



Installation, use and maintenance manual

Supercromo

Independent gas-fired convectors with direct exchange to heat small and medium sized rooms

Fired by natural gas/LPG



DISPOSAL

The appliance and all its accessories must be disposed of separately in accordance with the regulations in force.



Use of the WEEE symbol (Waste Electrical and Electronic Equipment) indicates that this product cannot be disposed of as household waste. Proper disposal of this product helps to prevent potential negative consequences for the environment and human health.

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Code: D-LBR106

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I INTRODUCTION



Installation, use and maintenance manual

This Manual is an integral part of the Supercromo appliance and must be handed to the end user together with the appliance.

I.1 RECIPIENTS

This Manual is intended for:

- ▶ End user, for appropriate and safe use of the appliance.
- ▶ Qualified installer, for correct appliance installation.
- ▶ Planner, for specific information on the appliance.

II SYMBOLS AND DEFINITIONS

II.1 KEY TO SYMBOLS



DANGER



WARNING



NOTE



PROCEDURE



REFERENCE (to other document)

II.2 TERMS AND DEFINITIONS

Appliance/Unit = equivalent terms, both used to refer to the independent direct exchange gas-fired convector.

TAC = Technical Assistance Centre authorised by Robur.

First start-up = appliance commissioning operation which may only and exclusively be carried out by a TAC.

III WARNINGS

III.1 GENERAL AND SAFETY WARNINGS



Installer's qualifications

Installation must exclusively be performed by a qualified firm and by skilled personnel, with specific knowledge on heating, electrical systems and gas appliances, in compliance with the laws in force in the Country of installation.



Declaration of conformity

Upon completing installation, the installing firm shall issue to the owner/client the appliance's workmanlike conformity declaration, according to national/local regulations in force and the manufacturer's instructions/provisions.



Misuse

The appliance must only be used for the purposes for which it has been designed. Any other use is deemed hazardous. Incorrect use may affect operation, duration and safety of the appliance. Adhere to the manufacturer's instructions.



Use of the appliance by children

The appliance can be used by children over 8 years old, and by people with reduced physical, sensory or mental capabilities, or lack of experience or

knowledge, only if they are under surveillance or after they have received instructions regarding safe use of the appliance and understanding the dangers inherent in it. Children should not play with the appliance.



Hazardous situations

- Do not start the appliance in hazardous conditions, such as: gas smell, problems with the electrical/gas system, parts of the appliance under water or damaged, malfunctioning, disabling or bypassing control and safety devices.
- In case of danger, request intervention by qualified personnel.
- In case of danger, switch off the electrical power and gas supplies only if this can be done in total safety.
- Do not entrust children, persons with physical, sensory or mental disabilities or persons with poor knowledge and experience with use of the appliance.



Gas component tightness

- Before performing any operation on gas ducting components, close the gas valve.
- Upon completing any procedure, perform the tightness test according to regulations in force.



Gas smell

If you smell gas:

- Do not use electrical devices such as telephones, multimeters or other equipment that may cause sparks next to the appliance.
- Shut off the gas supply by turning the valve off.
- Open immediately doors and windows to create a cross-current of air to ventilate the room.
- Switch off the power supply via the external disconnect switch in the power supply electrical panel.
- Use a telephone away from the appliance to ask for intervention from qualified personnel.



Poisoning

- Ensure the flue gas ducts are tight and compliant with the regulations in force.
- Upon completing any procedure, ensure the tightness of the components.



Moving parts

The appliance contains moving parts.

- Do not remove guards during operation, and in any case prior to disconnecting the power supply.



Burn hazard

The appliance contains very hot parts.

- Do not open the appliance and do not touch internal components before the appliance has cooled down.
- Do not touch the flue gas exhaust before it has cooled down.



Electrocution hazard

- Disconnect the electrical power supply before any operation on appliance components.
- For electrical connections exclusively use compliant components and according to the specifications provided by the manufacturer.
- Ensure the appliance cannot be accidentally switched back on.



Earthing

Electrical safety depends on effective earthing system, correctly connected to the appliance and installed according to the regulations in force.



Air flow

Do not obstruct the fan intake or the warm air outlet.



Distance from combustible or flammable materials

- Do not deposit flammable materials (paper, diluents, paints, etc.) near the appliance.
- Comply with current regulations.



