

2) Insert on the exterior of the nipple the second emitter tube with a coupling length of about 120 mm, as shown in figure 4.32

3) Turn the hexagonal screw clockwise , allowing the nipple to increase its diameter. It will expand inside the inner surface of the two emitter tubes (see details in figure 4.30)

ATTENTION!
If there are not two gaskets, use high temperature silicone on the circumference of the joint about 40 mm from the two edges.

4) Fix the nipple using 12 self-drilling screws, 4 for each side and 4 on the upper part. The correct installation is shown in figures 4.33 and 4.34.

ATTENTION! Make sure that the joint nipple has the regulation screw in the position indicated in figure 4.35. This makes installation and regulation easier, especially when the two tubes are side by side.

Fig. 4.31

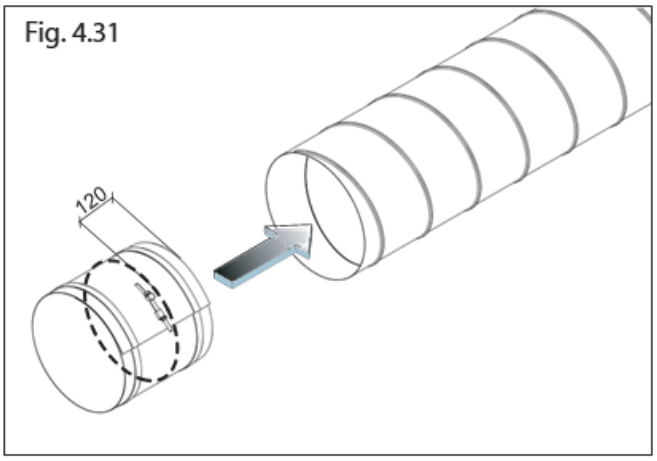


Fig. 4.32

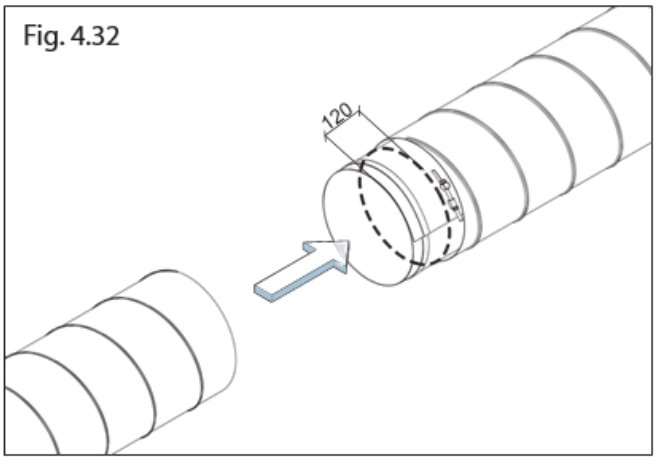
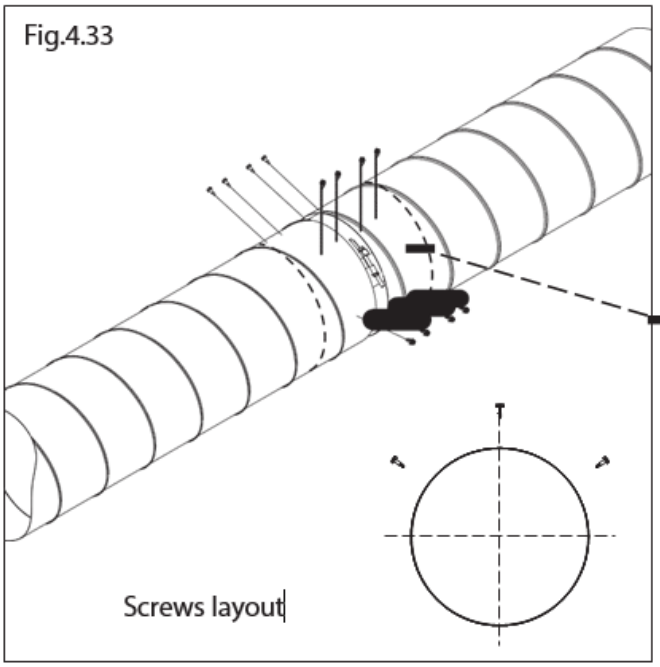


Fig.4.33



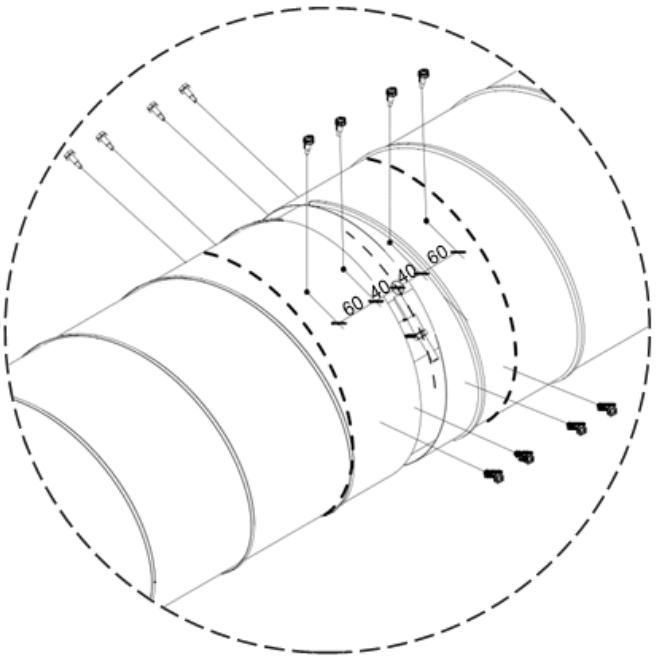
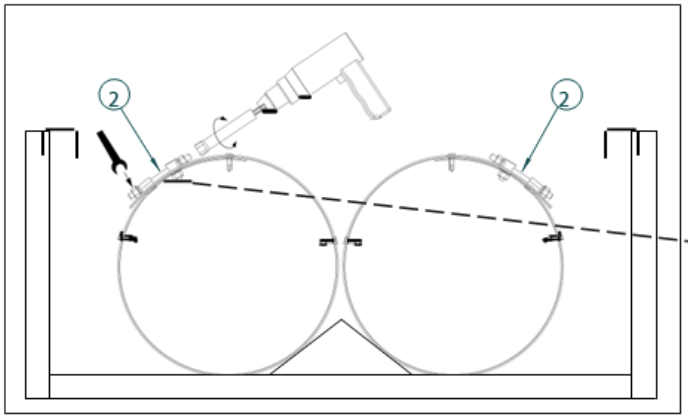
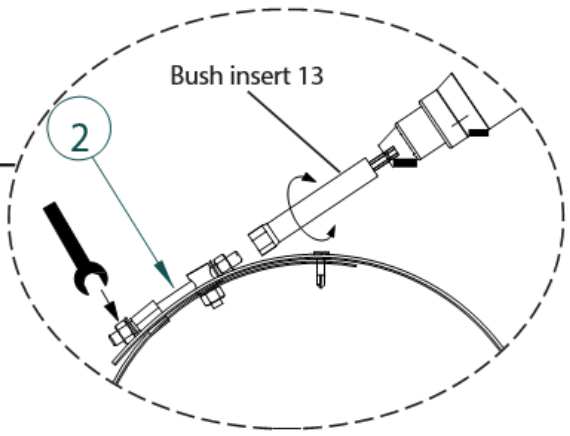


Fig. 4.34

Fig. 4.35





4.9.3 How to assemble the curves

The curves can be assembled following the same steps with which the joints between the tubes are assembled. They are developed by the manufacturer and assure a perfect seal, and are resistant to high temperatures. They are fixed to the tubes by self-tapping screws so that the system becomes a single block.
The nipples are sealed to the emitter curve by gaskets along their circumference, see figures 4.36 – 4.40:

1) Insert the nipple in the first emitter tube for a coupling length of about 120 mm, as shown in figure 4.36

2) Insert on the exterior of the nipple the curve with a coupling length of about 120 mm, as shown in figure 4.36

3) Turn the hexagonal screw in a clockwise sense, allowing to the nipple to increase its diameter. It will expand into the inner surface of the two emitter tubes (see details in figure 4.30)

ATTENTION!
In case there are not two gaskets, use some high temperature silicone on the circumference of the joint at about 40 mm from the two edges.

4) Fix the nipple using 12 self-drilling screws, 4 for each side and 4 on the upper part. This is shown in figures 4.38 and 4.39.

ATTENTION!
Make sure that the joint nipple has the regulation screw in the same position indicated in figure 4.40. In this way it is possible to make installation and regulation easier, especially when the two tubes are side by side.

Fig 4.36

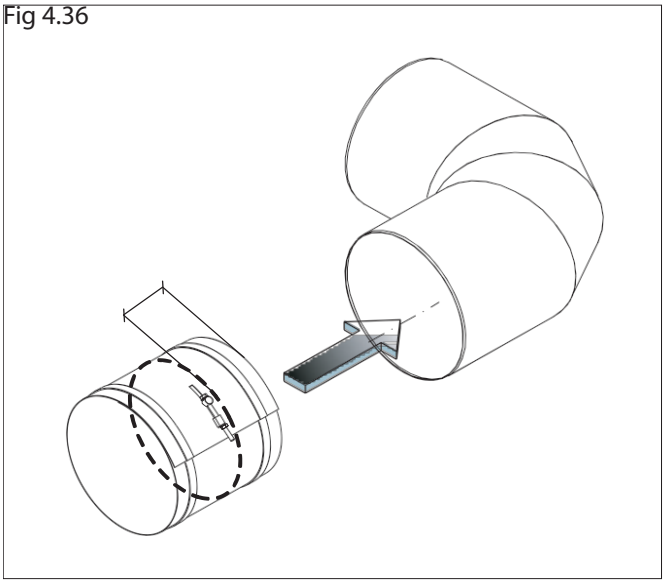


Fig 4.37

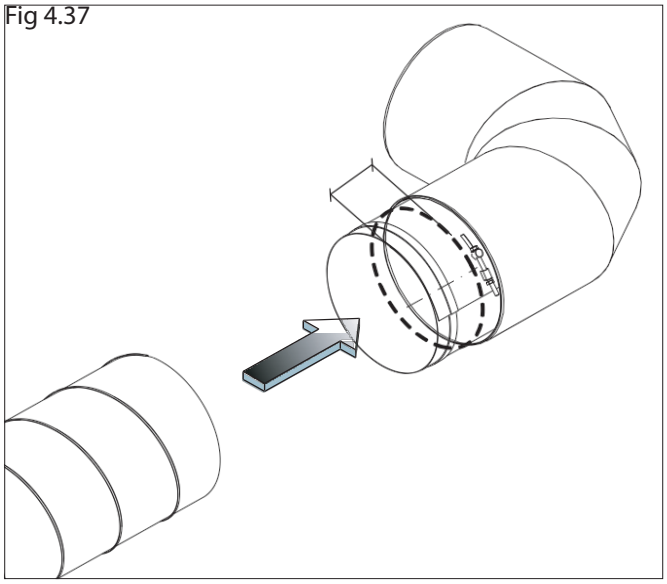
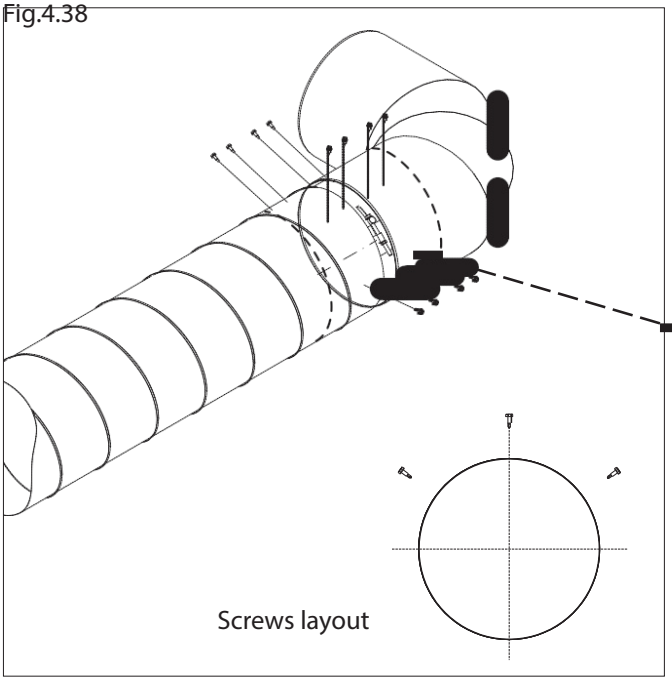


Fig.4.38



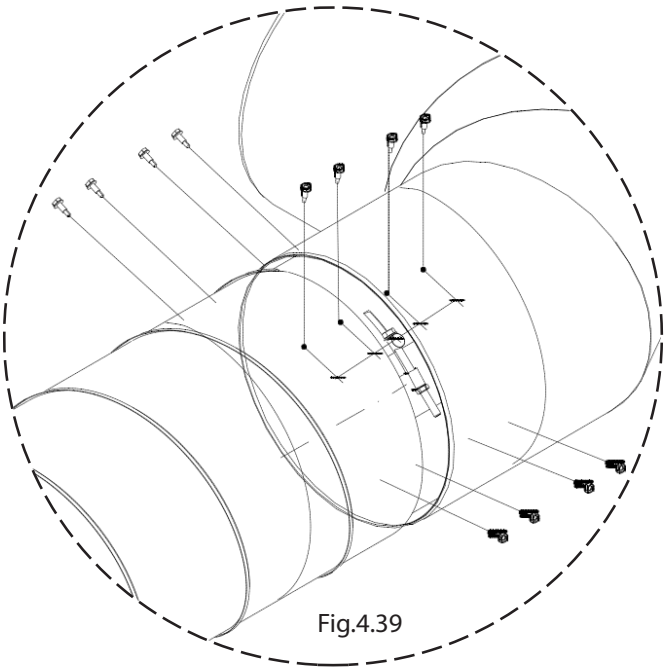
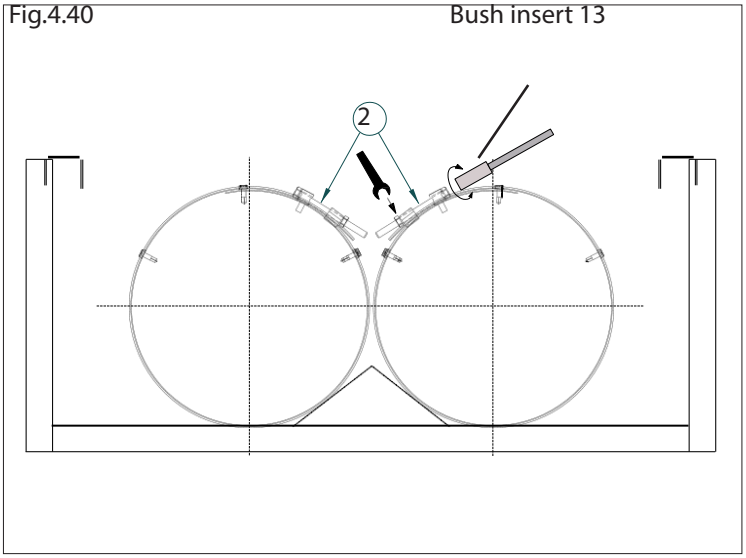


Fig.4.39

Fig.4.40 Bush insert 13



For OHA 300kW and 400kW units, the first bend must be positioned at least 3 meters from the burner.

4.9.4 Mounting the expansion joints

1) Fit the nipple (1) in the outlet pipe (2) taking care that the conical part adheres well all around the pipe.

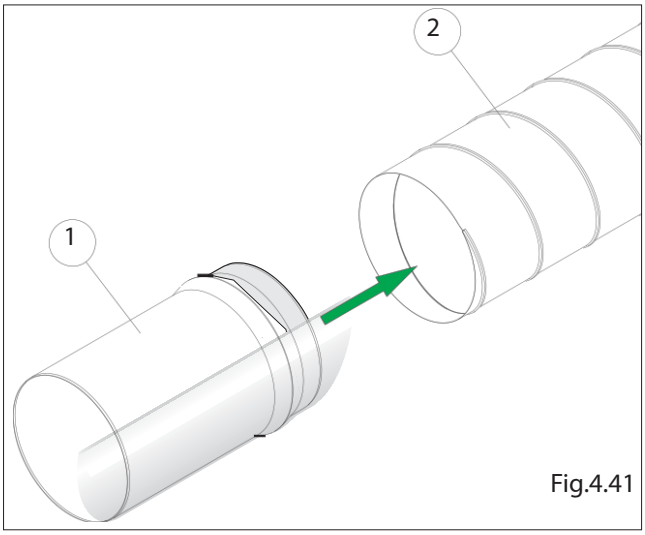


Fig.4.41

2) Fix it with the self-tapping screws (3) to the top and sides as shown in fig. 4.42.

