



RTT 378-930

EN ASSEMBLY MANUAL

RIELLO

RANGE

MODEL	CODE
RTT 378	20093090
RTT 448	20091316
RTT 506	20091318
RTT 564	20091321
RTT 610	20091325
RTT 663	20091326
RTT 715	20091329
RTT 773	20091334
RTT 831	20091335
RTT 878	20091337
RTT 930	20091339

ACCESSORIES

For the RTT 378-930 r boilers the following accessories are available:

- a. Two stage kit – 4031067
- b. Storage heater probe – 20010103

Dear client,

Thank you for choosing a **RIELLO** boiler, a modern and high quality product, providing you with the utmost well-being and with a high level of reliability and safety; and this is particularly the case if entrusted to a **RIELLO** Technical Assistance Centre which is specifically capable of carrying out routine maintenance, keep it running at maximum efficiency, with low running costs and which has original spare parts if required.

This instruction booklet contains important information and suggestions that should be observed for easy installation and better use of the RTT 378-930 boiler.

Thank you once again
Riello S.p.A.

CONFORMITY

The RTT 378-930 r boilers comply with:

- 2009/142/EC (ex 90/396/EEC-Gas Directive)
- 92/42/EEC (Efficiency Directive)
- 2006/95/EC (ex 73/23/EEC-Low voltage Directive)
- 2004/108/EC (ex 89/336/EEC-Electromagnetic Compatibility Directive)
- EN 303/1-2-3
- EN 60335-1/2
- EN55014-1/2
- EN 61000

In some parts of the booklet, some symbols are used:



= for actions requiring special care and adequate preparation



= for actions THAT MUST NOT be performed

This booklet, Cod. Doc-0079324 - Rev. 1 (03/2016) is composed of 12 pages.

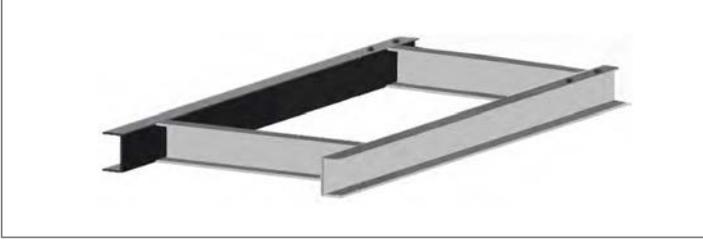
1.1 INSTALLATION SPECIFICATIONS OF RTT CAST IRON BOILERS

This manual is for personnel authorised and qualified to install and provide technical assistance both domestically and overseas and should be used in order to correctly install the cast iron boiler.

-  The technical personnel should always put the machine in a safe condition both before and during installation.
-  In order to avoid injury, pay particular attention in transporting the heavy cast iron sections, both before and during the assembly and installation.
-  before starting the installation, check both the boiler room and the support plate. If they have any defects, do not start the installation until they have been resolved.
-  Before installing the appliance, carefully read and understand this manual.
-  The components and the equipment for the installation are supplied together with the boiler. They include also the silicon for the assembly, the silicon applicator, the fittings, the protective gloves and the dust mask.
-  Do not damage the boiler body and the coating of the casing during and after the installation and in the burner and gas flue pipe connection phase. Instruct also the other technicians in this regard.
-  If there are any questions about the installation, contact the manufacturer or the technical assistance centre.
-  The installation of the cast iron boilers requires at least 2 people.
-  If the boiler is installed correctly it will have a long life.

Thank you for taking the time to read our warnings and our advice and we wish you the best of success in your work.

