

# RTT 163-355

EN ASSEMBLY MANUAL

**RIELLO**

## RANGE

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MODEL	CODE
RTT 163	20091302
RTT 195	20091303
RTT 227	20091304
RTT 259	20091305
RTT 291	20091306
RTT 323	20091308
RTT 355	20091309

## ACCESSORIES

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For the RTT 163-355 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 163-355 boiler.

Thank you once again  
Riello S.p.A.

## CONFORMITY

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The RTT 163-355 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-0079322 – Rev. 0 (03/2016) is composed of 12 pages.

## 1.1 INSTALLATION SPECIFICATIONS OF RTT CAST IRON BOILERS

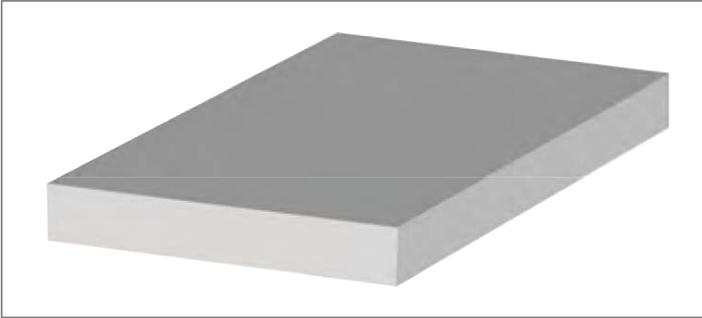
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This installation manual is for certified and authorised installers and technical assistance personnel, operating domestically and abroad. The manual has the purpose that the cast iron boiler is installed correctly.

-  Make sure that the room where the installation will occur is suitable for the minimum dimensions set out in the burner's instruction booklet and that the base on which the boiler will sit is adequate for its weight and dimensions.
-  It is the responsibility of the installers to ensure the necessary safety conditions during all the assembly and installation phases; if the conditions are not optimal, adopt the necessary corrective measures before starting the installation.
-  The installation of the ON range cast iron boilers requires at least 2 people, pay particular attention to the handling of heavy components, in order to prevent the risk of injury to people and damage to objects.
-  The boiler is supplied with all its components and some installation equipment, the following assembly material is included: silicon, applicator, brush, sealant for couplings, Blakite, gloves and face mask
-  Carefully read the manual before installation, for any clarifications do not hesitate to contact the technicians of the manufacturer or the retailer.
-  Be careful not to damage the painted components (body and boiler cladding) when handling, assembling and when connecting the burner and the flue gas pipe. Make sure that all the technicians are aware of these warnings.

Thanking you for taking the time needed to read these instructions, we hope your installation goes well and we would like to remind you that a good installation will ensure the boiler continues to run well over time.

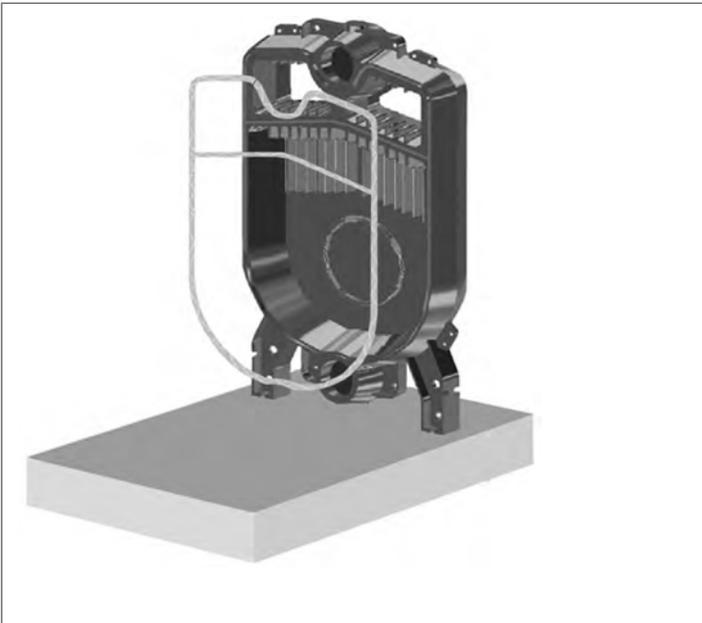
- If you do not have one, create a base suitable for the weight and size of the boiler it needs to support, respecting the provisions and the dimensions indicated in the technical manual.