Aggressive substances in the air

The air of the installation site must be free from aggressive substances.



Switching the appliance off

Disconnecting the power supply while the appliance is running may cause permanent damage to internal components.

- Except in the event of danger, do not disconnect the power supply to switch off the appliance, but always and exclusively act through the provided control device.



In the event of failure

Operations on internal components and repairs may exclusively be carried out by a TAC, using only original spare parts.

- In the event of failure of the appliance and/or breakage of any component, do not attempt to repair and/or restore and immediately contact the TAC.



Routine maintenance

Proper maintenance assures the efficiency and good operation of the appliance over time.

- Maintenance must be performed according to the manufacturer's instructions (see Chapter 7 p. 23) and in compliance with current regulations.
- Appliance maintenance and repairs may only be entrusted to firms legally authorised to work on gas appliances and systems.
- Enter into a maintenance contract with an authorised specialised firm for routine maintenance and for servicing in case of need.
- Use only original parts.



Keep the Manual

This Installation, use and maintenance manual must always accompany the appliance and must be handed to the new owner or installer in the event of sale or removal.

III.2 COMPLIANCE

EU directives and standards

The Supercromo series gas-fired convectors are certified in accordance with European regulation GAR 426/2016/EU and meet the essential requirements of the following Directives:

- ▶ 2016/426/EU "Gas Appliances Regulation" as amended and added.
- ▶ 2014/30/EC "Electromagnetic Compatibility Directive" as amended and added.
- ▶ 2014/35/EC "Low Voltage Directive" as amended and added.

- ▶ 2006/42/EC "Machine Directive" as amended and added.
- ▶ 2015/1186/EU "Energy labelling of local space heaters regulation" as amended and added.
- ▶ 2015/1188/EU "Ecodesign requirements for local space heaters regulation" as amended and added.

Furthermore, they comply with the requirements of the following standards:

- ▶ EN 1266 Independent gas-fired convection heaters incorporating a fan to assist transportation of combustion air and/or flue gases

Other applicable provisions and standards

The design, installation, operation and maintenance of the systems shall be carried out in compliance with current applicable regulations, depending on the Country and location, and in accordance with the manufacturer's instructions. In particular, regulations regarding the following shall be complied with:

- ▶ Gas systems and equipment.
- ▶ Electrical systems and equipment.
- ▶ Heating systems.
- ▶ Environmental protection and combustion products exhaust.
- ▶ Fire safety and prevention.
- ▶ Any other applicable law, standard and regulation.

III.3 EXCLUSIONS OF LIABILITY AND WARRANTY



Any contractual or extra-contractual liability of the manufacturer for any damage caused by incorrect installation and/or improper use and/or failure to comply with regulations and with the manufacturer's directions/instructions shall be disclaimed.



In particular, the warranty on the appliance may be rendered void by the following conditions:

- Incorrect installation.
- Misuse.
- Failure to comply with the manufacturer's indications on installation, use and maintenance.
- Alteration or modification of the product or any part thereof.
- Extreme operational conditions or however outside of the operational ranges set forth by the manufacturer.
- Damages caused by external agents such as salts, chlorine, sulphur or other chemical substances present in the air of the installation site.
- Abnormal actions transmitted to the appliance by the system or installation (mechanical stresses, pressure, vibrations, thermal expansion, electrical surges...).
- Accidental damages or due to force majeure.

1 FEATURES AND TECHNICAL DATA

1.1 FEATURES

1.1.1 Operation

The Supercromo gas-fired convector is an independent heating appliance with sealed combustion chamber and forced draught.

It has been designed to be installed inside the room to be heated.

It is suitable for operation with natural gas (G20) and LPG (G30/G31) (gas-fired convector belonging to category II_{2H3+} according to EN 1266).

The combustion air intake and the exhaust of flue gases take place outside via two coaxial pipes and are ensured by the operation of a blower placed in the combustion circuit. Therefore, the gas-fired convector must be installed on an external perimetral wall or close to it, depending on the maximum extension of the pipes (see Paragraph 3.4 p. 12).

The operation principle of the Supercromo gas-fired convector is based on a convective motion of room air that passes through the gas-fired convector from bottom to top, is heated and diffused into the room through the upper grille. The recirculation of the room air is facilitated by the presence of a fan placed in the lower part of the gas-fired convector.