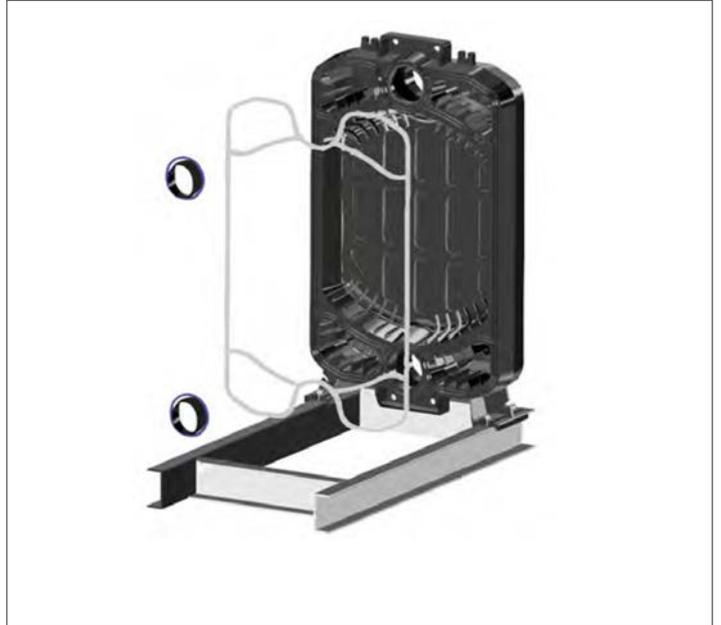
- Install the frame for assembling the boiler (with the equipped part facing the other and facing back) on the concrete plate.
- The concrete plate should be flat to ensure the boiler will be stable.



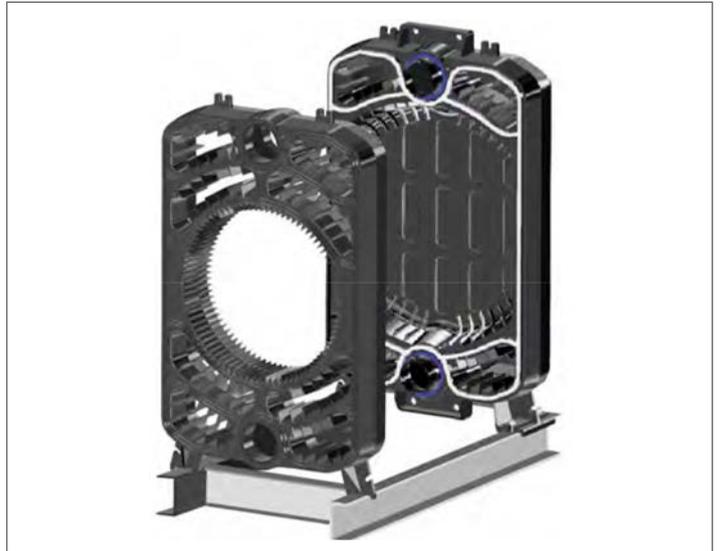
- Position the rear section of the boiler on the frame vertically. The holes on it should line up with those on the frame. Fix it using 4 M12x50 mm nuts.
- For a simpler assembly, insert the bolts from the bottom and place the nuts on top.



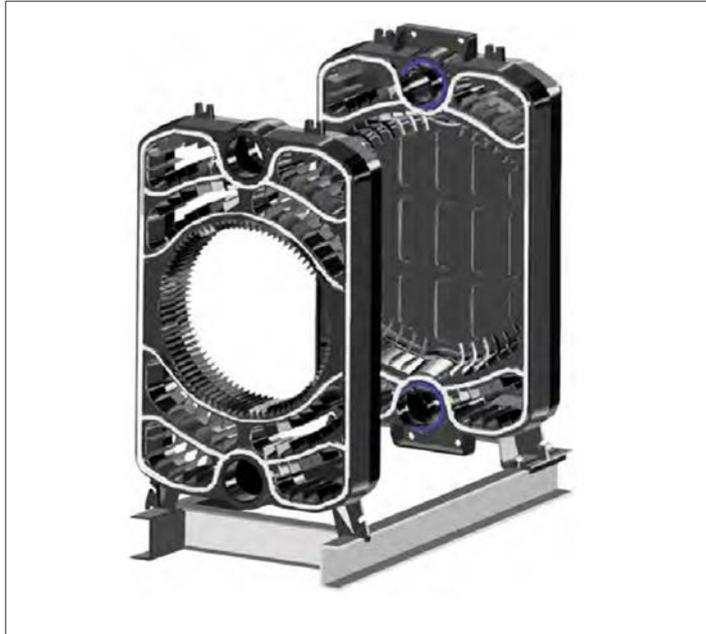
- Clean the grooved flue gas seal of the rear section with a brush or a cloth, then insert the silicon.
- Glue the insulating cord supplied in the grooving as shown in the figure, using the silicon already inserted.
- Put the waterproof gaskets on the axle coupling, then insert it into the relative hole.
- For a simpler assembly, it is possible to use silicon to prevent the O-ring or the fitting falling.