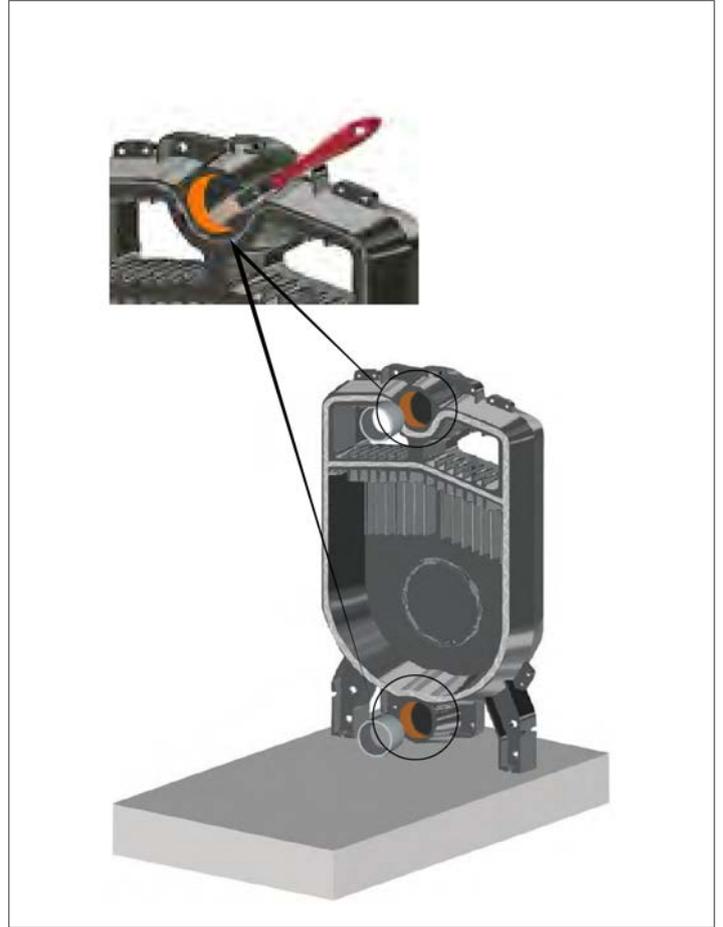
- Fix the rear element on the boiler base to the ground using dowels.



- Clean the grooved profile of the flue gas seal of the rear element with a brush or with a cloth and then fill it with silicon.
- Insert the insulating cord already ready in the groove as shown in the illustration and fix it with the silicon that was applied previously.
- (Repeat the operations for the successive elements).



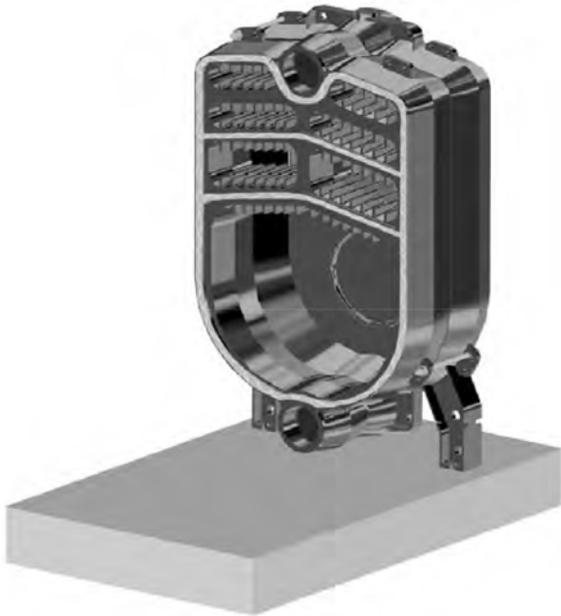
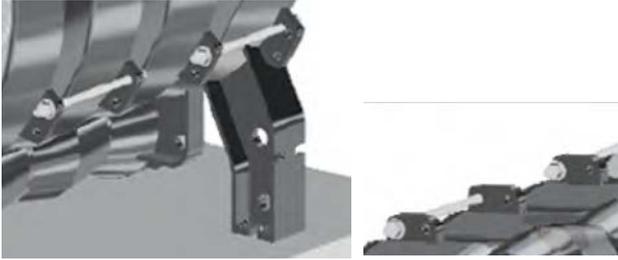
- Clean the housings of the fittings of the rear element and put the sealing coating on them (in orange) to improve their seal.
- (Repeat the same operations for all the intermediate elements and the front element).