For this reason, do not place clothes, newspapers or any other object that could obstruct the air outlet directly on the grille. Also make sure that curtains, backs of chairs or furniture are not placed at a distance of less than 30 cm from the gas-fired convector.

The operation of the gas-fired convector, very simple in itself, is made completely automatic by the thermostatic regulation and the programmable timer (standard in the 3002 model, optional in the 3001 model): the user is only required to switch on the gas-fired convector beforehand,

to choose the desired temperature (set on the regulation thermostat) and, for the 3002 model, the operating period (set on the programmable timer).

The sealed combustion chamber is the best guarantee of safety for the environment in which the gas-fired convector is installed: there is no possibility of the products of combustion leak, nor is the oxygen necessary for combustion taken from the environment. The appliance, once installed in accordance with the installation standards, does not require any ventilation openings in the room.

A flame detection device using an ionisation probe interrupts the gas supply in the event of an accidental shutdown.

1.1.2 Mechanical components

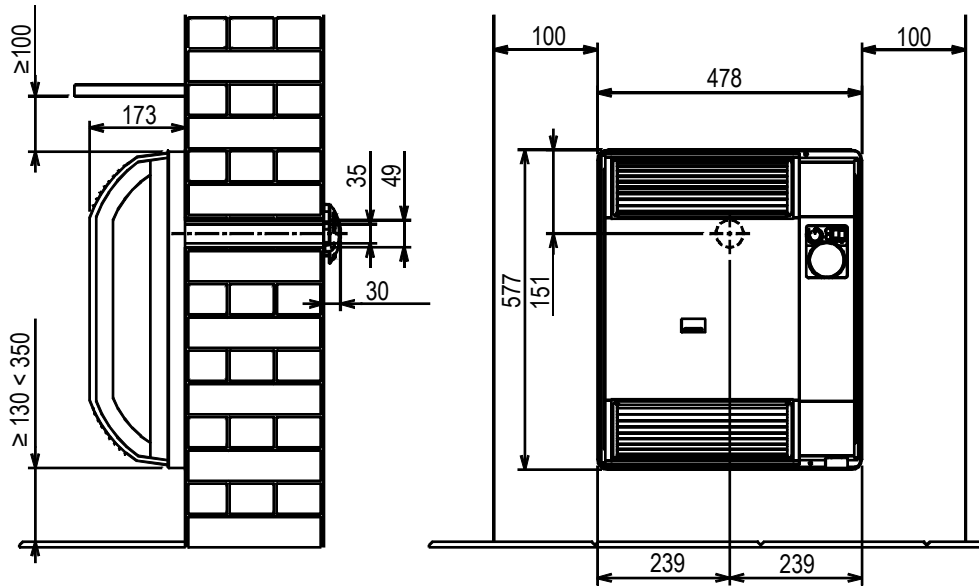
- ▶ Sealed combustion chamber.
- ▶ High-efficiency tubular steel heat exchanger.
- ▶ Centrifugal fan.
- ▶ Ø 49/35 mm coaxial combustion air intake and flue gas exhaust pipes.
- ▶ External windproof terminal in aluminium alloy (patented).
- ▶ Casing in epoxy powder-coated sheet metal.
- ▶ Support bracket for wall mounting.

1.1.3 Control and safety devices

- ▶ Electronic management board providing the following functions:
 - burner ignition
 - flame monitoring
 - blower management and control
 - fan control
 - heat exchanger temperature probe control
- ▶ Manual reset limit thermostat.
- ▶ Flue gas exhaust blower.
- ▶ Gas solenoid valve.
- ▶ Thermostat for setting the desired temperature.
- ▶ Programmable timer (standard on 3002 model, optional on 3001 model).