- For a simpler assembly, glue the insulating cords onto the grooves of the cast iron sections before assembling them.
- The insulating cords should be applied carefully to the relative grooves.
- There should be no empty spaces at the connection points of the insulating cords.



- After applying the insulating cord, the axle connection and the O-ring to the rear section, install the intermediate section sliding it on the frame.
- The intermediate section with the hole for the thermostat should be installed second, before the front one (section number 3).
- Connect the M10x 240 section fixing pins to the assembly brackets balancing them, then connect the intermediate section to the rear one.
- The section fixing pins are used for their assembly. They are not insulating elements that can prevent leaks.



- Repeat the operation a number of times that is suitable for the capacity, namely for the number of intermediate sections of the boiler. In this way fit all the intermediate sections.



- After installing the intermediate sections, do the same also for the front section.
- The insulating cord applied to the grooved flue gas seal profile of the last intermediate section (the one right before the front section) cannot be installed in the pipes between the 2nd and 3rd pass of the flue gases.



- Connect the boiler-fixing pins after finishing installing all the sections.
- Connect 4 boiler fixing pins using the stabilisation holes on the front and rear sections. Put in the nuts and bolts and screw them in so as to balance them.
- Tightening torque: 6 kg·m

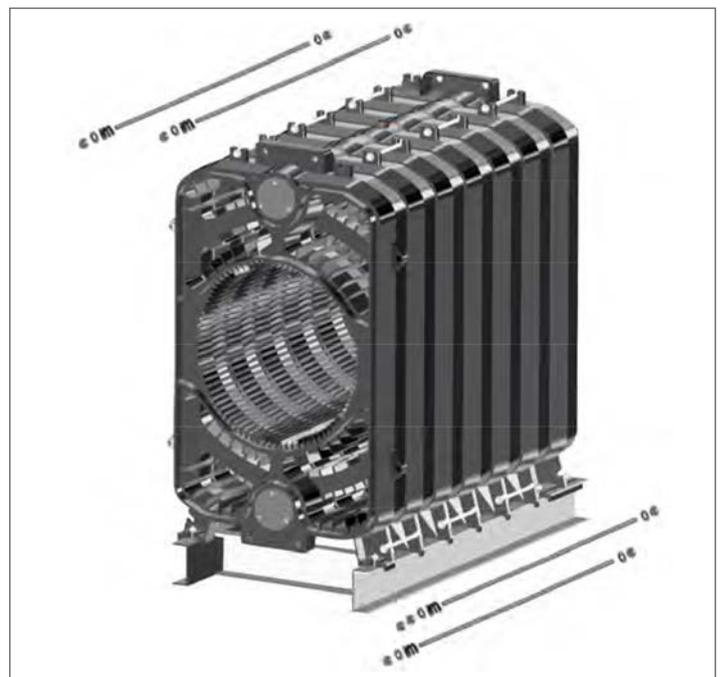
The section fixing pins should never be removed. These pins will be used for installing the casing.

Assembling the expanding springs:

- Remove the 4 fixing pins in the front part and the relative nuts one at a time, and put in the expanding springs. The screw back in the nuts and bolts.

Tightening torque: 3 kg·m

- Put in the expanding springs one at a time.



- Insert the expanding springs, nuts and bolts as indicated in the figure below.
- The distance of the spring joints should be about 0.5 mm.
- After installing the sections and the boiler-fixing pins, fit the rear door of the boiler's discharge pipe and the water inlet-outlet attachments.



- After installing the boiler's water inlet and outlet attachments, check that the appliance is waterproof by putting in water for 10 minutes at a pressure of 9 bar without connecting the front door of the burner.