- Clean the surfaces of the couplings and apply the sealant coating on the surfaces that come into contact with the rear element to enhance the seal.
- (Repeat the operations for the all the couplings).

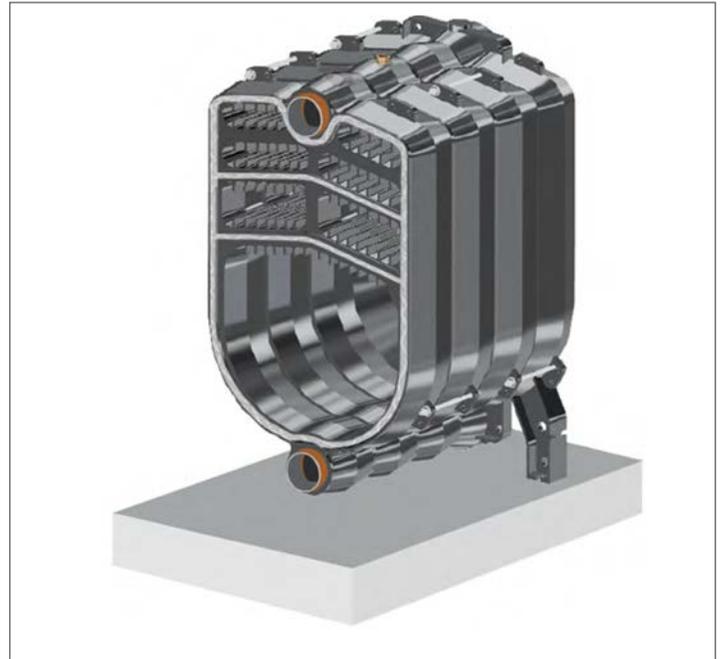


- Pass the tie-rods (M10 x 200) into the assembly holes of the rear element and the intermediate element.
- Using an M10 wrench, tighten the nuts at the ends of the pins to bring the elements closer and in contact.



- Depending on the boiler model (number of intermediate elements), the assembly operations described will have to be repeated for each of the unnumbered intermediate elements.
- The last two intermediate elements are always marked by the numbers 3, 2. Once the assembly of the unnumbered intermediate elements has been completed, mount the intermediate element with the number 3, followed by the intermediate element 2. For clarification of the assembly sequence, see the figure

**!** The intermediate element with the number 3 that contains the thermostat housing should necessarily be assembled in the third row from the front side.



The front element, marked with the number 1, is the last one to be fitted.



Insert the M16 locking tie-rods into the relative holes and tighten the nuts at the ends to bring the elements closer to each other.

Tightening torque: 7 kg·m



- The flue gas pipe is fixed using 2 threaded bars, washers and nuts.
- The size of the flue gas pipe varies according to the following table:

Boiler model	Flue gas pipe dimensions
RTT 163	180
RTT 195	180
RTT 227	180
RTT 259	250
RTT 291	250
RTT 323	250
RTT 355	250

Assembling the flanges:

- Apply the silicon to the flat flange seal and stick it to the mounting surface of the rear element. Insert the assembly screws into the flat flange and with these fix the flange to the boiler outlet (top side) tightening the lock nuts. The Thermix flange should be connected to the lower side of the rear element (return) as shown in the figure.