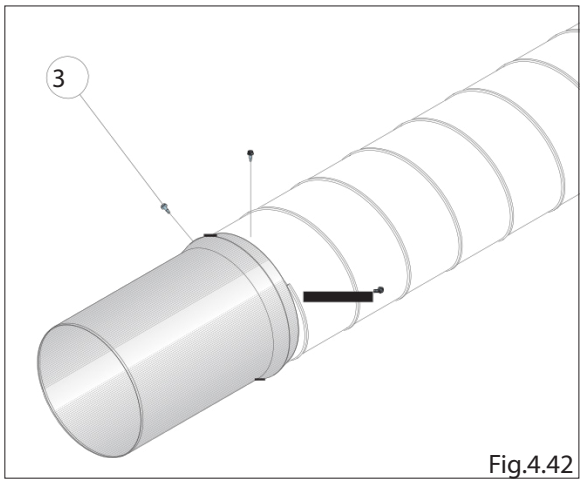
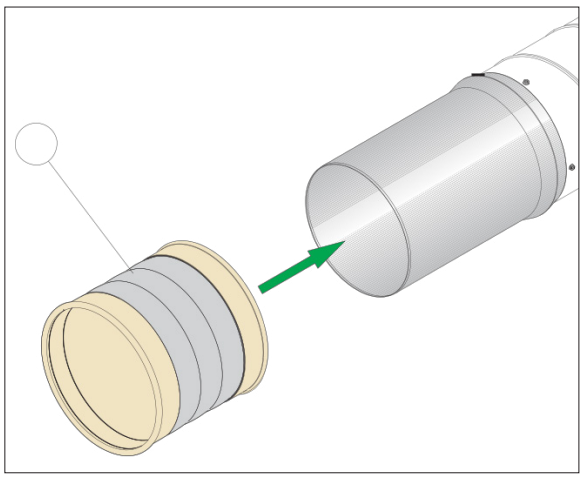


Fig.4.42

3) Fit the canvas extension (4)



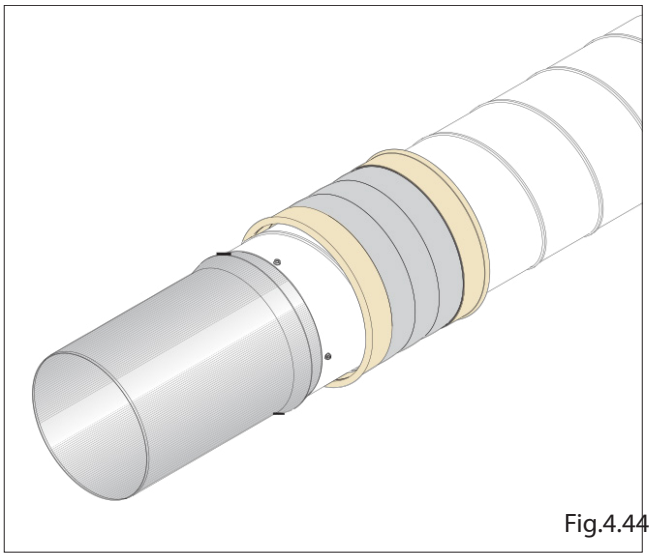


Fig.4.44

4) Fit the nipple (4) in the outlet pipe (5) leaving 14 cm between the pipes, as during expansion they must be free to slide.

5) Place the fiberglass expansion to cover both the tubes.

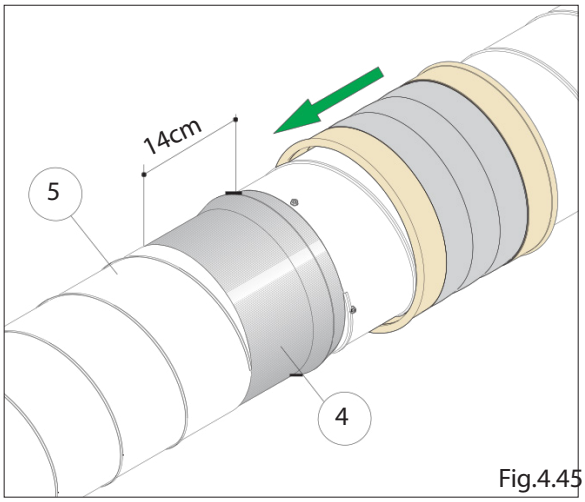


Fig.4.45

* IMPORTANT: leave 14cm between the 4 pipes, as during expansion they must be free to slide.

IMPORTANT!

The expansion joints have to be positioned in the tubes longer than 36 linear meters, 1 for M model and 2 for U model every 18 meters.

6) Fix the joint to both the tubes (2 and 5) with the clamps (8);
7) Fix a limit stop chain (7) between the clamps.

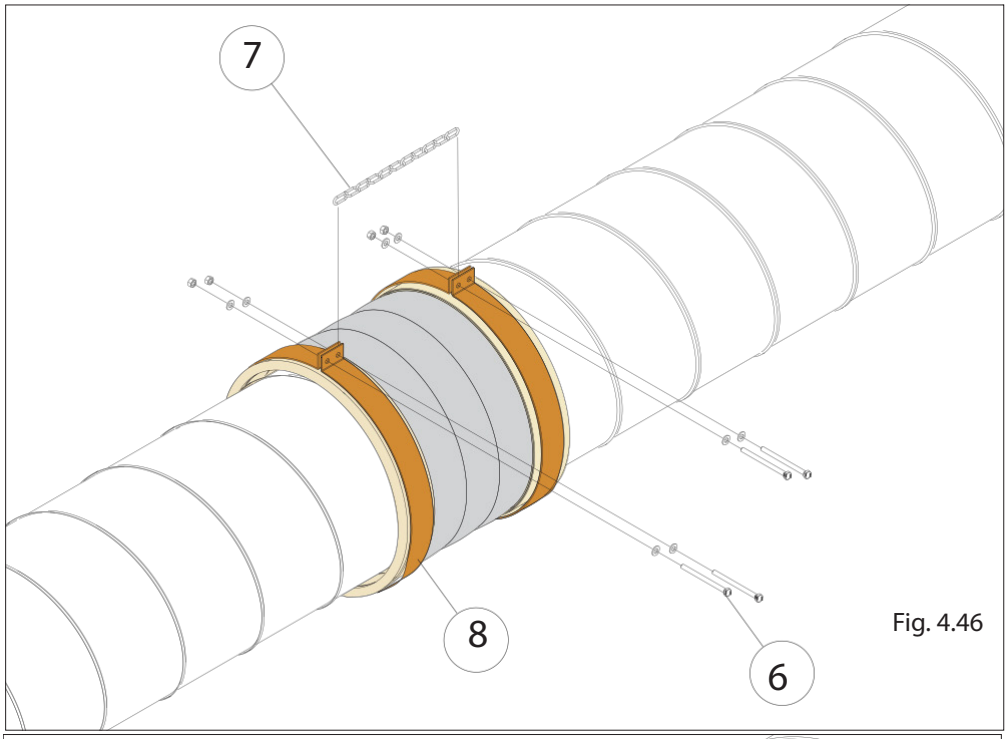


Fig. 4.46

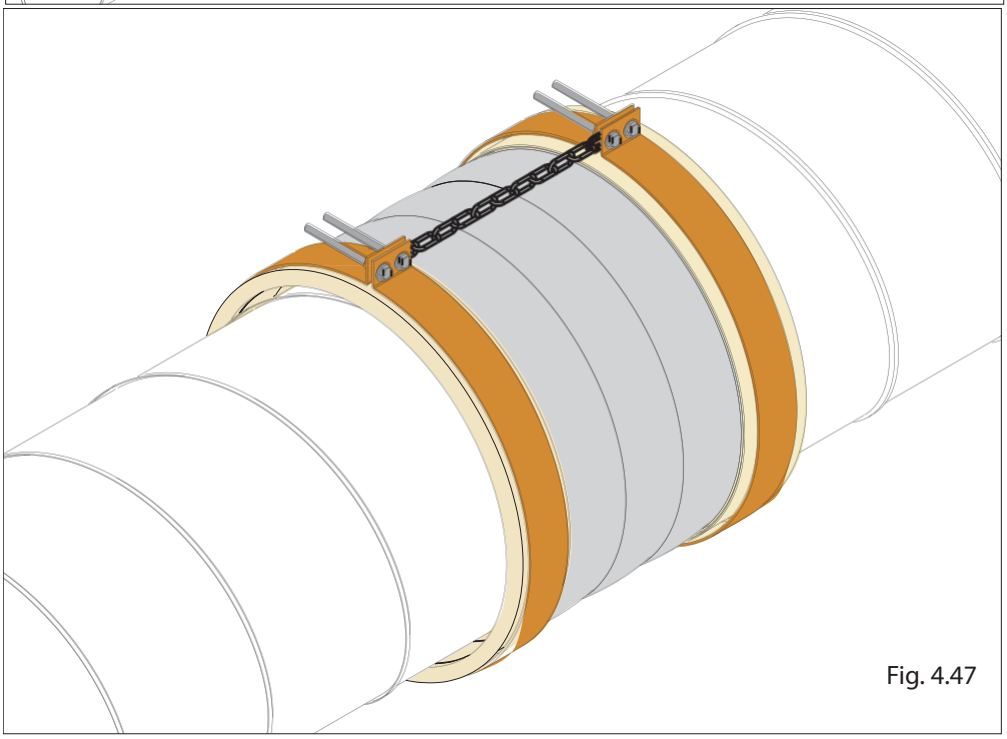


Fig. 4.47

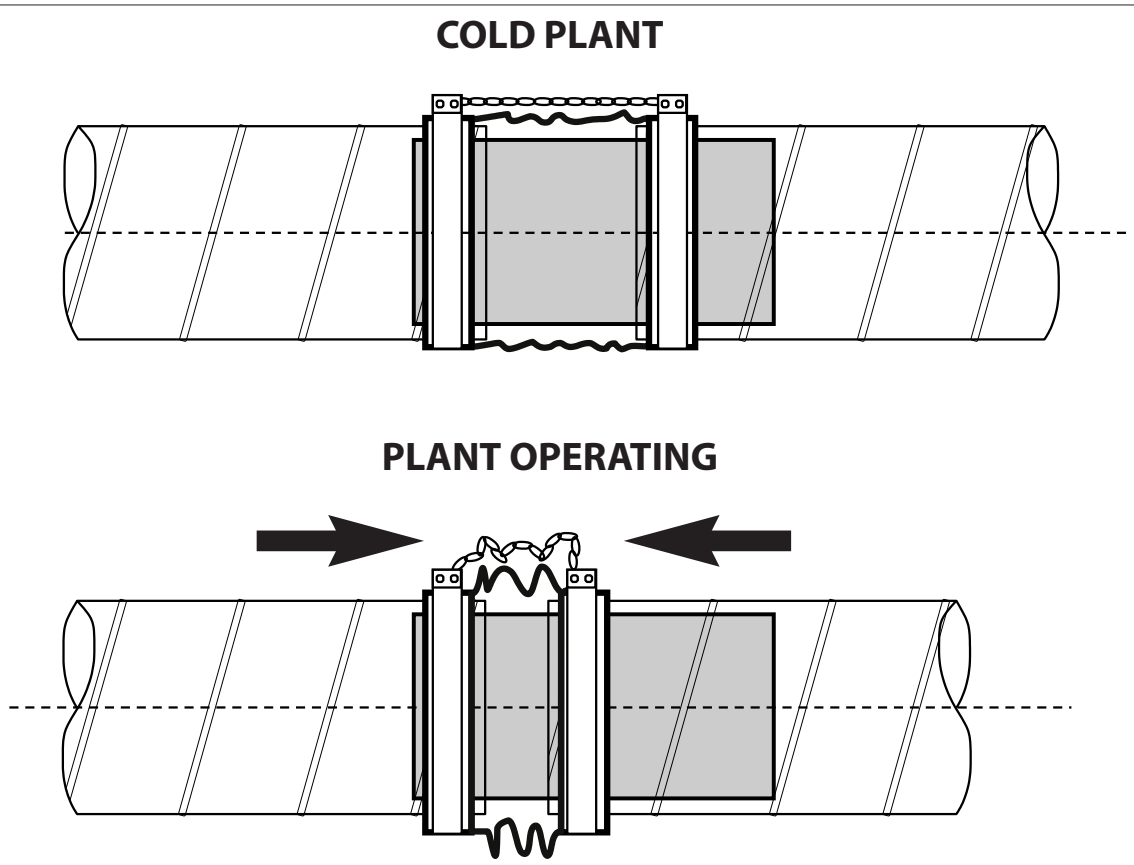


Fig.4.48 Expansion

4.9.5 90° Side connections

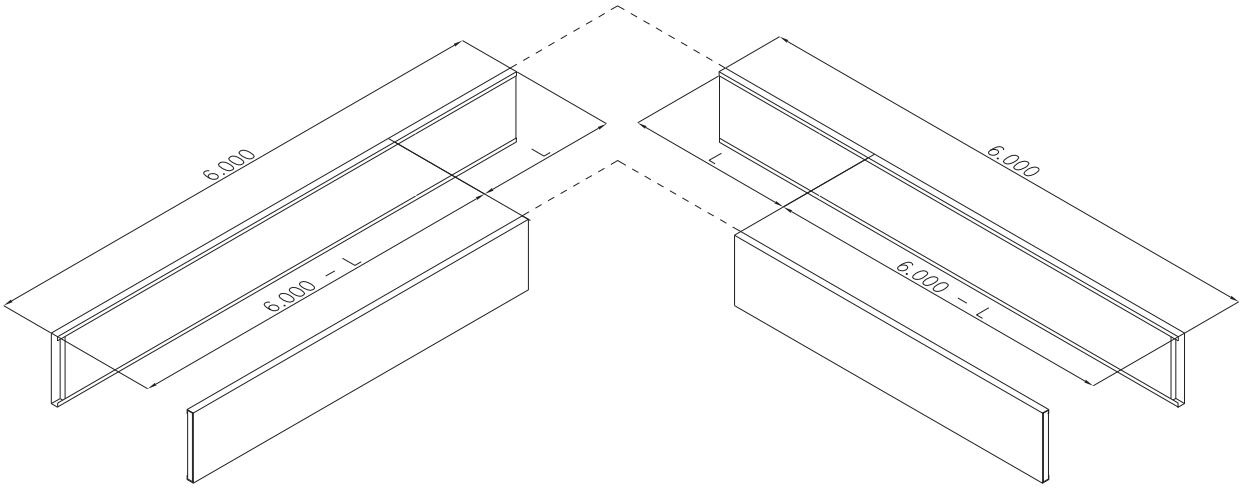


Fig.4.49 90° side connections

To form the 90° bend, shorten the internal side at level L (for the values refer to the table below) as shown in fig. 31.

Fit the 90° bend in the sides and fix in place with self- drilling screws.
The screws must be loose on the outside of the slits, so that the sides can expand inwards.

RADIANT STRIP MODEL	LEVEL L (mm)
Mod U (2 pipes) Ø 400mm	1020 + slip screw holes
Mod U (2 pipes) Ø 300mm	850 + slip screw holes
Mod M (1 pipe) Ø 300mm	512 + slip screw holes
Mod U (2 pipes) Ø 200mm	645 + slip screw holes

Tab.4.6

INTERNAL CONNECTION

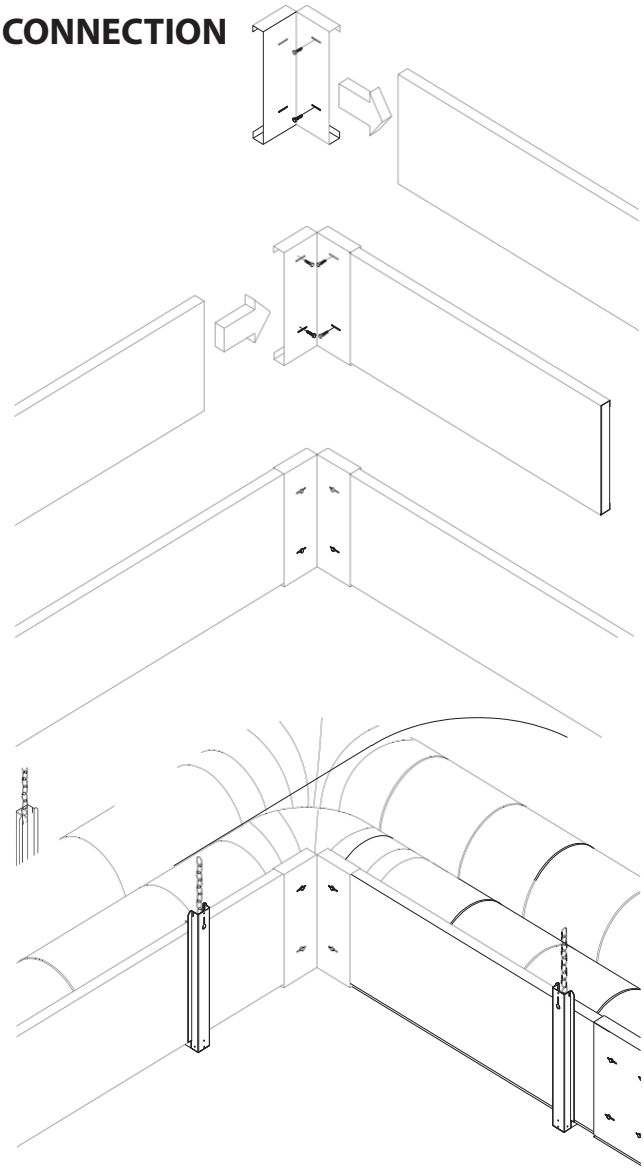


Fig.4.50 Connections for the internal sides

For the external sides, repeat the same operations as above: fit the 90° joint in the sides and fix it in place with the self-tapping screws.