Results of the test:

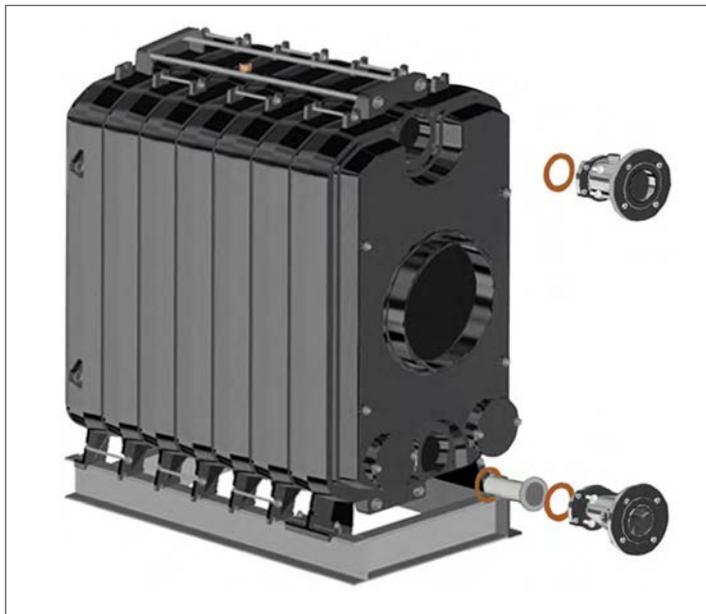
- If leaks are detected, repair the boiler, finding the place where the boiler is leaking. If there are no leaks, begin fitting the retarder turbulators.



- 1 = COMBUSTION GASES OF THE BOILER (1st PASS)
- 2 = COMBUSTION GASES OF THE BOILER (2nd PASS)
- 3 = COMBUSTION GASES OF THE BOILER (3rd PASS)

- To prevent leaks, fit the boiler's discharge pipe rear door fixing it with 4 M12 x 95 pins.
- To prevent leaks, fit the water inlet-outlet connections using the washers and fix them with 4 bolts.
- Fit the water inlet attachment (connection on the bottom) so that the 1 1/2" discharge valve is facing down or toward the sides.
- Fit the water inlet attachment inserting in order the coupling washer, the pipe with flange, the washer and the attachment.
- The 1 1/2" outlet attachment should be facing up or towards the sides.

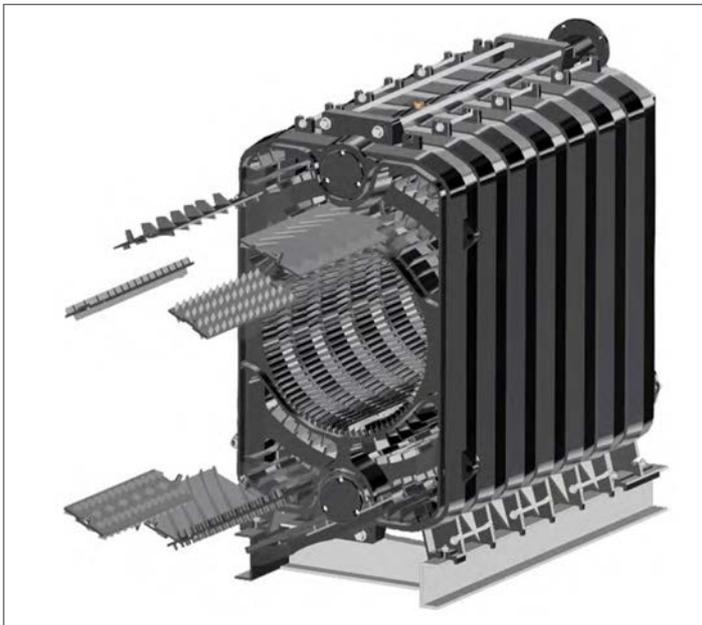
- Install the retarder turbulators in the pipes as shown in the table.
- Install 2 small turbulators in each pipe of the 2nd pass of the flue gases. The large turbulators need to be inserted in the pipes of the 3rd pass of the flue gases.



- Insert the turbulators in the passage starting with the front section.