- Once the flanges have been assembled, pass over the outer surfaces of all the boiler elements with Blakite stucco.
- Fill the body of the boiler with water and carry out a hydraulic seal test lasting 10 minutes at a pressure lower than 9 bar.
- Check the gas seal along the lines of contact between the elements. This check can be carried out with a mobile light or a projector. Light the inside of the boiler and observe it from the outside. Apply Blakite to the points that let light filter through to the outside.



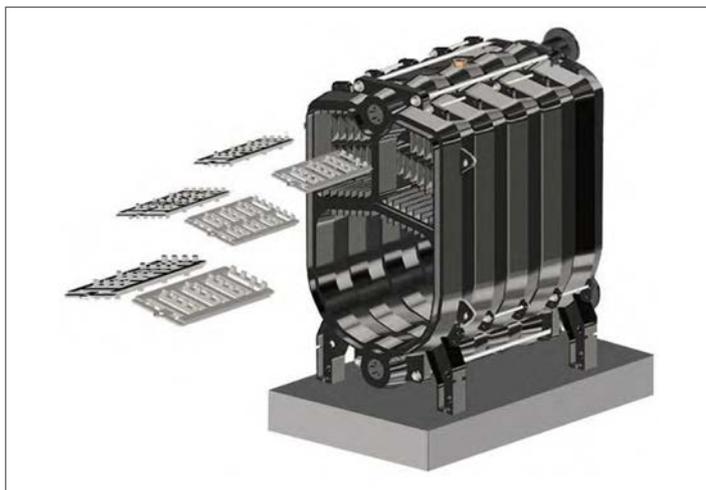
- The door of the boiler burner should be fitted after the turbulators have been installed.
- Insert the 4 tie-rods of the hinges of the door in the relative holes on the front element. Connect the door of the burner to the tie-rods inserted in the hinges, fit the washers and tighten the lock nuts until the pressure of the insulating cord can be felt on the profile of the front element.
- Insert 2 screws M10 x 75 in the top part of the hinges taking into account the door the side should open from.



- Installation of the retarder turbulators:

Boiler model	Second pass	Third pass	
		Lower	Upper
RTT 163	2 large	2 medium	2 small
RTT 195	2 large	2 medium	2 small
RTT 227	2 large	2 medium	2 small
RTT 259	2 large	2 medium	2 small
RTT 291	2 large	2 medium	2 small
RTT 323	2 large	2 medium	2 small
RTT 355	2 large	2 medium	2 small

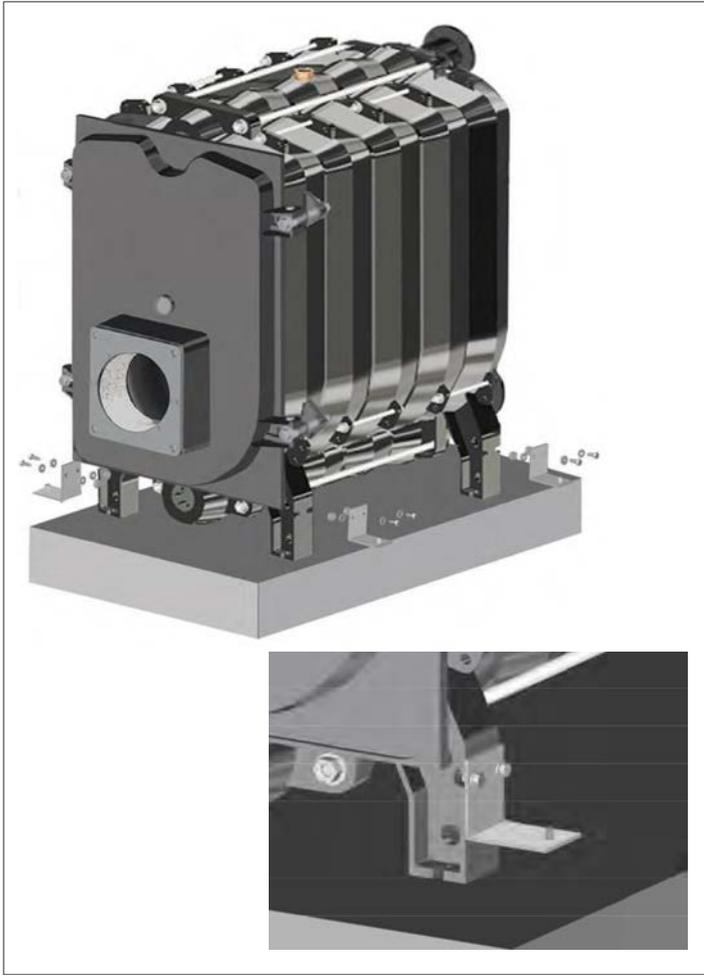
- The front edge of the turbulators should not exceed the mid point of the front element during positioning.
- The number of turbulators per boiler should be as indicated in the table.