The fixing screws must be loosely tightened outside the slots, to allow the sides to expand inwards.

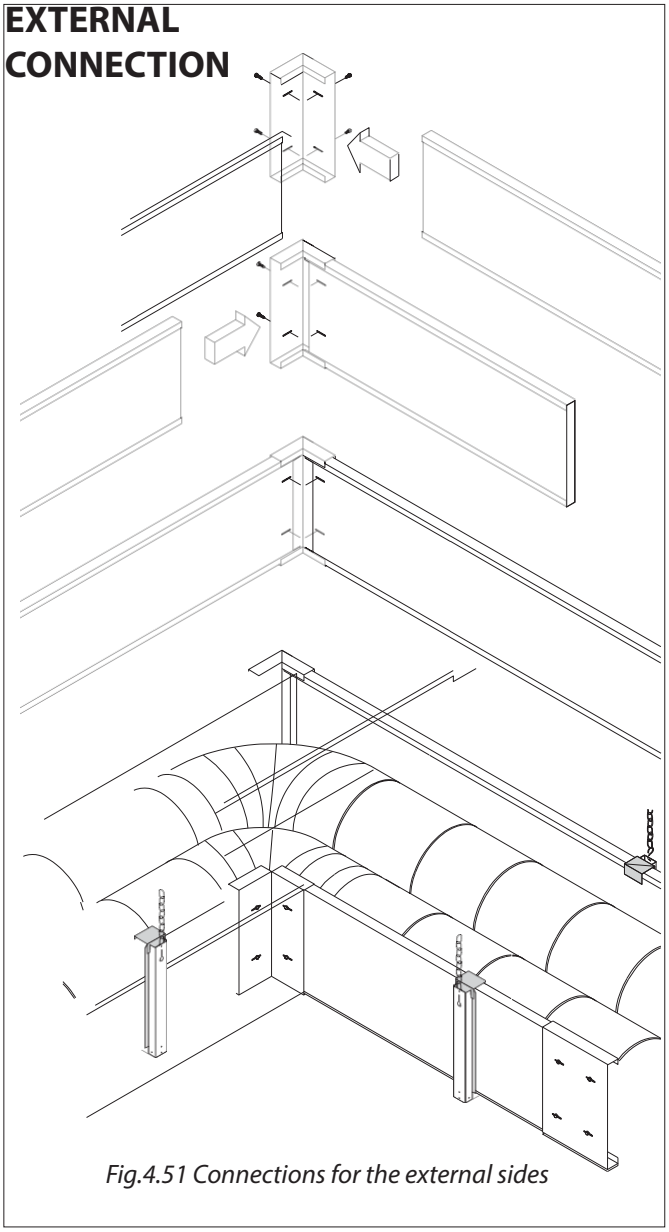


Fig.4.51 Connections for the external sides

4.9.6 Assembling the end closed cover

Fit the blind cover along the profile of the side panels and fix with self-drilling screws, leave 30 cm betwen the bend and the side to allow the pipes to expand (see fig. 4.52b).

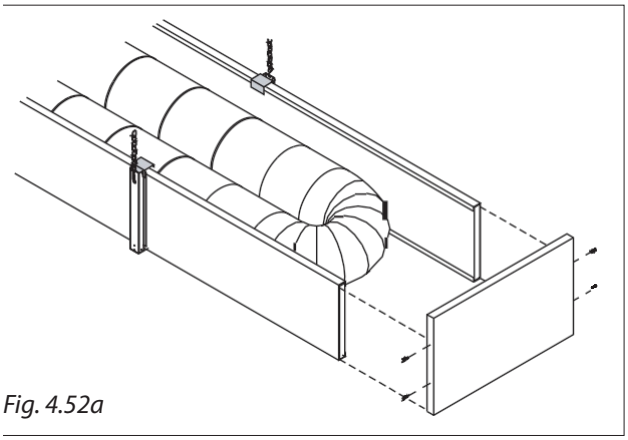


Fig. 4.52a

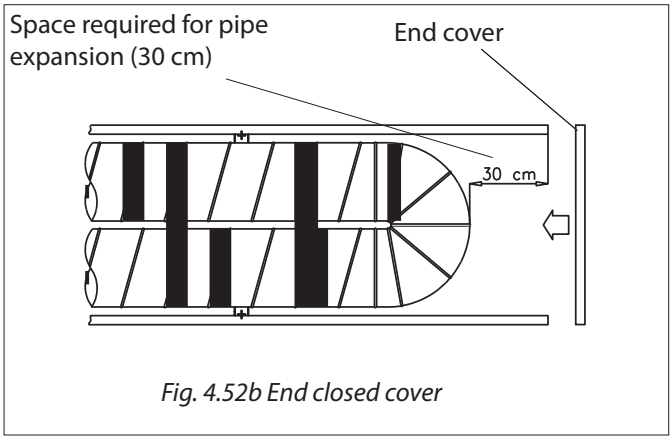


Fig. 4.52b End closed cover

4.9.7 Assembling the "T" branch

1) Fit the closed radius 90° bends as shown in fig.4.53
2) Block the bends as shown in fig. 4.9.3
3) Fit the sides which were previously cut (leave a space as shown in fig. 4.55), so that the symmetry between the sides connections is correct (see fig. 4.55).

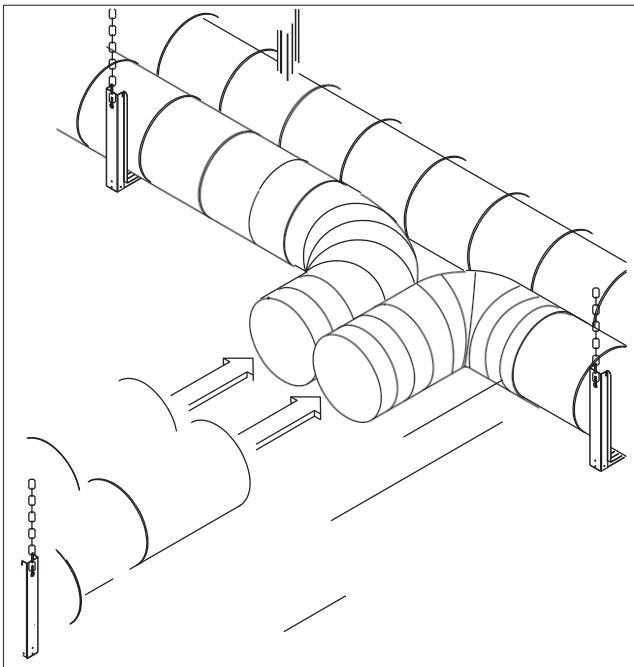


Fig. 4.53 Assembling the bends for a "T" branch.

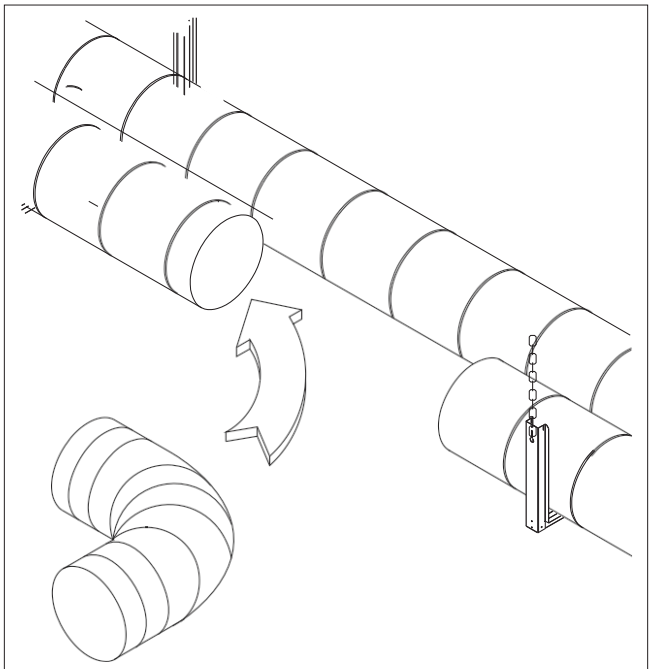


Fig. 4.54 Assembling the bends for a "T" branch.

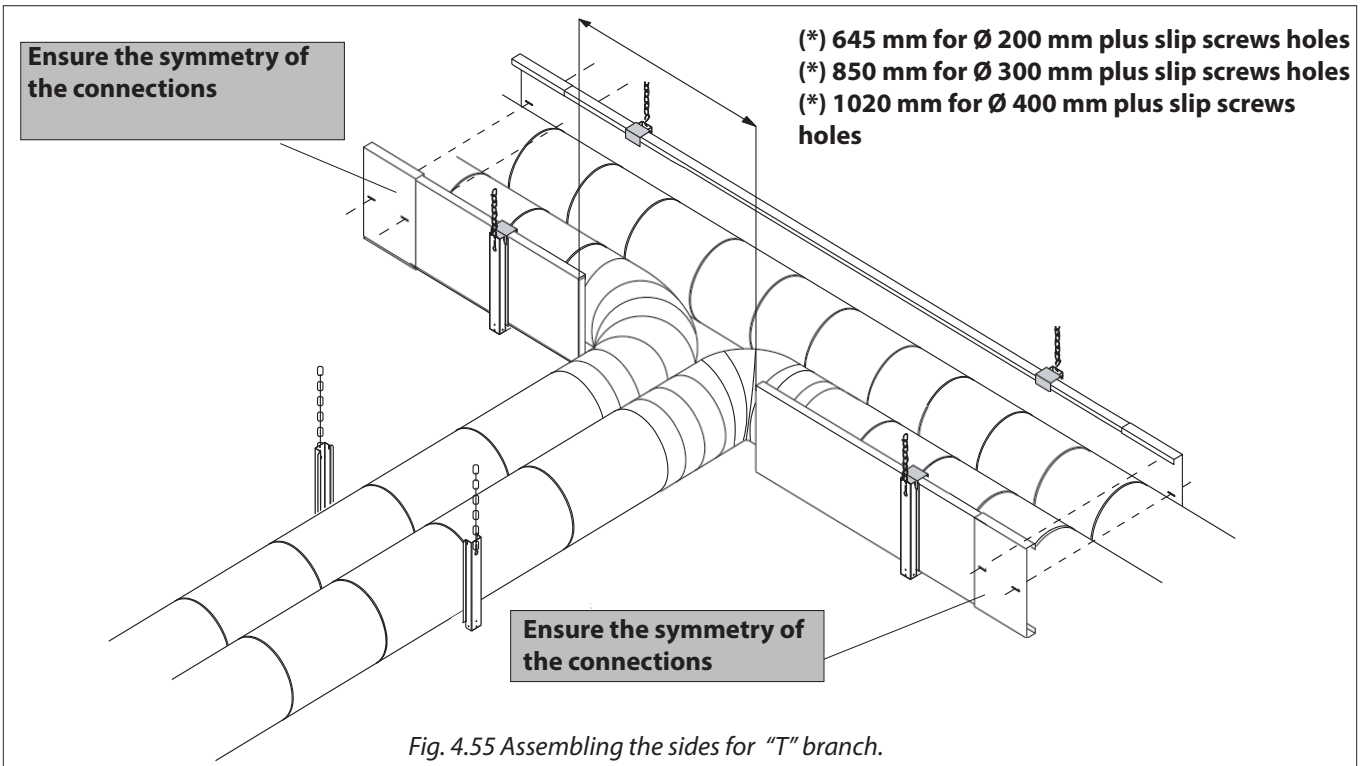
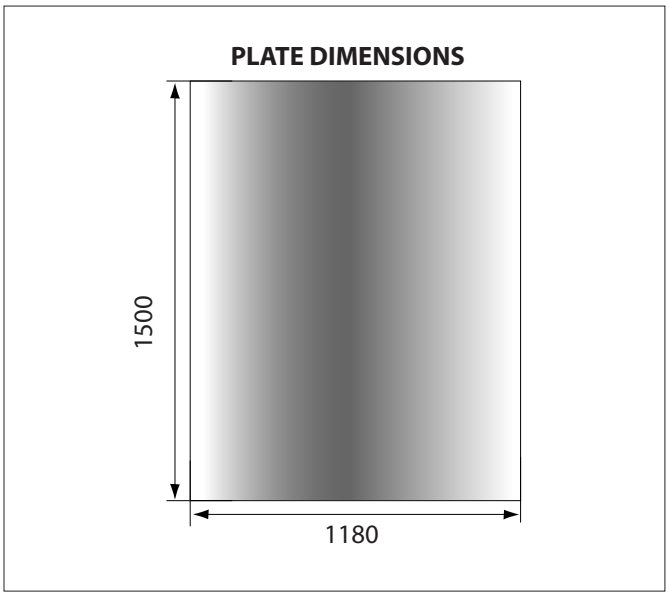


Fig. 4.55 Assembling the sides for "T" branch.

4.9.8 Assembling the top insulation

A Join the plates together in groups of 4 using a screw, one above the other of at least 4-5 cm.
Every 4 units the plates must be one above the other for 10-15 cm near the junction. They have not to be fixed one to each other.

B Place the fiberglass insulation: the black part of this fiberglass isolation have to be on the top see picture (B)