Model	Second pass	Third pass
RTT 378	1+1+1+1	1+1+1+1
RTT 448	1+1+1+1	1+1+1+1
RTT 506	1+1+1+1	1+1+1+1
RTT 564	1+1+1+1	1+1+1+1
RTT 610	1+1+1+1	1+1+1+1
RTT 663	1+1+1+1	1+1+1+1
RTT 715	1+1+1+1	1+1+1+1
RTT 773	1+1+1+1	none
RTT 831	1+1+1+1	none
RTT 878	none	none
RTT 930	none	none

- Insert the turbulators through the intermediate part of the front section.

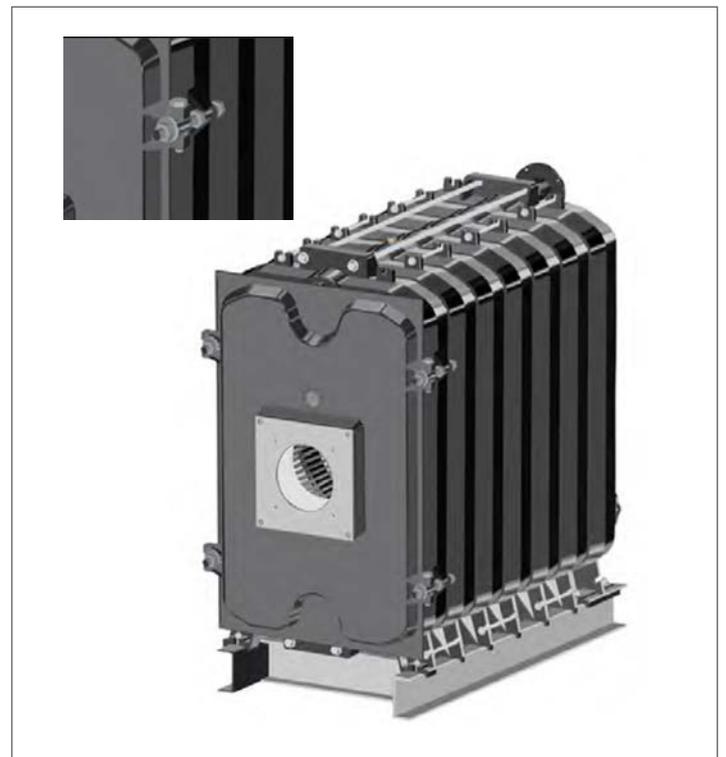


After installing the turbulators in the flue gases pipes of the boiler, fit the burner door to the front section.

- Connect 4 hinges of the front section to the arms of the hinges on the burner door.
- Attach the door, fixing it with 4 M10x80 mm bolts according to the side you want to open and based on the hydraulic connections and the boiler room.
- After inserting the bolts, fix them with 4 M16 nuts and bolts and screw them in balancing them.
- To prevent leaks, do not leave any space between the burner door and the front section.



- After installing the boiler body and after carrying out the waterproof test, to prevent leaks of flue gas apply Blakite® between the sections (supplied with the other components to be assembled).



- To install the walls of the casing, connect the assembly brackets of the casing to the pins on the feet of the boiler.
- Connect the assembly brackets of the casing walls to the pins used for connecting the sections, as shown in the figure. Then fix the pins.



- Table 2 shows the assembly brackets needed for the sections and for the casing walls.
- After connecting the brackets of the walls of the casing on both sides of the boiler body, fix the assembly shelves of the casing walls on the top part of the boiler body.
- If there are no fixing pins for connecting the brackets and the shelves on the section, take these pins from other sections.