- The burner door should be raised slightly during opening and closing (bringing the door attachments above the height of the hinges)
- The installation of the casing will begin after finishing the assembly of the body.



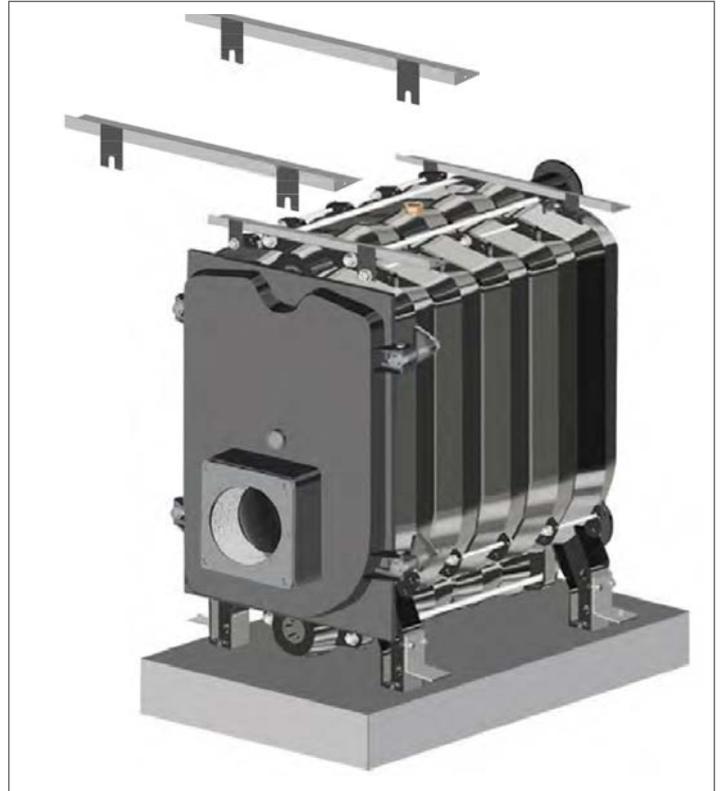
- First of all, fix the casing's assembly bracket to the front and rear feet of the boiler.



- Connect each assembly bracket of the casing to the foot of the boiler inserting two M8 x 25 screws in the holes of the foot, as shown in the figure. Then tighten the screws, locking them with nuts and washers.
- After fixing the four brackets, proceed with fitting the top shelves.



- For the assembly of the two shelves, use the holes in the front element and on the rear element of the boiler body, as shown in the figure. As fixing devices use the assembly pins of the elements (slacken and tighten the nuts locking the pins in the elements).



- After installing the brackets and the assembly shelves of the shell, proceed with applying the insulation on the cast iron body.
- The insulation of the body should be shaped to create the housing for the thermostat. Use a 2 point stainless steel wire to connect the insulation to the boiler body in such a way that it is stable.
- Join the side panels to the pins on the brackets of the feet and screw them to the top shelves with M8x20 screws as shown in the figure.