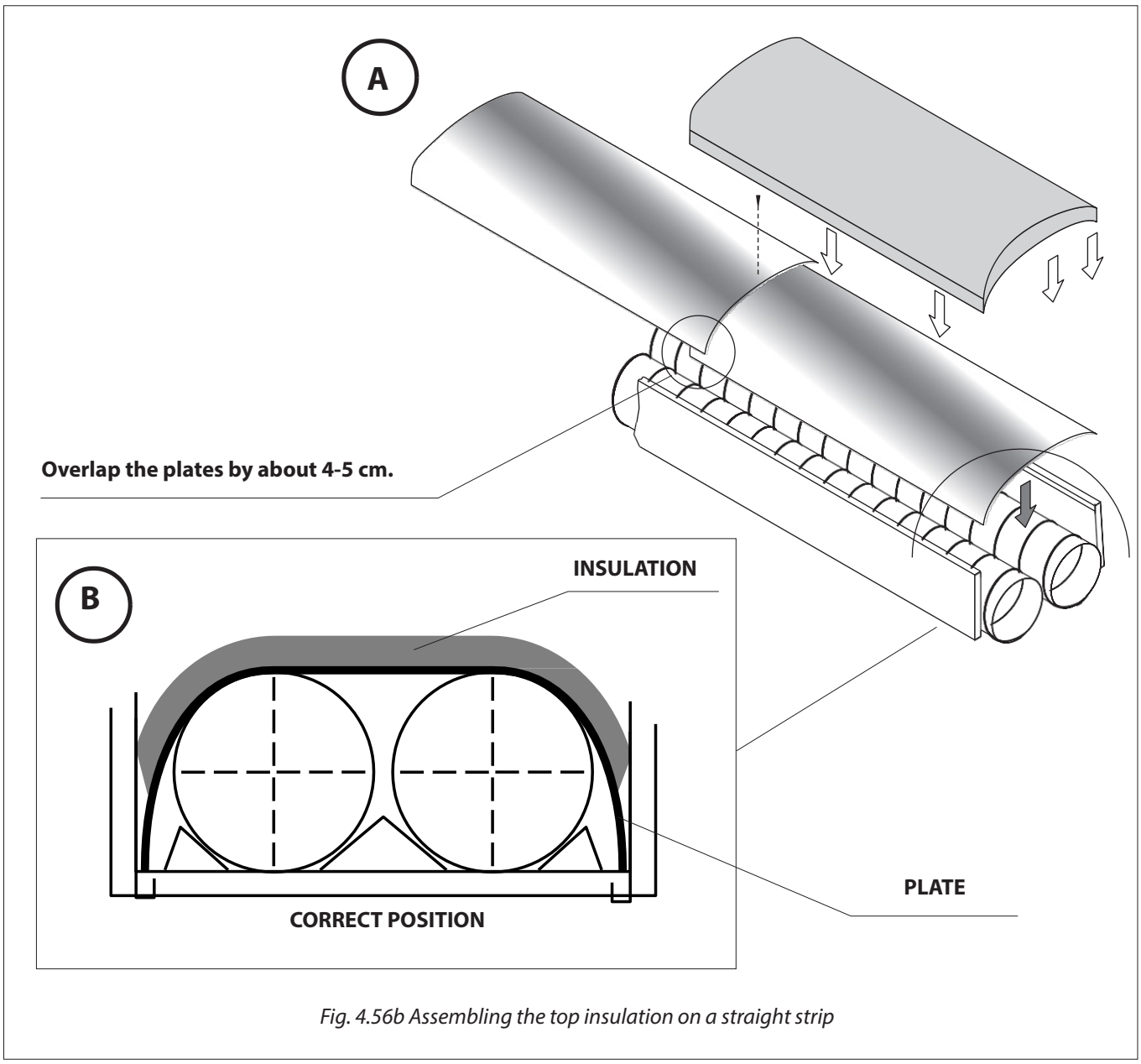
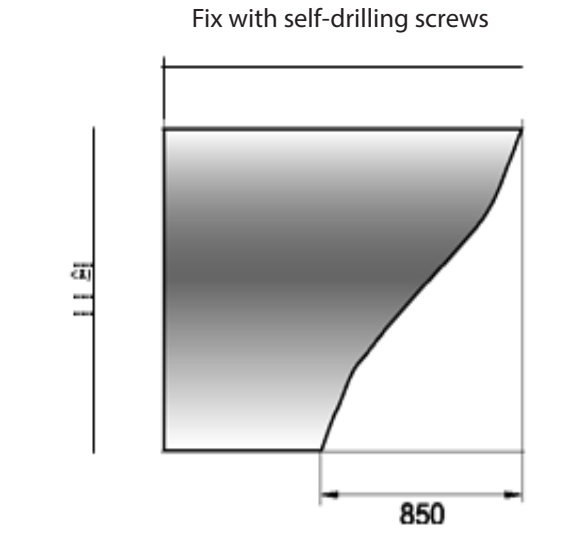
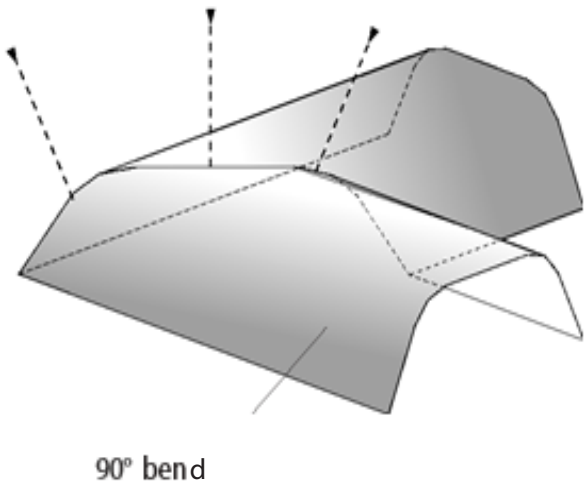


Fig. 4.56b Assembling the top insulation on a straight strip





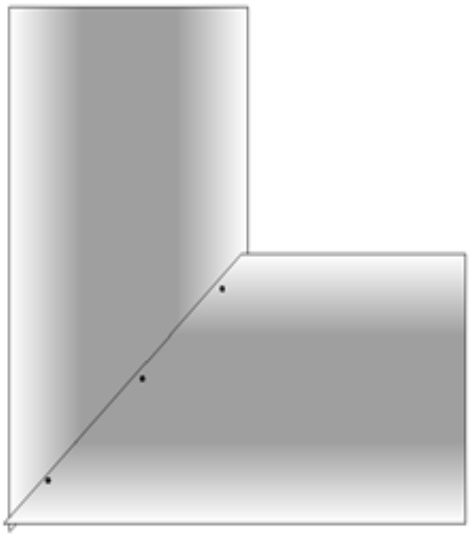
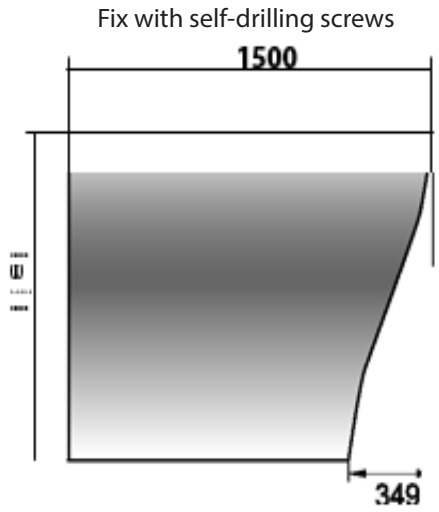
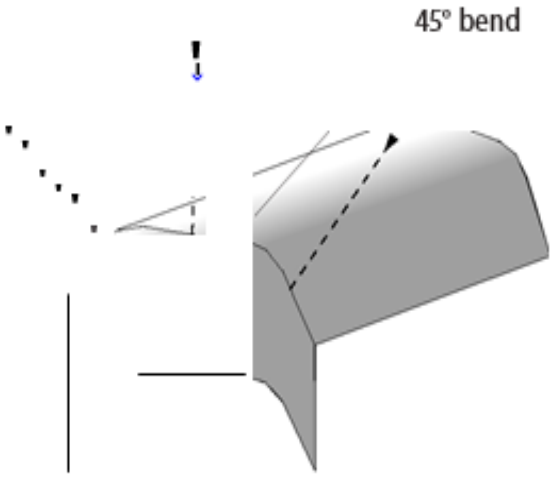


Fig. 4.57a Assembling the insulating p/ate on the ban bends





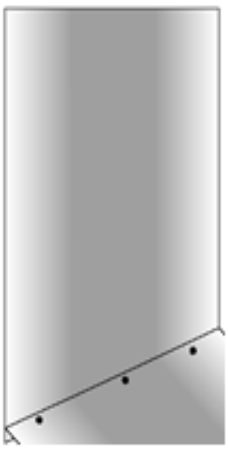


Fig. 4.57b Assembling the insulating p/ate on the band bends

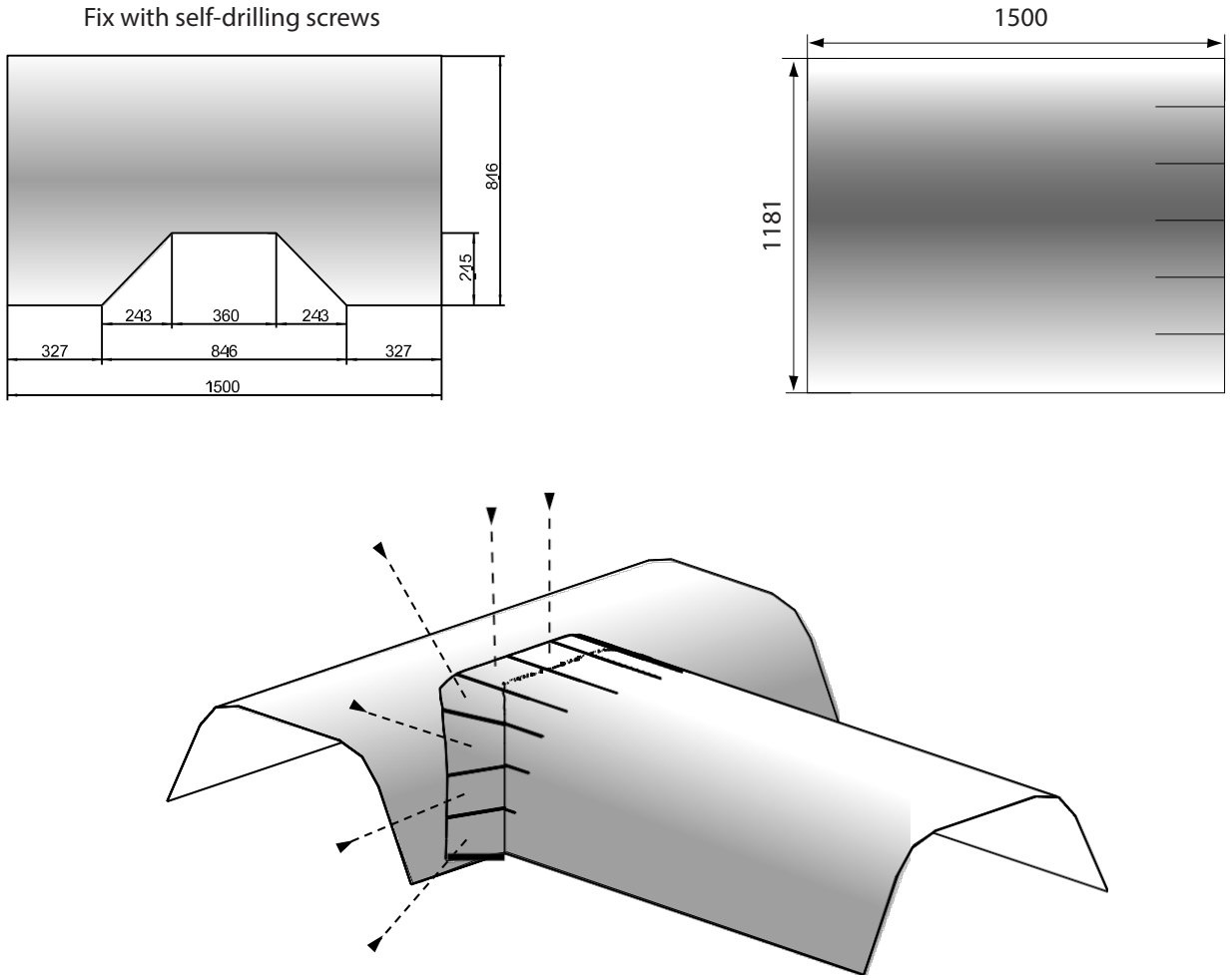


Fig. 4.58 Assembling the insulating plate on the "T" connections in the strip

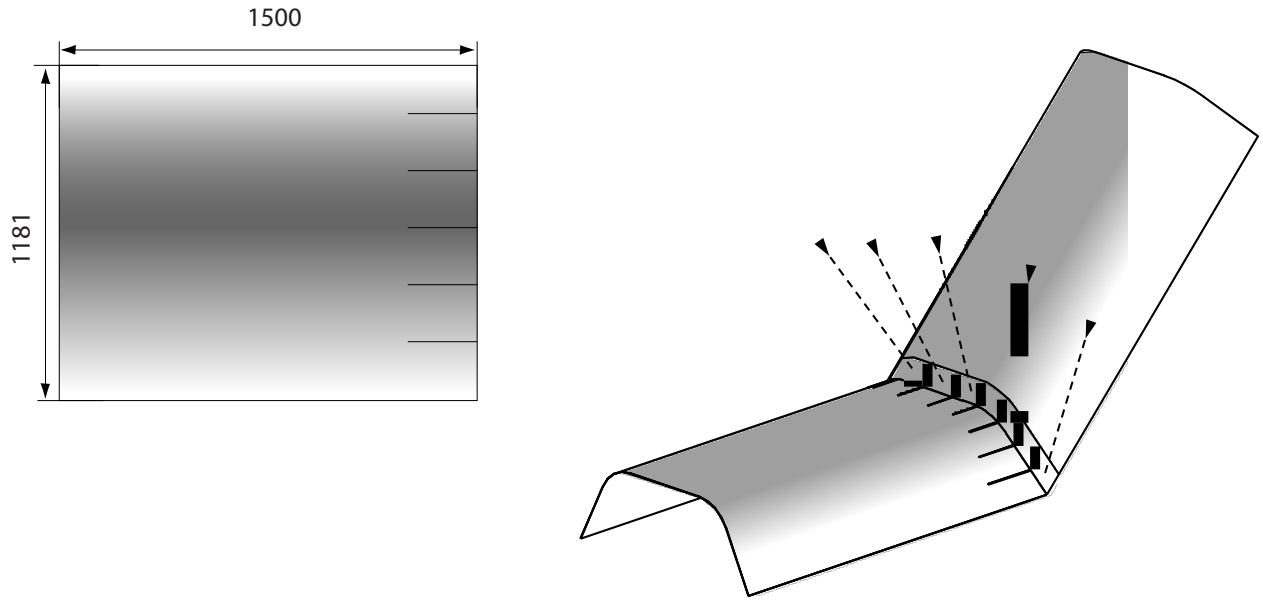


Fig. 4.59 Assembling the insulating plate on the vertical bends in the band

4.9.9 Vertical connections for the radiant band positioned on two different levels

Fit the board cover along the profiles of the side panels and fix in place with self-drilling screws. Fit the 90° or 45° bends into the pipes and fix as shown in 4.7.3.

Connect the bends with the pipe cut to measure and fix as shown in 4.7.3.
Alternatively the height can be adjusted as shown in fig. 4.61, with the sides and top insulation.

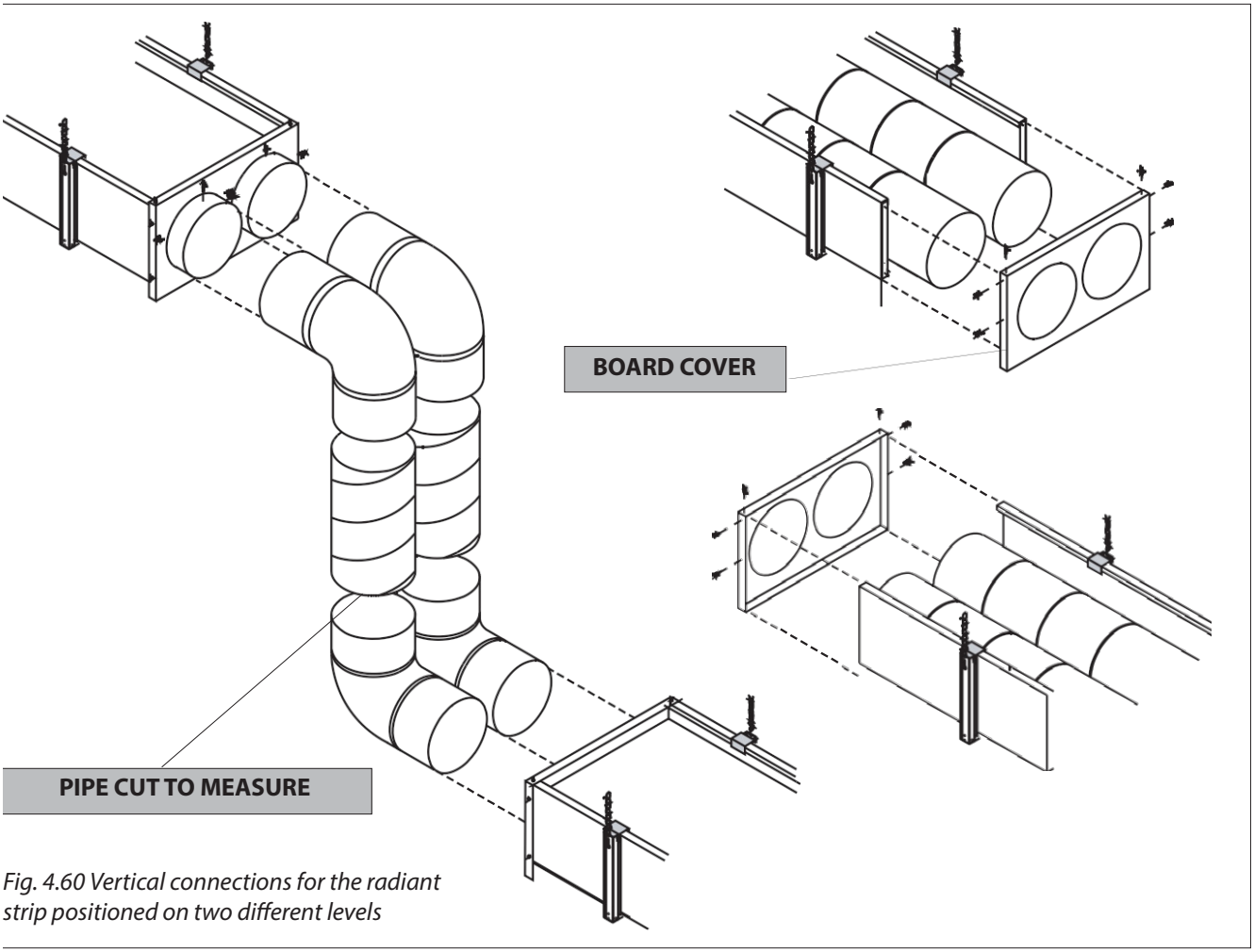


Fig. 4.60 Vertical connections for the radiant strip positioned on two different levels