Table (2) – Assembly Brackets Table

Model	Detail of casing assembly	Casing length	Number of casing assembly brackets	Section numbers for connecting assembly brackets
RTT 378	4+2	1090	6	1.2+3.4+5.6
RTT 448	4+3	1,250	6	1.2.+4.5+6.7.
RTT 506	4+4	1,410	6	1.2.+4.5.+7.8.
RTT 564	4+5	1,570	6	1.2.+4.5.+8.9.
RTT 610	5+5	1,730	6	1.2.+5.6.+9.10.
RTT 663	6+5	1,890	6	1.2.+6.7.+10.11.
RTT 715	4+middle+3	2,050	8	1.2.+4.5.+9.10.+11.12.
RTT 773	5+middle+3	2,210	8	1.2+5.6.+10.11.+12.13.
RTT 831	5+middle+4	2,370	8	1.2.+5.6.+10.11.+13.14.
RTT 878	5+middle+5	2,530	8	1.2.+5.6.+10.11.+14.15.
RTT 930	6+middle+5	2,690	8	1.2.+6.7.+11.12.+15.16.

Table (3) – Assembly Shelves Table

Model	Detail of casing assembly	Casing length	Number of casing assembly shelves	Section numbers for connecting assembly shelves
RTT 378	4+2	1,090	3	front+4.5+back
RTT 448	4+3	1,250	3	FRONT S.+4.5.+BACK S.
RTT 506	4+4	1,410	3	FRONT S.+4.5.+BACK S.
RTT 564	4+5	1,570	3	FRONT S.+4.5.+BACK S.
RTT 610	5+5	1,730	3	FRONT S.+5.6.+BACK S.
RTT 663	6+5	1,890	3	FRONT S.+6.7.+BACK S.
RTT 715	4+middle+3	2,050	4	F.S.+4.5.+9.10.+D.B.
RTT 773	5+middle+3	2,210	4	F.S.+5.6.+10.11.+D.B.
RTT 831	5+middle+4	2,370	4	F.S.+5.6.+10.11.+D.B.
RTT 878	5+middle+5	2,530	4	F.S.+5.6.+10.11.+D.B.
RTT 930	6+middle+5	2,690	4	F.S.+6.7.+11.12.+D.B.

- Connect the assembly shelves of the casing's walls to the fixing pins at the top as shown in the figure. Then fix the nuts, tightening them slightly to keep them in position.



- After installing the brackets and shelves of the casing walls, apply the insulation and the walls of the casing onto the boiler body.



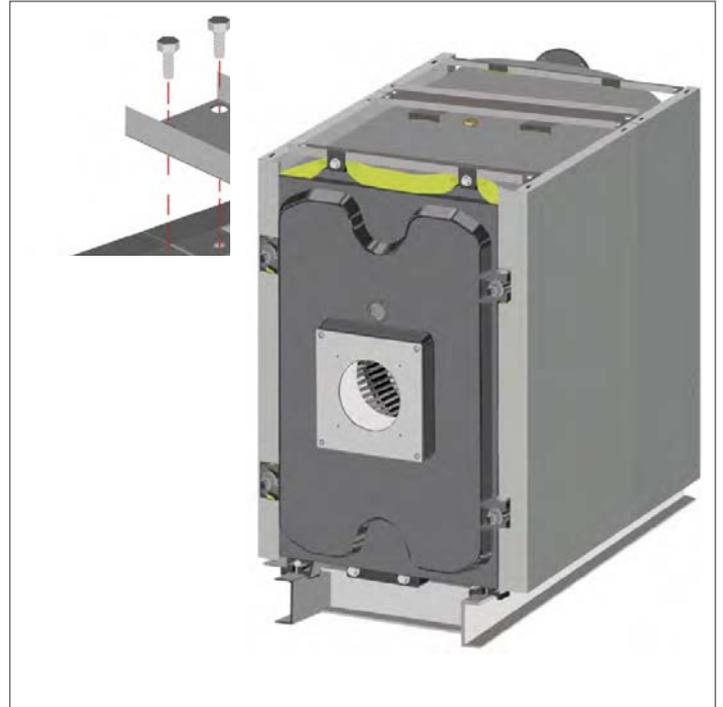
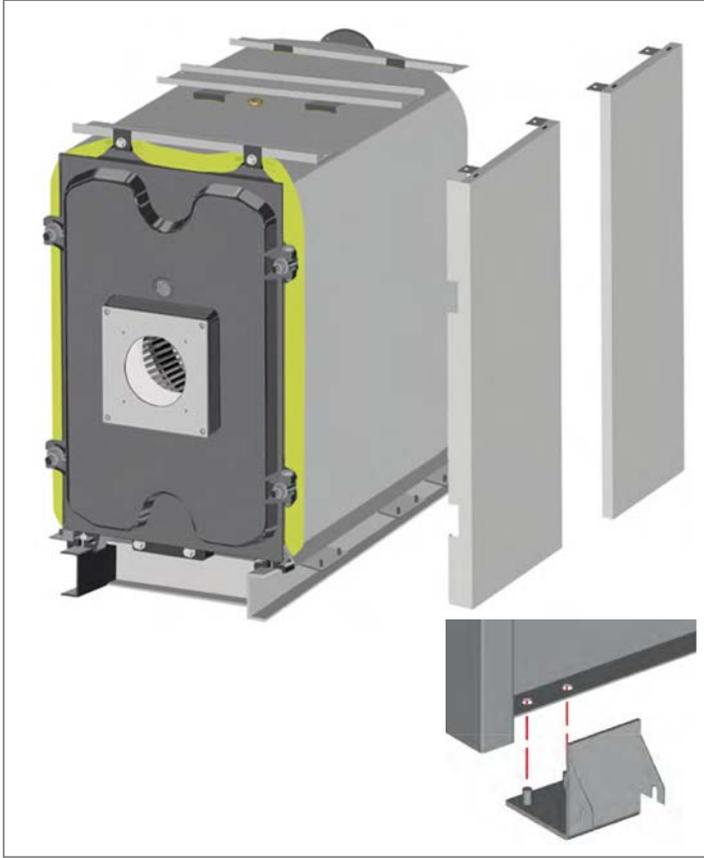
- Prepare 8 cm of insulation for the boiler body based on the dimensions of the appliance and apply it to the boiler body.