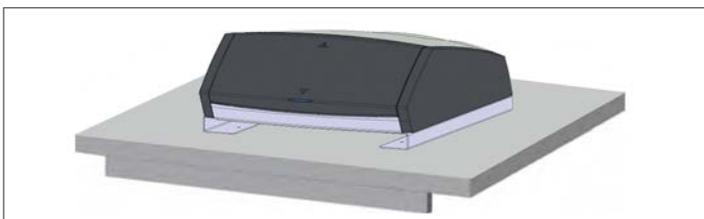
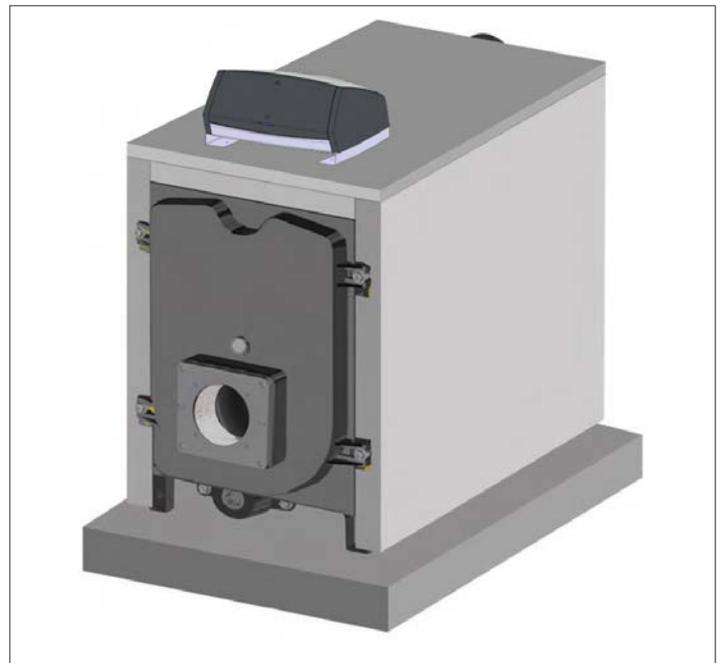


- After installing the side walls, connect the control panel on the top front wall of the casing.

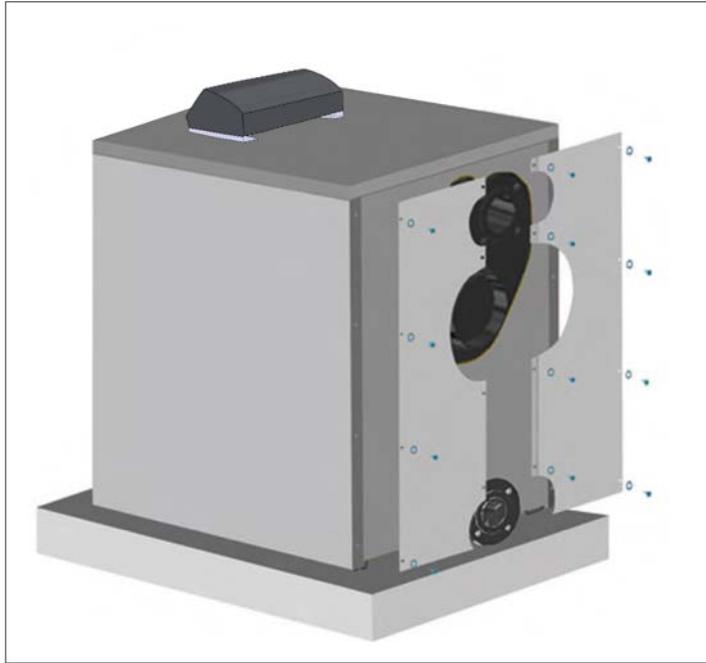


- Fit the top panel into the slots of the casing by inserting the four pins into the corresponding holes on the side panels.