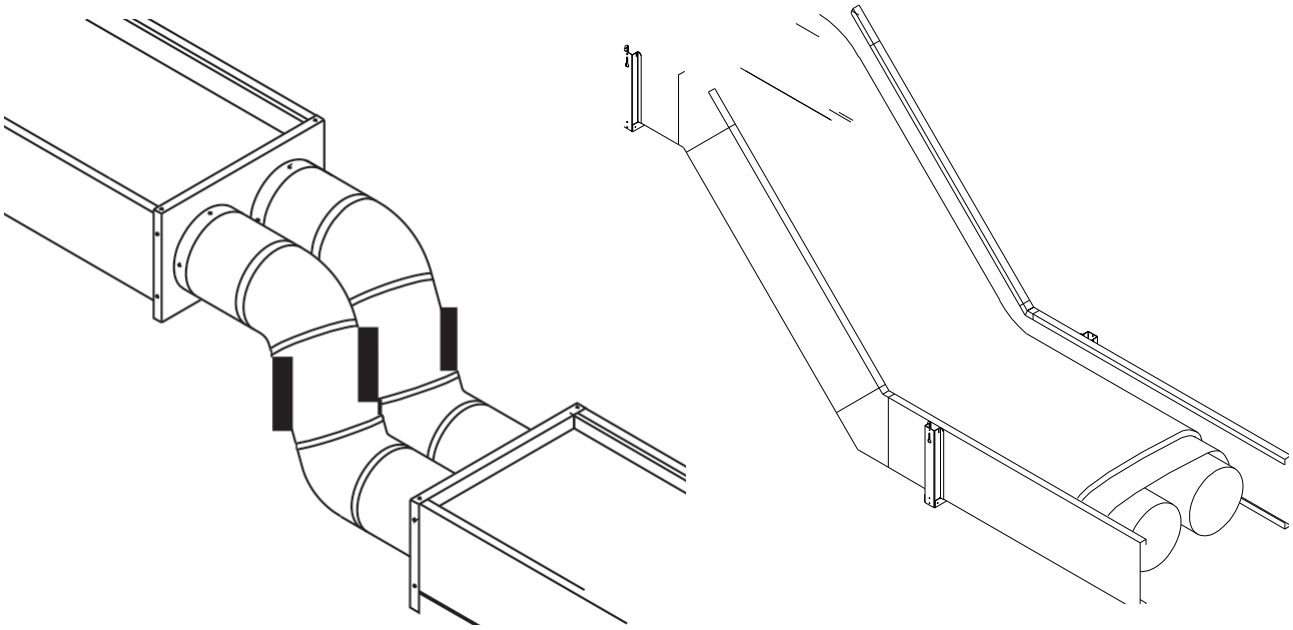


Fig.4.61 Examples of vertical collections

4.9.10 Assembling the bottom grid (optional)

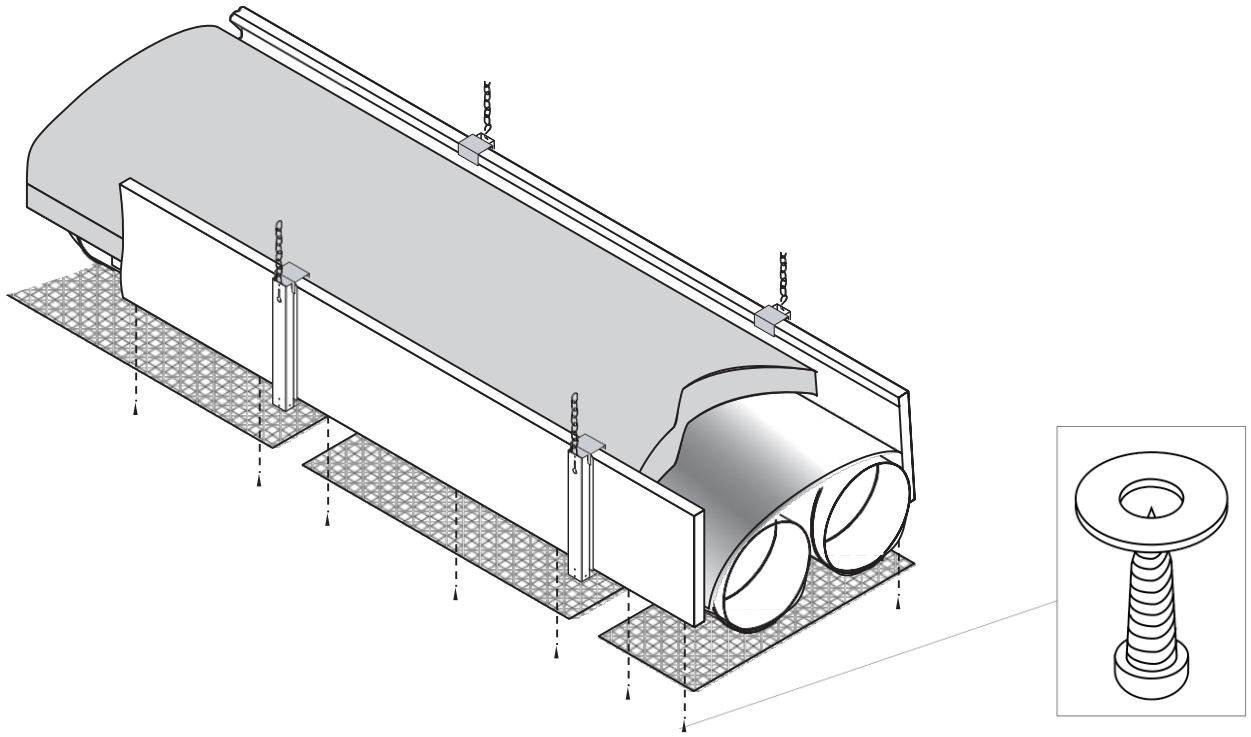


Fig.4.62 Fixing the bottom grid

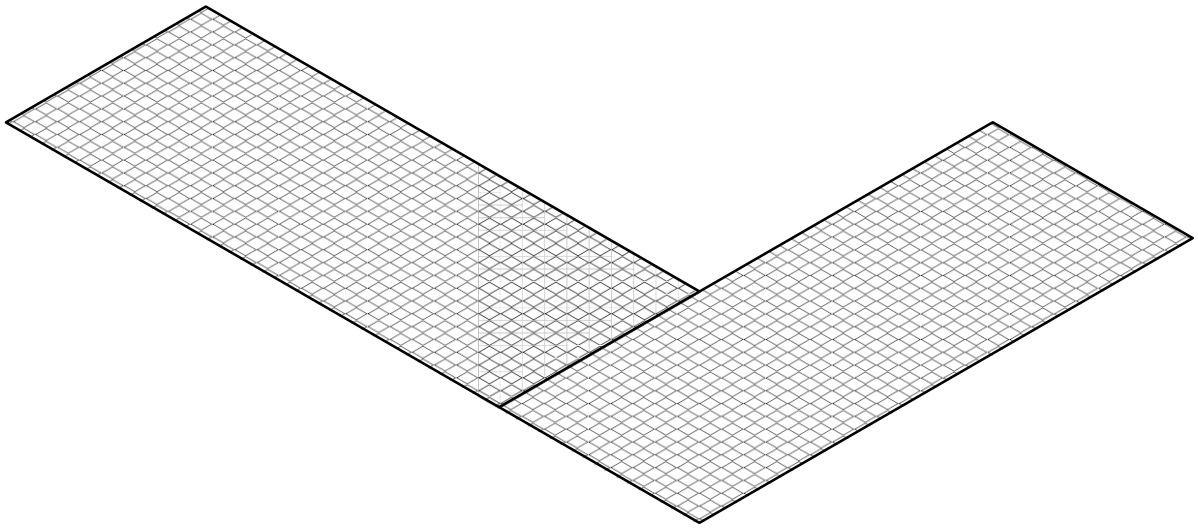


Fig.4.63 Connecting the bottom grid in the bends

4.9.11 Assembling the top shell (optional)

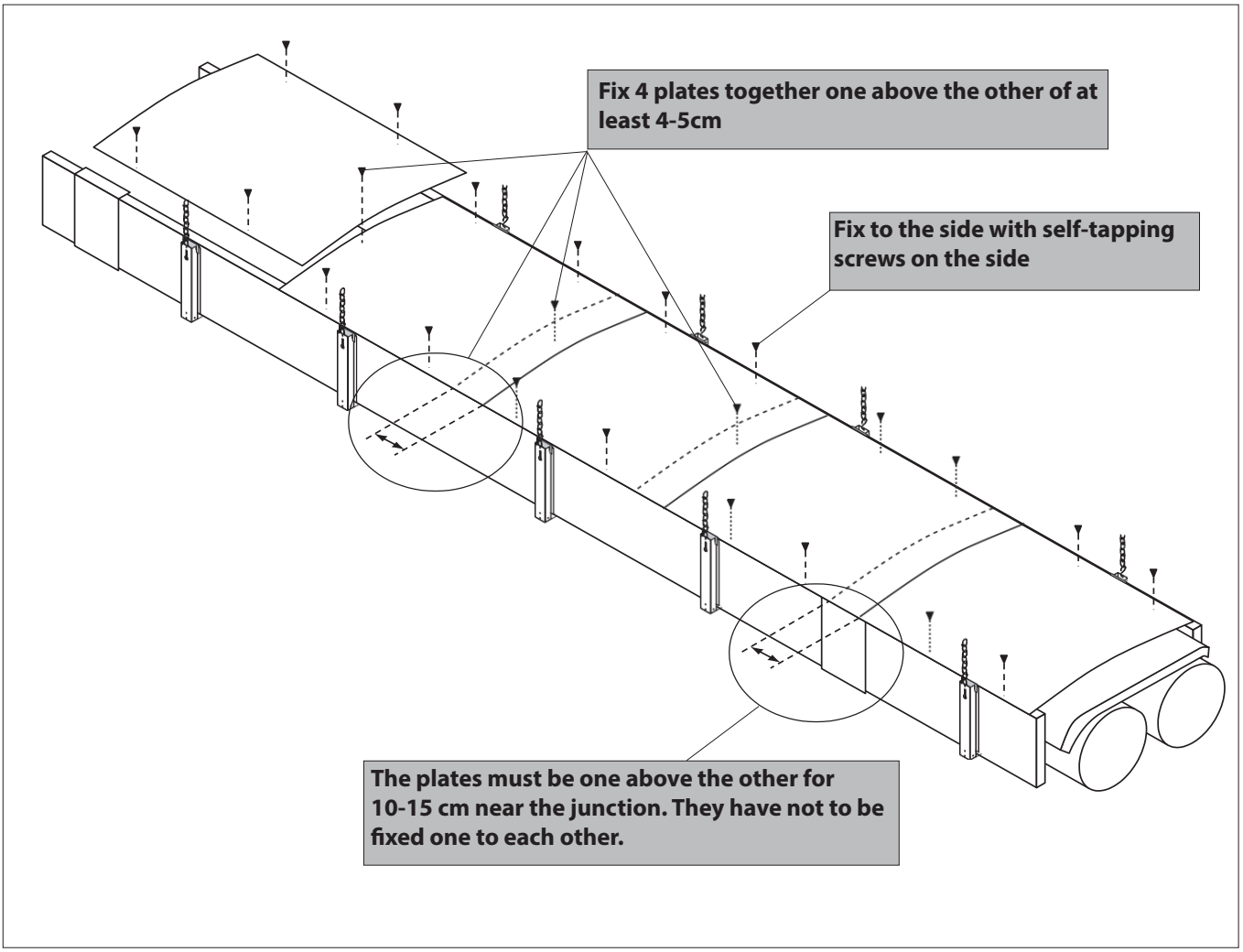


Fig.4.64 Assembling the top shell

4.9.12 Assembling the reflecting sides (optional)

Fix the bracket (A) onto the strip support, as shown in the figure.
Fit the reflecting sides onto the brackets, introducing the "U" side support into the slit (B) in the bracket, as shown in the figure below.