- Cut the insulation around the points connecting the assembly shelves.
- Cut the insulation around the opening for the thermostat socket.
- Use a 2 point stainless steel wire to connect the insulation to the boiler body in such a way that it is stable.



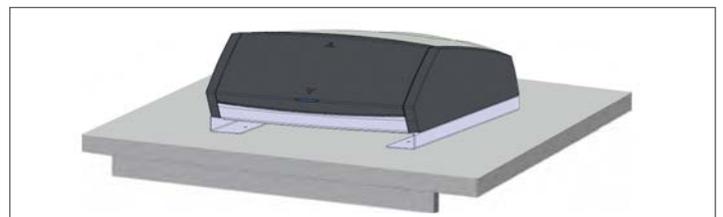
- Line up the holes on the walls of the casing first with the pins on the assembly brackets and then with the assembly shelves of the casing walls, fixing them with two M8x20 bolts as shown in the figure.
- Proceed in the same way for the installation on the boiler body of the additional walls of the right and left casing.



After installing the side walls, connect the control panel on the top front wall of the casing.



- Insert the thermocouples (sensors) of the control panel (thermostat, safety thermostat, thermometer) in the slots of the panel.
- Rest the two support brackets on the top panel, with the side with more holes facing upwards and lining up the holes of the bottom side of the bracket with those of the cover panel.
- Fix each bracket with three self-tapping screws 4.2x9.5 (not supplied).
- Remove the cover of the electrical panel.
- Place the base of the control panel on the support brackets, matching up the holes, then use six self-tapping screws (supplied with the electrical panel) to secure it.
- After inserting the ends of the sensors, secure them so they do not come out, then put back the cover of the control panel on the base.
- Put the oil supplied in the hole of the thermostat so as to improve the sensitivity of the sensors.





- After installing the side and top walls of the casing, install the rear one.



- Apply the insulation to the rear wall of the casing and fix it to the side walls with the screws so that the open side is facing upwards, as shown in the figure (4 screws for the right side, 4 for the left side and 3 screws for the central connection point).



- Once this operation has been carried out, the installation of the casing walls is complete.



- At this point the boiler is ready for the installation of the burner and for the flue gases pipe connections.
- The connections to the burner, to the flue gases pipe and to the system should be carried out by authorised technicians in full compliance with regulations in force and the specifications contained in the use and maintenance manuals.



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