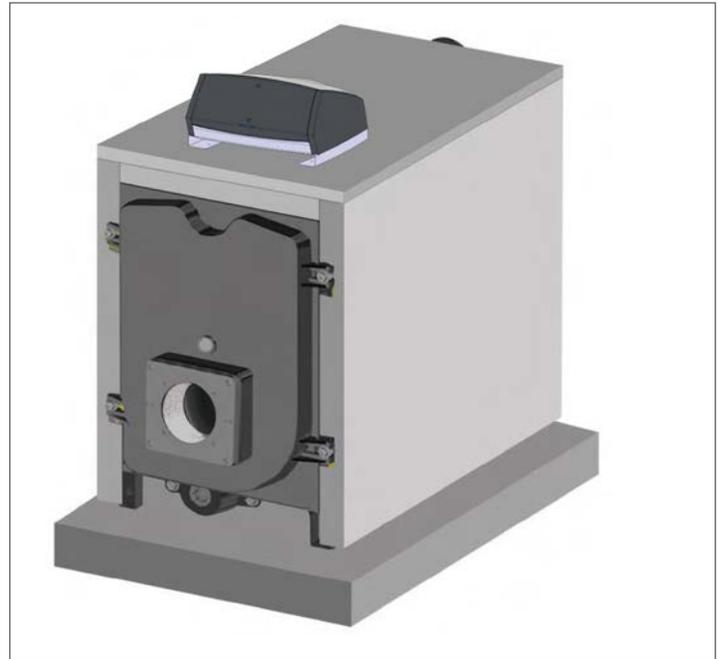
- Insert the thermocouples (sensors) of the control panel (thermostat, safety thermostat, thermometer) in the slots of the panel.
- Rest the two support brackets on the top panel, with the side with more holes facing upwards and lining up the holes of the bottom side of the bracket with those of the 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.



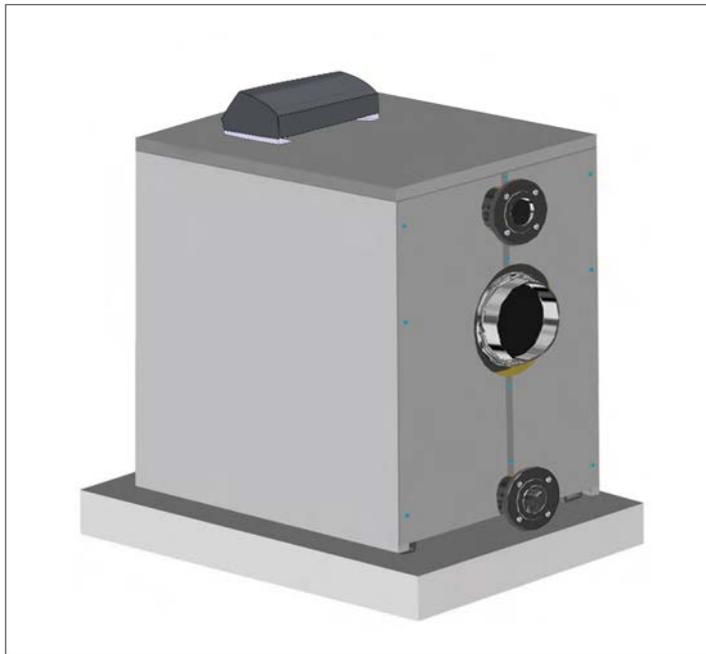
- After fitting the top and side panels of the casing, proceed to install the rear insulating panel.
- The rear cover panel is composed of two parts that should be fixed with screws to the side panels.



- Once the assembly of the body, the control unit and the casing is finished, the boiler is ready for the installation of the burner and the connections to the system and to the flue gas pipe.
- The installation of the burner and the connections to the system and the flue gas pipe should be carried out by an authorised technician, in conformity with the regulations and specifications contained in the use and maintenance manual.



- The assembly is finished with the installation of the rear panel cover.





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