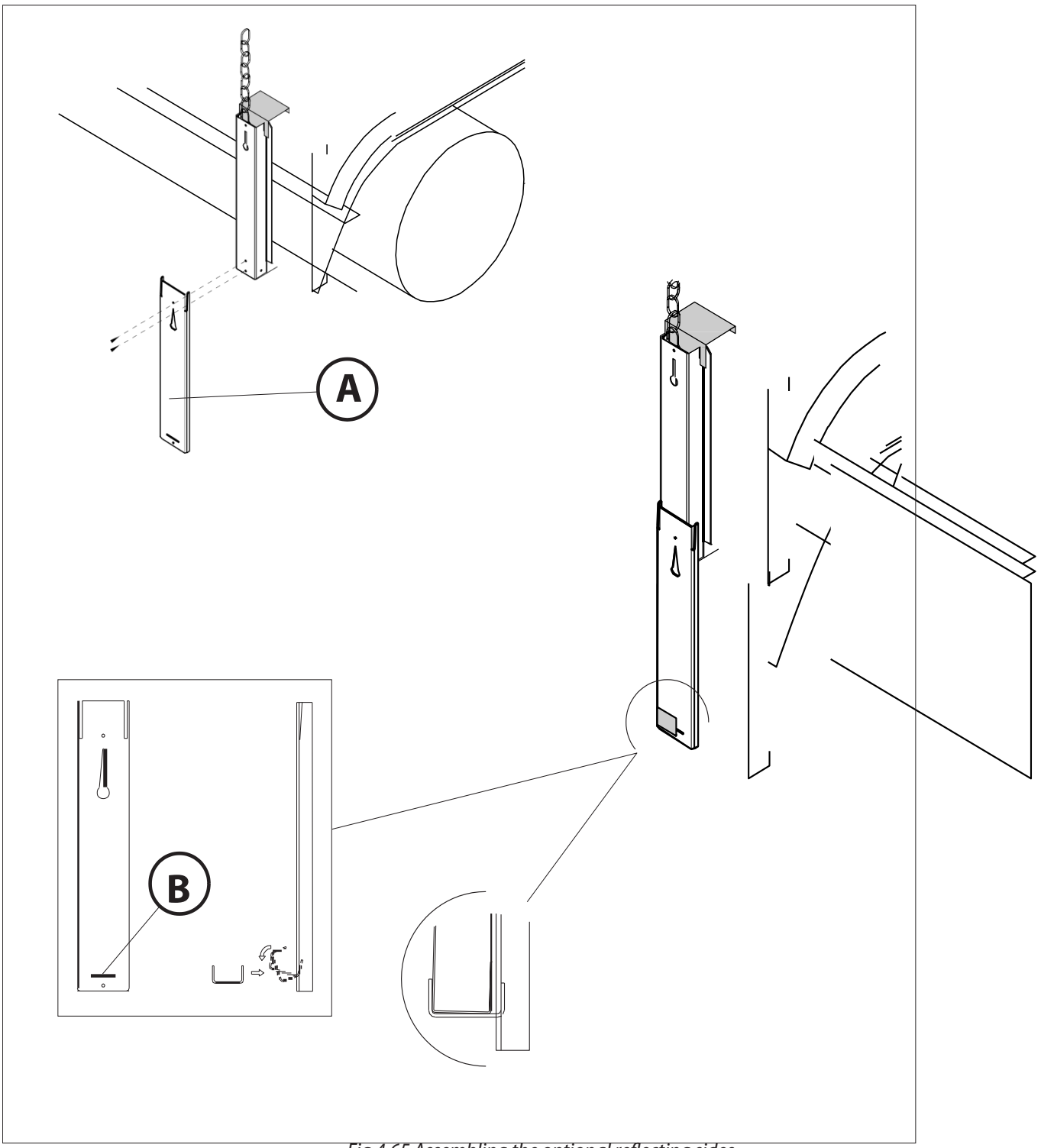


Fig.4.65 Assembling the optional reflecting sides

4.10 INSTALLING THE RADIANT STRIP WITH THE ADDITIONAL REFLECTING SIDE

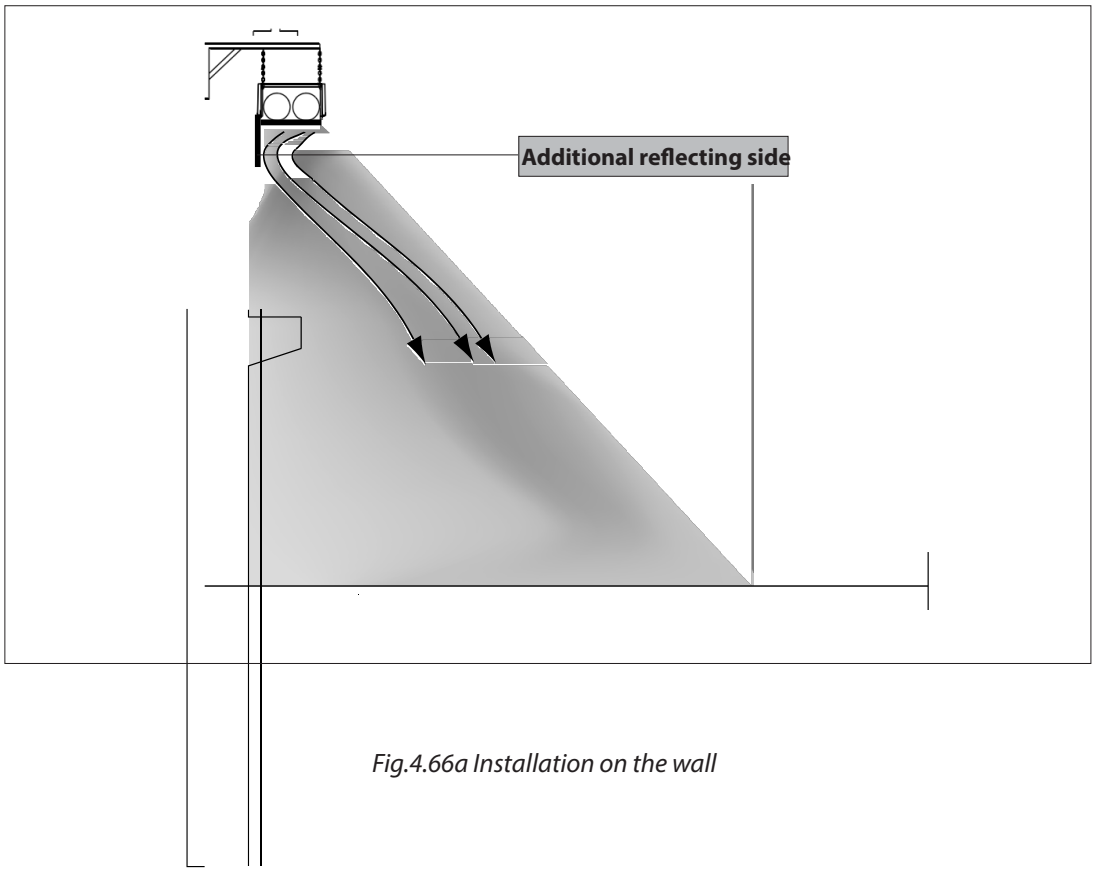


Fig.4.66a Installation on the wall

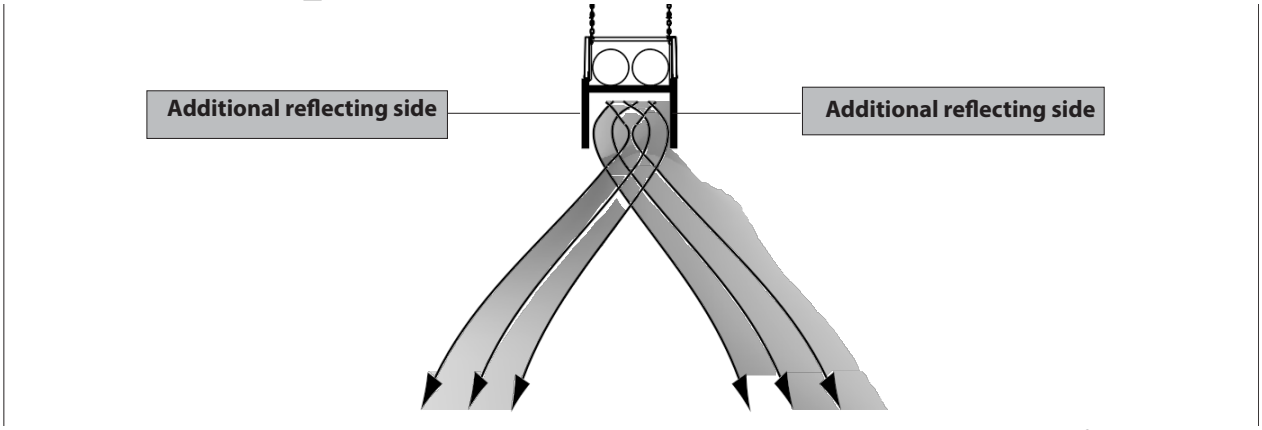


Fig.4.66b Installation on the ceiling for very high rooms

5 GAS PIPING

The gas supply piping must be constructed in conformity with current legislation in the country of installation. The size of the piping and any pressure reducers must guarantee the correct operation of the appliance.
The materials used must conform to current legislation in the country of installation.

a) This appliance cannot suppport pressure above 40 mbar (0.04 bar), otherwise the gas valve membranes could break.

b) If Methane gas is used, a pressure stabiliser and pressure gauge with a scale of 0-60 mbar must be installed up stream from the main line, after the meter, regulated at a pressure of 20 mbar (0.02 bar); higher pressure could cause poor combustion and difficulty in lighting the flame.

c) If LPG (Propane) is used, a 1st stage pressure reducer must be installed near the tank, to reduce pressure to 1.5 bar; a 2nd stage pressure reducer must be installed on the main outside line, at the foot of the shed, to reduce pressure to the levels given in the table on page 49. After the 2nd stage pressure reducer, install a pressure gauge (scale 0-60 mbar - 0.06 bar) and regulate the pressure to the levels given in the table on page 49; higher pressure could cause poor combustion and difficulty in lighting the flame.

d) A pressure gauge must be installed upstream and downstream from the main gas supply line, clearly visible with a scale of 0-60 mbar (0.06 bar) so that it is possible to check the difference in pressure upstream and downstream, and therefore the delivery of the entire network.

e) Furthermore, if the main gate valve is closed and all the equipment turned off, the plant and gas valves can be checked for airtightness, by checking after a few minutes if there is a pressure drop shown on the pressure gauges.

f) The appliances must always be connected using ball valves and anti-vibration flexible connections for gas pipes.

g) To regulate the gas supply pressure, all the appliances are tested and regulated in the factory at the preset pressure level (refer to the information given on the burner plate or refer to the table 7.1 on page 60)

IMPORTANT
For methane gas supply at a pressure above 20 mbar (200 mm app.), a pressure stabiliser must be fitted for each appliance and the pressure set at 20 mbar.

N.B. Put the seal cap on the solenoid gas regulation unit after setting.

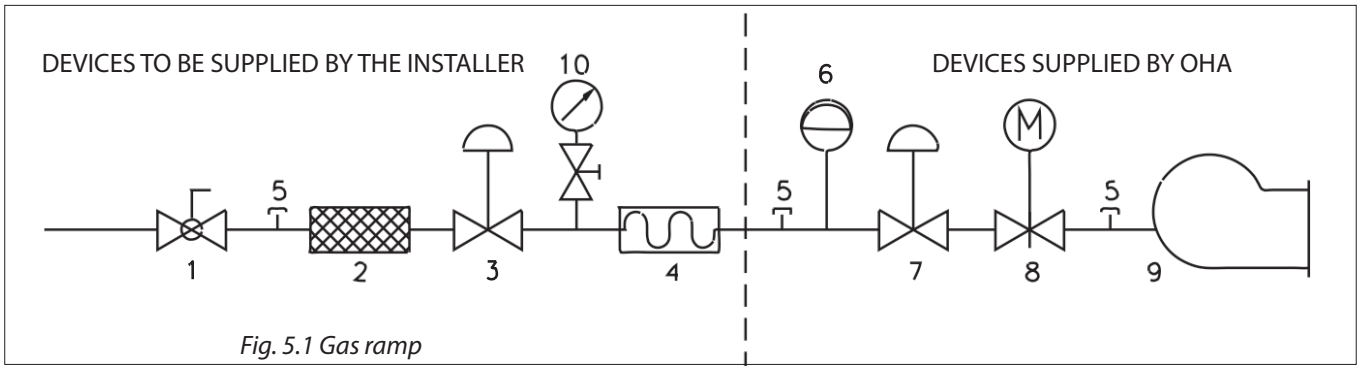


Fig. 5.1 Gas ramp

1= Manual gas shut-off ball valve
2= Gas filter
3= Gas pressure regulator with minimum and maximum device (Pu = 0,04 bar).
A stabiliser must be installed for intake pressure ≤ 0,04 bar
4= Anti-vibration connection
5= Gas pressure test point
6= Minimum gas pressure level control
7= Gas pressure regulator
8= Safety solenoid valve
9= Burner
10=Pressure gauge, scale 0-60 mbar with push button valve

6 WIRING DIAGRAM

6.1 WIRING DIAGRAM FOR THE COMBUSTION UNIT TO THE CONTROL BOARD SLIM2 AND SYS2

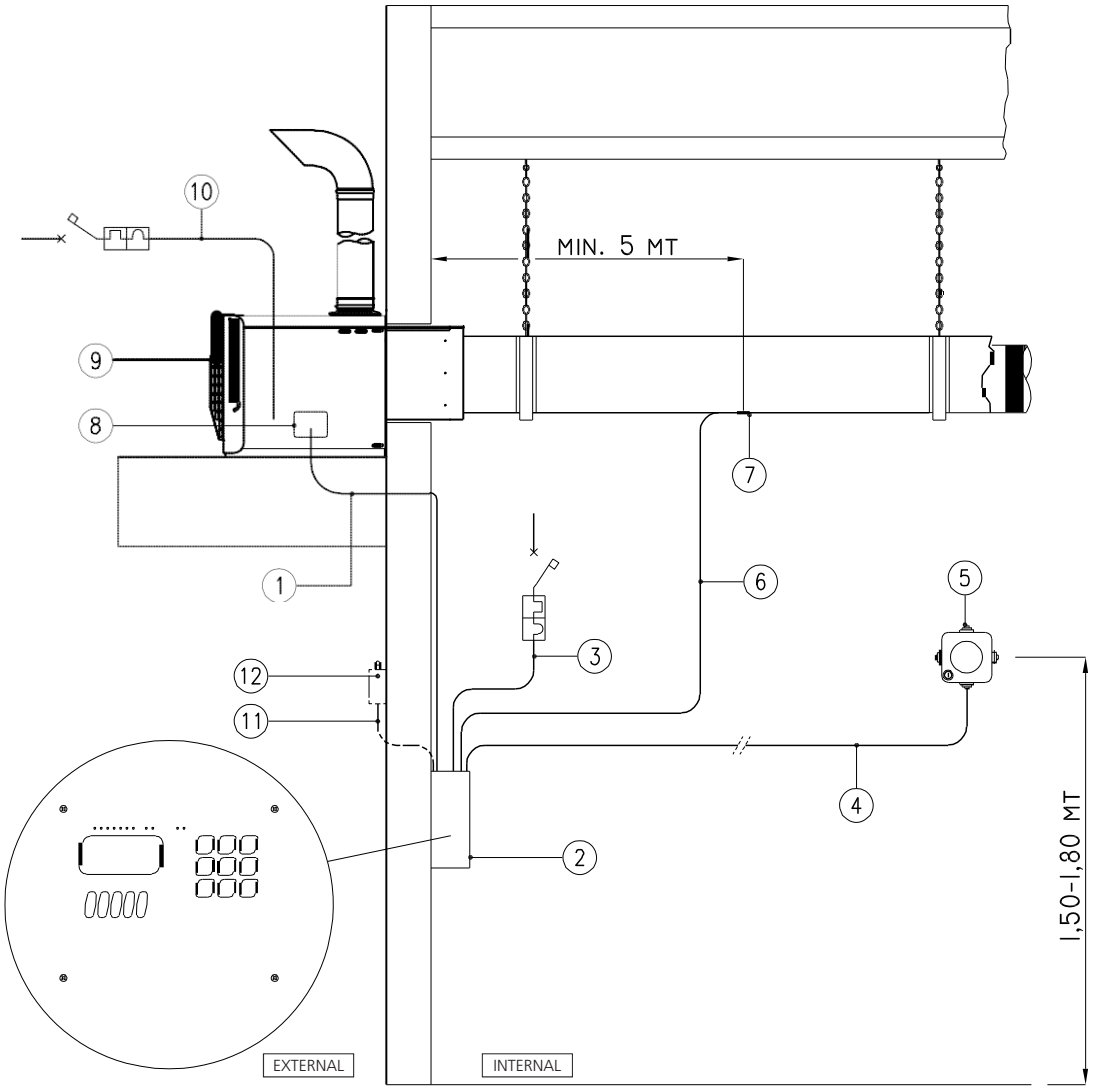


Fig. 6.1 Wiring diagram to the control board mod. Slim2 and Sys2

1) Serial linkage between OHA thermal unit and thermostat (shielded cable which guarantees a double isolation of the parts under tensive stress with minimum section 2x0,5 mm^2, separate from the high voltage cables; maximum length allowed for the network connection is 300 m).

2) Inet serie thermostat.

3) 1/N ~ 50Hz 230V monophase power supply of the Inet thermostat (2x? mm^2 section), the real section has to be defined according to the distance of the thermostat from the electric energy source.

4) Internal probe connection (3x0,5 mm^2 min. sect. shielded cable and separate from the high voltage cables).

5) Internal probe with 3 positions key selection (automatic, manual and off).

6) PT1000 probe connection (2x0,5 mm^2 min. sect. shielded cable and separate from the high voltage cables).

7) PT1000 probe (optional) code 05CESO0848 (placed minimum 5 m far from the thermal unit).

8) Interface board.

9) OHA burner.

10) 3/N/PE ~ 50Hz 400V three-phase power supply of the Oha unit (5x? mm^2 section), the real section has to be defined according to the distance of the Oha unit from the the electric energy source.

11) External probe connection (2x0,5 mm^2 min. sect. shielded cable and separate from the high voltage cables).

12) External probe.

N.B. The power line (3) and (10) must be protected upstream, a multiple pole switch must be used with an opening of at least 3 mm between the contacts.

The appliance must always be connected to an efficient earth system.

For further information, consult the instruction manual included with the electric board.

ATTENTION: When the **OHANET** control system is used, please read the manual **OHANET CONTROL PANEL**

7 TESTING AND START UP

7.1 INVERTER SPEED SETTINGS AT FIRST START-UP

Before starting the OHA burner, check the gas and electrical connections, also make sure that the diaphragm is corresponding to the type of fuel in use. The following operation has to be carried out only on first start-up.

1) Supply gas and electric power to the OHA combustion group after having verified that the gas pressure is corresponding to table 7.1 at page 62 and to the equipment data plate.

2) Temporarily disconnect the air pressure switch pipe (Fig. 7.1).

3) Connect the manometer to the nozzle pressure test point (Fig. 7.4 point 2).

4) Supply electric power to the combustion group (after verifying that the supply voltage corresponds to the equipment data plate). Only the fan will operate because the air pressure switch is disconnected.

5) Verify that the fan rotation is correct.

6) Adjust the rpm of the motor using the inverter potentiometer (see Fig. 7.3) to give a manometer reading of -3mbar.

7) Reconnect the air pressure switch pipe (Fig. 7.1), this will signal the controller to start the pre-purge procedure for a

minimum of 20 seconds.

8) After pre-purging, ignition will take place. The flame lights up on 1st STAGE (low fire) and at the same time the corresponding warning lamp illuminates.

9) The burner operates on low fire then, 70 seconds later, the solenoid gas valve opens to the 2nd STAGE (high fire) and the corresponding warning lamp will illuminate.

10) Using a combustion analyser in the flue, regulate the combustion air using the screw situated on the air damper (Fig. 7.3)

11) Wait about 30 ÷ 40 minutes until the system has reached a steady state before taking readings.

Flame failure could be caused by a more or less intense burner flame.
Verify the position of the ignition electrode and, if necessary, change the position of the electrode in the flame, (fig 3.5 page 19).
Verify the correct connection of the phase and the neutral in the control device. Press the red button on the control panel to reset and repeat the ignition procedure.

7.1.1 Ignition phases for the burner

1) When the gas pressure switch and thermostat are made, and the time clock is on, the appliance is powered and begins the ignition procedure.

2) The appliance begins the pre-purge procedure for the combustion chamber and checks the air pressure switch, by running the combustion fan and opening the air damper to maximum.

3) The the air pressure switch makes. The appliance checks the air pressure switch works correctly and if so, starts the pre-purge procedure for the combustion chamber for a minimum of 20 seconds. For further information about the control box refer to the instruction manual supplied.

4) After pre-purge, the air damper closes to minimum (1st stage). Ignition takes place and the green led lights up on the control board. The flame lights on low fire (1st stage) and the green led remains alight.

If the flame does not ignite, the appliance locks out and the red led indicator illuminates on the control board. It is possible that the flame does not ignite due to an unstable flame.

Check the ignition electrode position and if necessary, change the electrode position in the flame (fig. 4c page 12). Press the red led to reset and repeat the ignition procedure.

5) The burners works at the first flame stage and, after about 70 seconds (time for the burner to start the second stage), it will open both the air lock and the second stage gas valve (high fire) The control panel led illluminates.

It is important to remember that the first time the radiant strips are turned on, the cladding causes a slight steam outlet into the room, which requires ventilating the room for a short while.

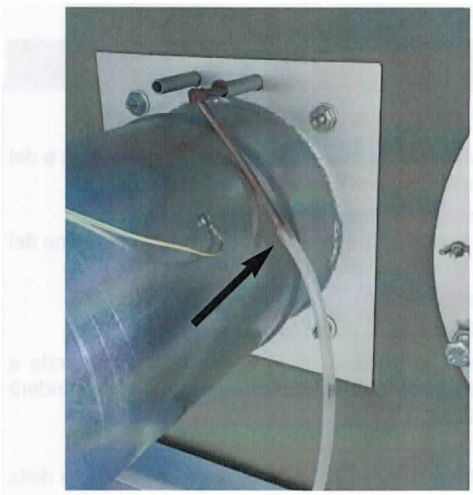


Fig.7.1 Pressure switch connection pipe.

Fig.7.2 Speed adjust potentiometer

7.2 INVERTER PARAMETERS

7.2.1 Control of motor rpm by potentiometer.

To adjust the rpm of the motor via a potentiometer, set the parameter **F0-01** to **10** on the inverter as follows:

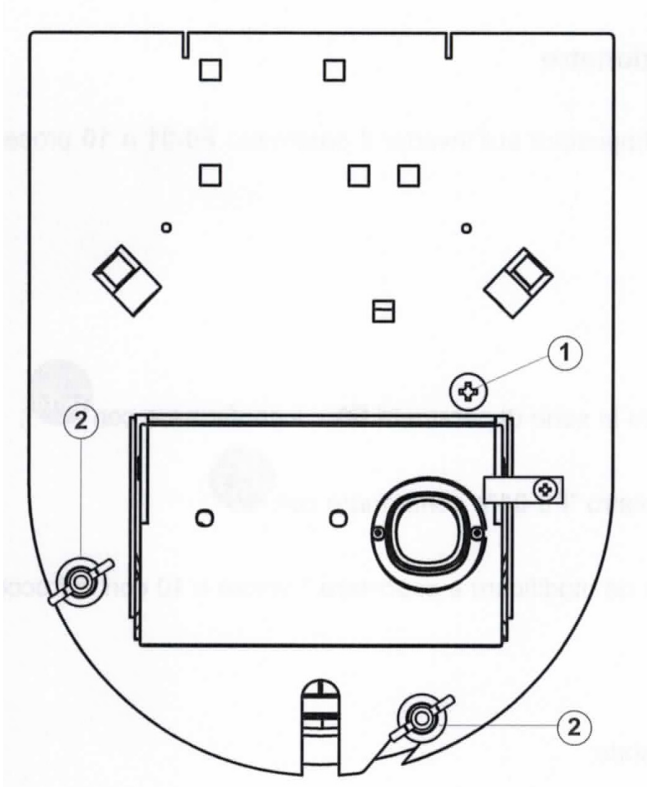
1) The motor must be switched off.
2) Press the **"Menu"** button and confirm with the **"Enter"** button.
3) Press the **up/down** arrow buttons to choose the parameter **F0**… and confirm with **"Enter"**
4) Press the **up/down** arrow buttons to choose the parameter **"F0-01"** and confirm with **"Enter"**
5) Press the double left arrow button to the digit position to be modified and set the value to 10 using the **up/down** arrow buttons.
6) Press **"Enter"** to confirm the parameter set;
7) Press the button **"Enter"** for several seconds to exit settings.

7.2.2 Motor parameters.

To modify the parameters related to the motor installed, operate as described in paragraph 7.2.1, choose the series of **FA**… parameters and set up as described in table 7.1.

PARAMETER	DESCRIPTION	UNIT	VALUE		
FA-01	Motor power	kW	1.1	3	5.5
FA-03	Motor current	A	2.7	6.5	11
FA-04	Motor frequency	Hz	50		
FA-05	Motor speed	rpm	1390	2820	2900
FA-06	Motor voltage	V	400		

7.3 AIR DAMPER REGULATION



The vacuum measured at the air pressure switch (Fig. 7.3) must be -3 mbar (cold reading).

1 = Air regulator

2 = Wing nuts (loosen whilst adjusting)

Adjust the damper position whilst burner is in high fire.

Adjust burner pressure whilst in low fire to obtain correct combustion readings.

There are two versions of the air lock adjustment:

1) Air lock with automatic servocontrol

2) Air lock without automatic servocontrol

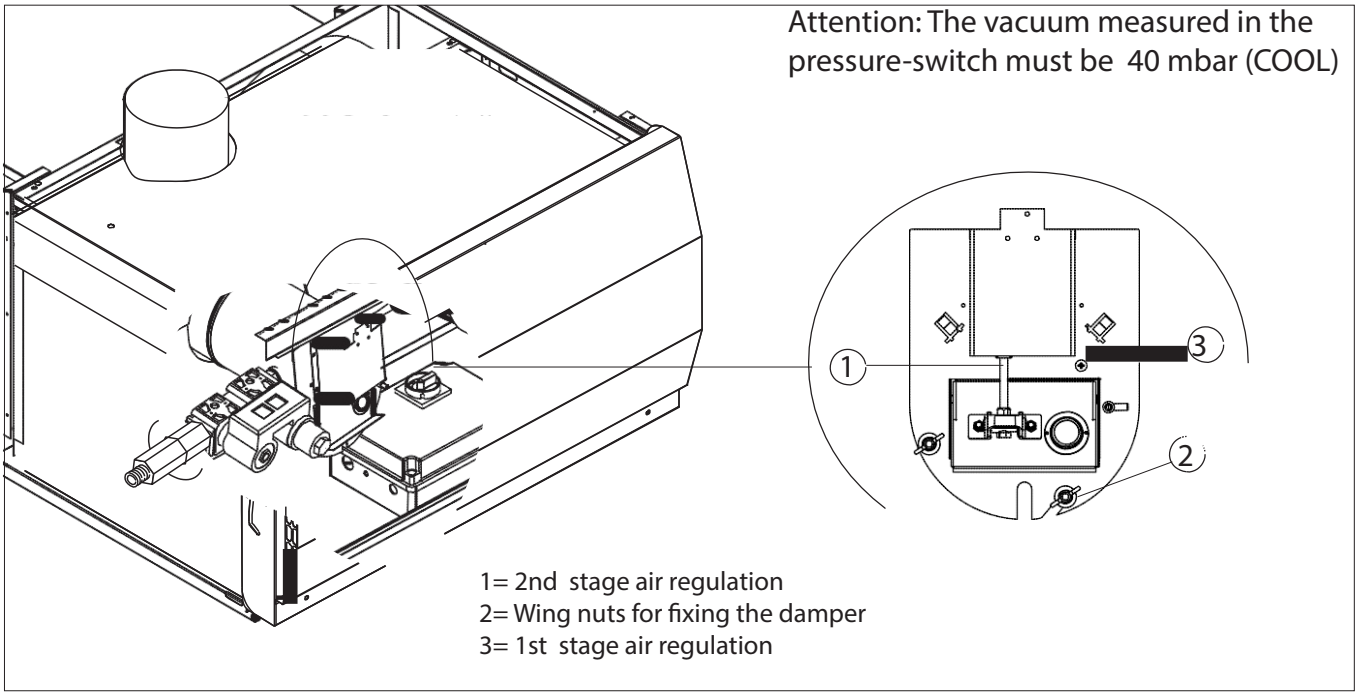


Fig.7.1 Detail of the air lock adjustment with automatic servocontrol

For air locks with automatic servocontrol, the lock opening must be regulated for both the second stage (item 1, fig. 7.1) and the first stage (item 3 fig. 7.1).

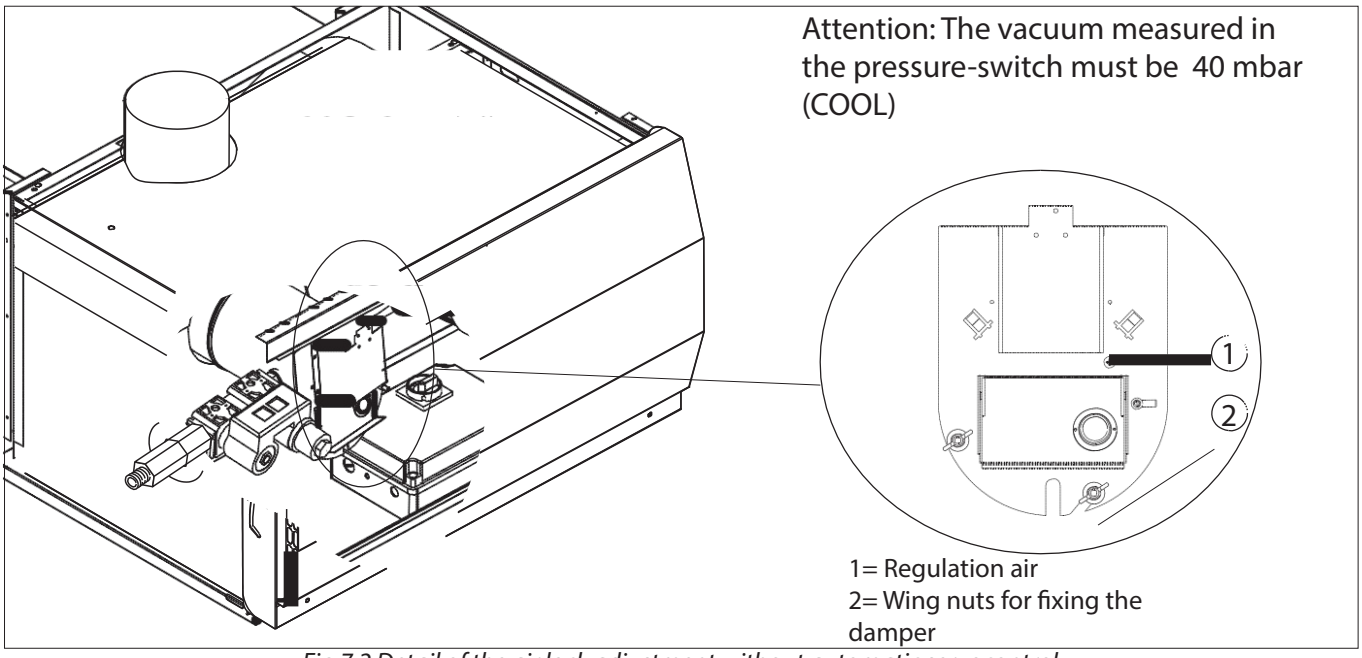


Fig.7.2 Detail of the air lock adjustment without automatic servocontrol

For air locks without automatic servocontrol, adjust the lock opening for the second stage, and when the first stage is working, adjust the gas flow until the required combustion levels are reached.

7.4 GAS PRESSURE REGULATION

UNIT VERSION	FUEL	SUPPLY PRESSURE	COMBUSTION HEAD PART NUMBER	GAS DIAPHRAGM DIAMETER	BURNER PRESSURE
OHA 100-50	Natural gas G20	20 mbar	05CNTO2506	7.5	15
	LPG Propane G31	37 mbar	05CNTO2506	4.5	36
OHA 100-100	Natural gas G20	20 mbar	05CNTO2506	12	18
	LPG Propane G31	37 mbar	05CNTO2506	6.5	36
OHA 200-115	Natural gas G20	20 mbar	05CNTO2505	9	17
	LPG Propane G31	37 mbar	05CNTO2506	6.5	33
OHA 200-150	Natural gas G20	20 mbar	05CNTO2505	12	14
	LPG Propane G31	37 mbar	05CNTO2506	7.5	36
OHA 200-180	Natural gas G20	20 mbar	05CNTO2505	13	15
	LPG Propane G31	37 mbar	05CNTO2505	8	36
OHA 400-200	Natural gas G20	20 mbar	05CNTO2505	13	9
	LPG Propane G31	37 mbar	05CNTO2505	7.5	31
OHA 400-250	Natural gas G20	20 mbar	05CNTO2508	15	6
	LPG Propane G31	37 mbar	05CNTO2505	8.5	31
OHA 400-300	Natural gas G20	20 mbar	05CNTO2508	18	5
	LPG Propane G31	37 mbar	05CNTO2505	10	31

Tab 7.2

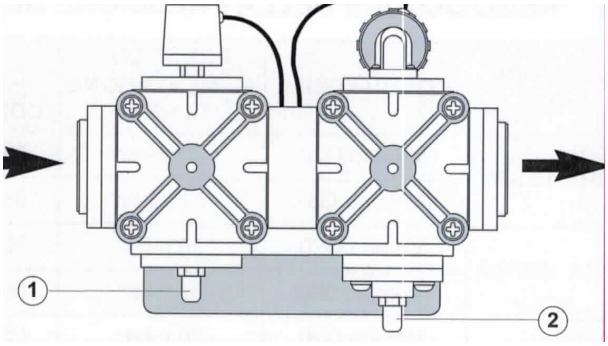
7.5 SETTING THE AIR-DIFFERENTIAL PRESSURE SWITCH

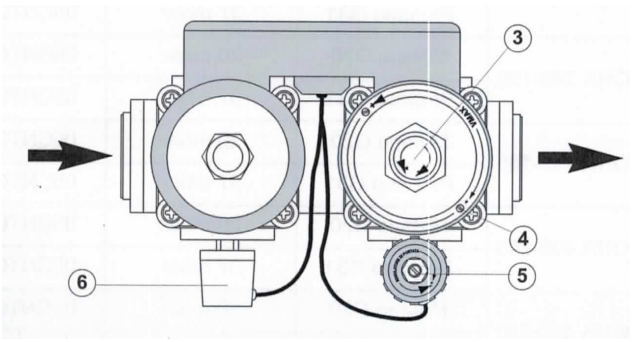
Check the setting on the differential pressure switch according to the data given in the table below.

	OHA 100-50	OHA 100-100	OHA 200-115	OHA 200-150	OHA 200-180	OHA 400-200	OHA 400-250	OHA 400-300
Pressure switch setting (Pa)	60	60	65	65	60	75	70	75

Tab 7.3

1) Pressure test point upstream from the solenoid
2) Pressure test point downstream from the solenoid
3) Slow ignition regulation (set during tests performed by by the manufacturer)
4) 1st stage flame regulation
5) 2nd stage flame regulation
6) Gas pressure switch





N.B. Put the seal cap on the solenoid regulation device after setting

8 MAINTENANCE

The appliance must be checked once a year by an authorised person. Always turn off the power supply during maintenance work.

8.1 Changing the fuel

Conversion must only be performed by a qualified person, in compliance with safety regulations in force. The manufacturer declines all liability for damage caused by incorrect conversion or improper/ incorrect use of the appliance.
For a change of fuel it is necessary to replace the baffle plate (fig. 3.4, page 19) and in some cases the combustion head.
The table on page 60 shows several combustion units and the different models for the combustion heads

8.1.1 Conversion from Natural gas to LPG gas

1) Close the gas supply and disconnect the electric power supply.

2) Unscrew the two supporting wing-nuts (item 1, figure 8.1) and remove the air lock.

3) Unscrew the 3-part join that holds the combustion head (see fig. 3.4, page 19 and fig. 8.2 page 63), remove the diaphragm and replace it with a suitable one for propane gas (see table 7.1 page 61). If the combustion head is changed, remove it from the combustion chamber, disconnect the connections (ignition and ground) and replace it with the new combustion head. However, before proceeding with replacement, check the new head corresponds to the table in this manual (tables 3.8, 3.9, 3.10 on pages 16, 17, 18).

4) Mount the air lock and electric plug, fixing it in place with the two screws (if an automatic air lock is used).

5) Turn the appliance on and check that the pressure to the burner is 37 mbar (pressure test point near the solenoid entrance).

6) Adjust diaphragm pressure using the pressure regulator on the solenoid valve (see fig. 7.3 on page 61); the values must correspond to those given in table 7.1a on page 60.

7) Check the threaded connections for gas leaks.

8) Stick the label onto the specification plate (appliance set for using ...) with the new type of gas used.

Put the seal cap on the gas valve regulation device after setting.

8.1.2 Conversion from LPG gas to Natural gas for OHA 300

1) Proceed as for 1), 2) 3) and 4) in 8.1.1

5) Turn the appliance on and check that the pressure to the burner is 20 mbar (pressure test point near the entrance to the solenoid).

6) Adjust pressure to the nozzles on 1st and 2nd stage using the solenoid pressure regulators (see fig.7.3 on page 62), the levels must correspond with the table on page 49.

7) Check the threaded connections for gas leaks.

8) Stick the label onto the specification plate (appliance set for using ...) with the new type of gas used.

Put the seal cap on the gas valve regulation device after setting.

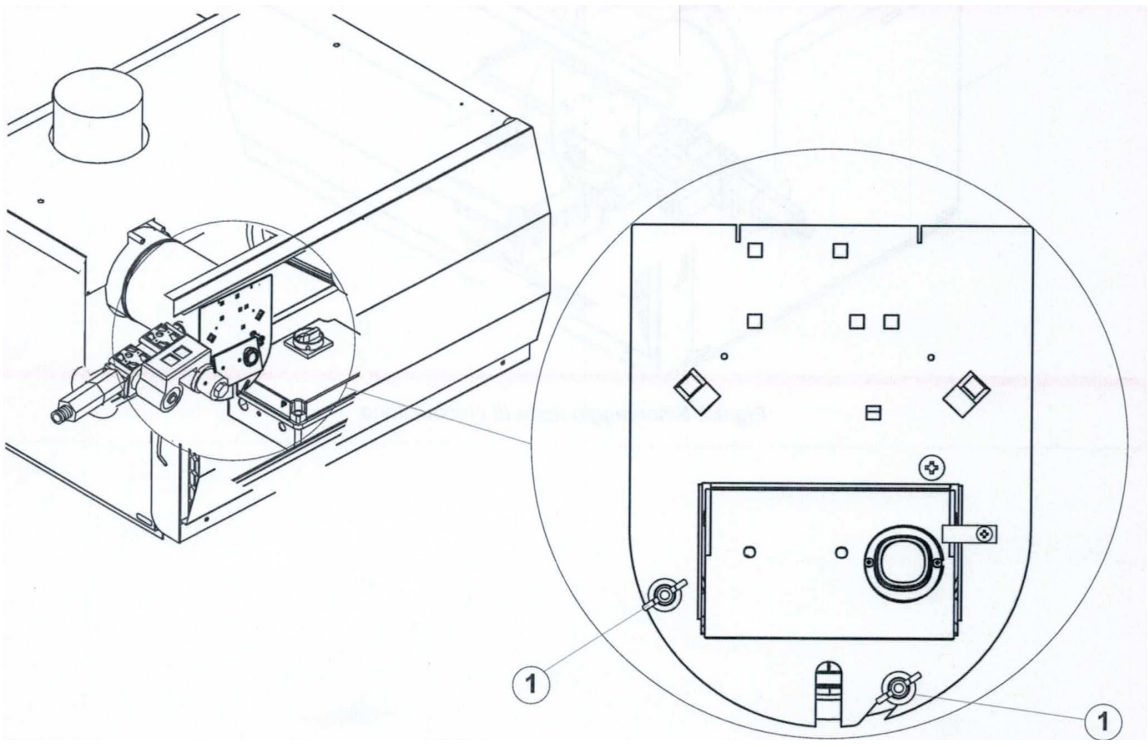


Fig. 8.1 Dismantling the air damper

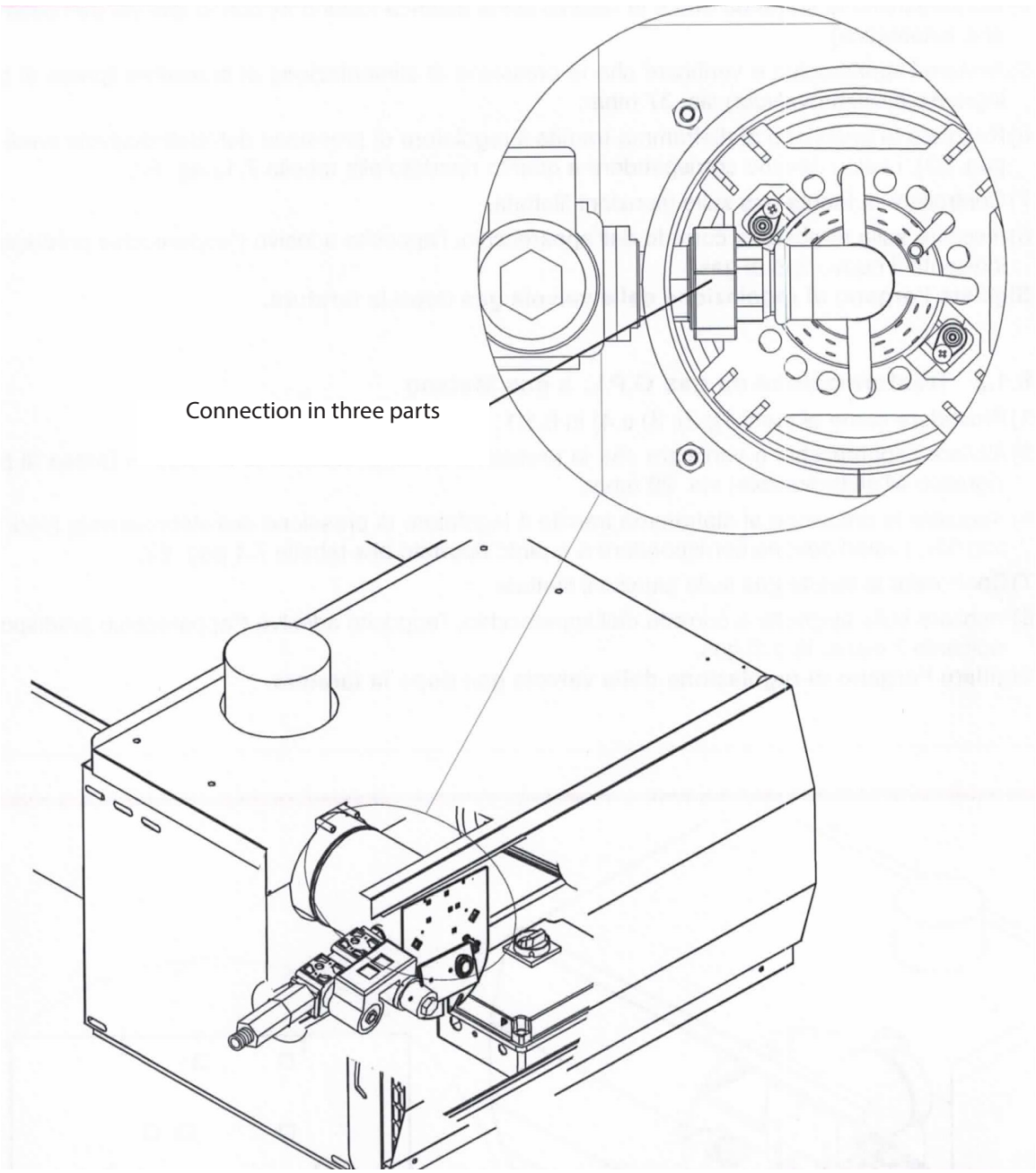


Fig.8.2 Dismantling the combustion head

8.2 OPERATING FAULTS

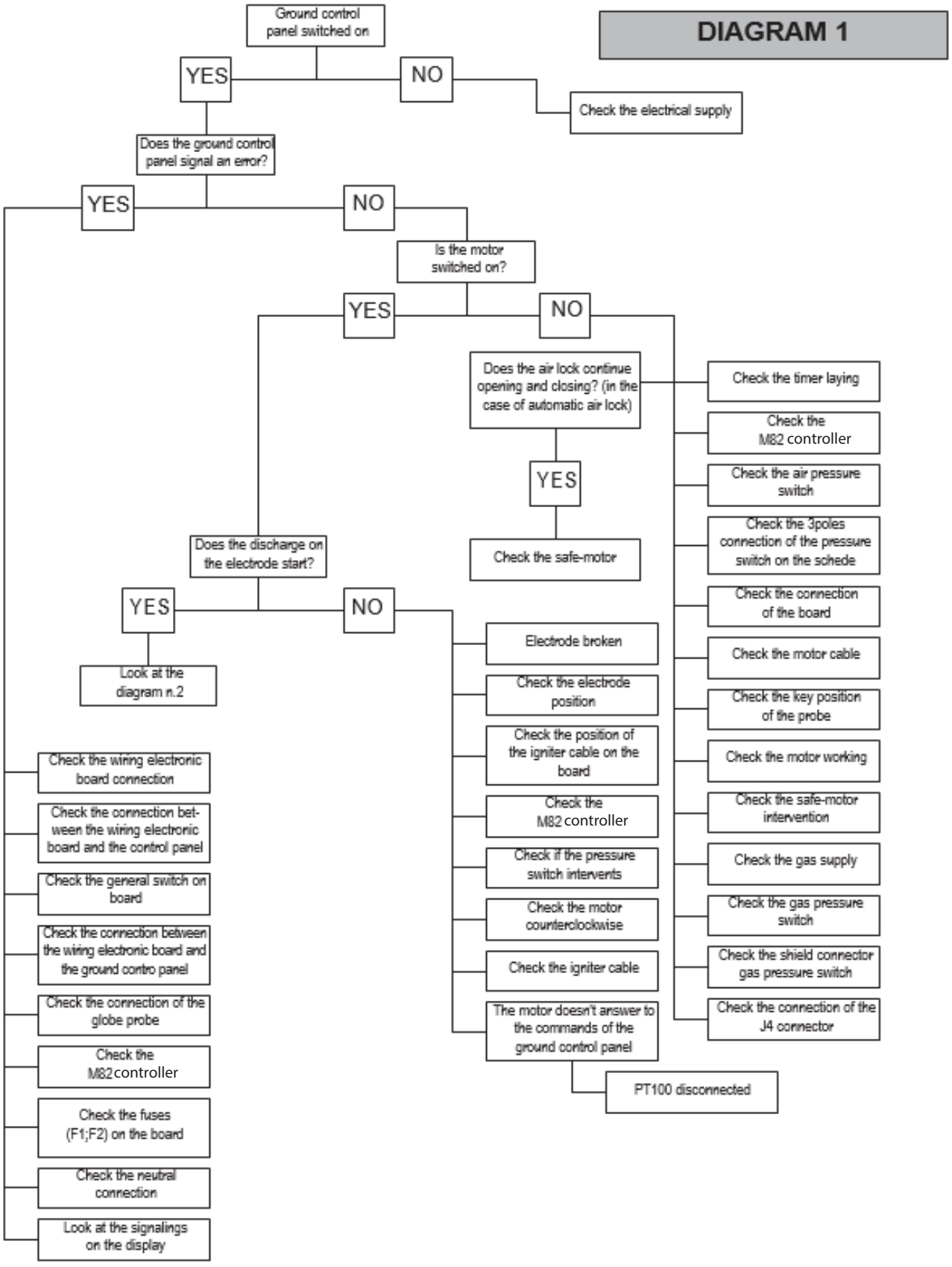


Fig. 8.3 Diagram 1 operating faults

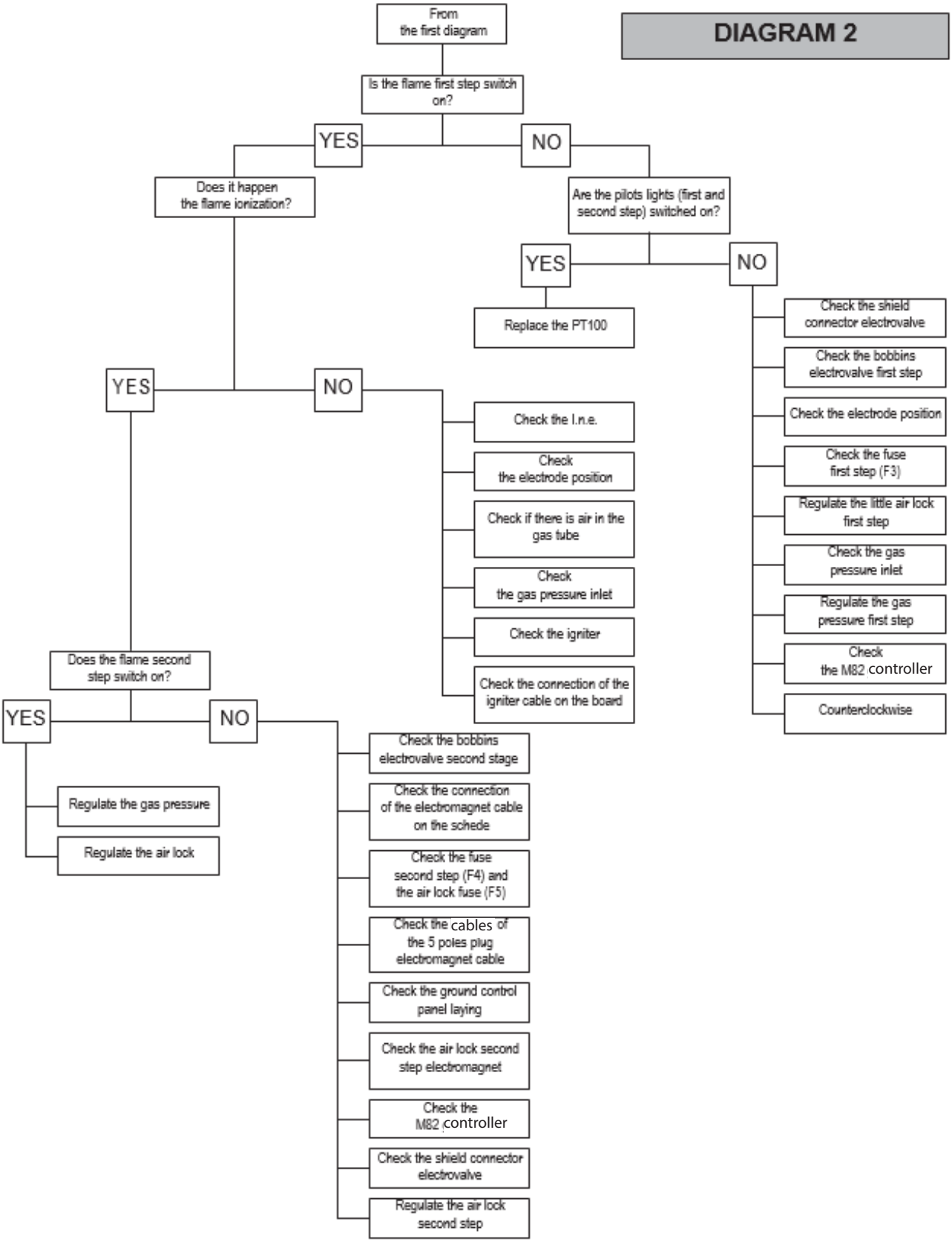


Fig. 8.4 Diagram 2 operating faults

9 WARRANTY

9.1 COVER AND VALIDITY

Sonning OHA units are supplied with twelve months guarantee from the date of commissioning by an approved agent, (commissioned within 6 months of despatch) or twelve months from date of despatch from our works.
The warranty is void if: -
- Installation is not in accordance with the general requirements of this manual.
- The flue arrangement and air supply for the heaters are not in accordance with the following recommendations or codes of practice referred to in this manual.
- Ingress of water.
- Air flow through the heater is restricted.
- The main fan has been switched on or off by other means other than the control system i.e. not allowing an overrun to dissipate the heat in the heat exchanger once the burner has been switched off.
- The heater and/or burner are not operated at the rating laid down in this manual and/or on the heater data plate.
- Finalised commissioning data is not completed and copies supplied to our offices upon completion.

9.2 CLAIMS UNDER WARRANTY

If a claim is made under warranty then the following information will be required to enable a replacement component to be supplied:
i) Heater model.
ii) Heater serial number.
iii) Site address and installers name and address.
iv) Information and symptoms regarding the fault / defect.
Faulty parts must be returned to the manufacturer to verify the claim.
Note: Immediate notification is required if a fault is suspected so that rectification can be undertaken, otherwise no responsibility can be taken for any further damage or loss.

10 SETTING ASIDE

If the appliance will not be used for a long time, the following operations should be performed. Turn the main switch to "OFF" and turn the appliance off at the mains supply.

Close the gas supply valve and disconnect the appliance from the gas mains.
In the case of change in ownership, or a new tenant, all the documentation regarding the heating system must be handed over to the new owner/tenant.

WARNING !!
Only authorised persons should disconnect the appliance.

IMPORTANT: Please read this manual carefully before turning the radiant strip on. With the aim of constantly improving its products, the manufacturer reserves the right to change the contents without prior notice

This manual replaces the previous manual: Part No. 16GB1304/0817
Current full Part No. Reznor, OHA RHE, EN, May, 18, D301061

NORTEK™
GLOBAL HVAC

Nortek Global HVAC (UK) LTD
Fens Pool Avenue, Brierley Hill
West Midlands, DY5 1QA
United Kingdom
Tel: +44 (0) 1384 489 250
Fax: +44 (0) 1384 489 707
Email: reznorsales@nortek.com
Web: www.reznor.eu/

Registered in England No° 1390934
Registered Office: The Colmore Building, 20 Colmore Circus Queensway, Birmingham, West Midlans, B4 6AT