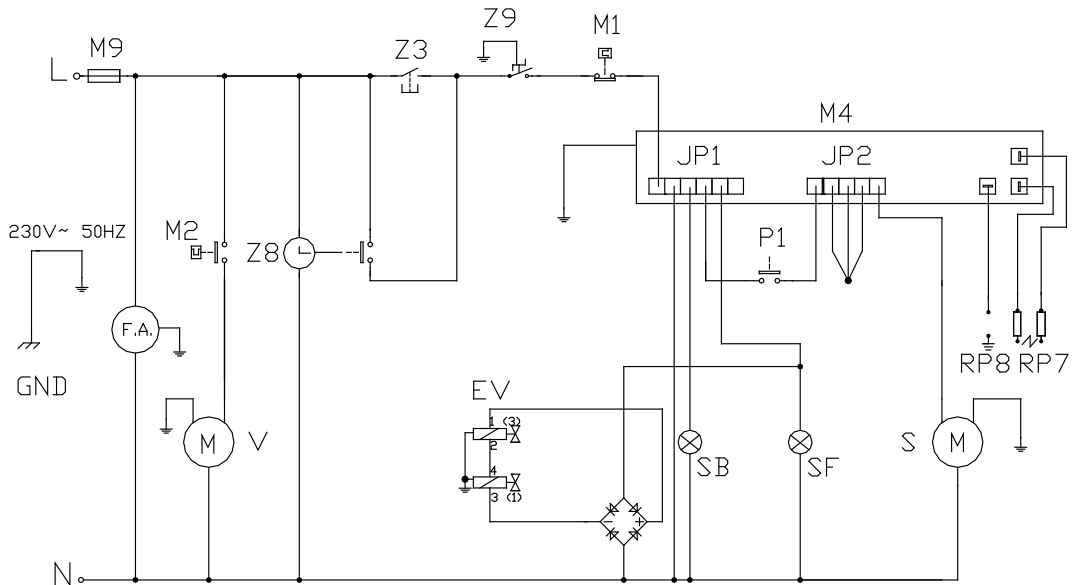
1.2 DIMENSIONS

Figure 1.1 Dimensions



1.3 ELECTRICAL WIRING DIAGRAM

Figure 1.2 Wiring diagram for models 3001 and 3002



EV	Gas valve (Power supply: terminals 1 and 3 - Serial connection of the coils: terminals 2 and 4)	RP8	Detection electrode
F.A.	Noise filter	S	Combustion air blower
L	Line	SB	Red lock-out signal light
M1	Limit thermostat	SF	Green operation signal light
M2	Fan thermostat	V	Fan
M4	Control unit	Z	Manual/programmed switch (present on 3002 model only)
M9	2 A fuse	Z8	Programmable timer (present on 3002 model only)
N	Neutral	Z9	Room thermostat
P1	Reset button	Z	Room thermostat
RP7	Ignition electrode	GND	Earth

1.4 CONTROLS

1.4.1 Control device

The operation of the appliance is regulated by the control

panel supplied as standard, which includes a thermostat for adjusting the temperature and a programmable timer (standard on 3002 model, optional on 3001 model).

For further information please refer to Paragraph 6.2 p. 20.

1.5 TECHNICAL DATA

Table 1.1 Technical data

			3001	3002
Heating mode				
Heat input	nominal (1013 mbar - 15 °C) (1)	kW	2,6	
Heat output	nominal	kW	2,3	
Efficiency	nominal heat input	%	90,0	
Electrical specifications				
Power supply	voltage	V	230	
	type	-	single-phase	
	frequency	Hz	50	
Electrical power absorption	nominal	kW	0,05	
Installation data				
Gas consumption	G20 natural gas (nominal)	m ³ /h	0,27	
	G25 (nominal)	m ³ /h	0,31	
	G30 (nominal)	kg/h	0,15	
	G31 (nominal)	kg/h	0,20	
Gas connection	type	-	M	
	thread	"	3/8	
Flue gas exhaust	diameter (Ø)	mm	50	
	type of installation	-	C13, C33, C63	
	residual head	Pa	25	
maximum equivalent length of coaxial exhaust duct		m	1	
sound power L_w (max)		dB(A)	47,5	
sound pressure L_p at 5 metres (max)		dB(A)	28,5	
Dimensions	width	mm	478	
	height	mm	577	
	depth	mm	173	
Weight	in operation	kg	17	

(1) Relative to NCV (net calorific value).

2 TRANSPORT AND POSITIONING

2.1 WARNINGS

Damage from transport or installation

The manufacturer shall not be liable for any damage during appliance transport and installation.

On-site inspection

- Upon arrival at the site, ensure there is no transport damage on packing.
- After removing the packing materials, ensure the appliance is intact and complete.

Packing

- Only remove the packing after placing the appliance on site.

- Do not leave parts of the packing within the reach of children (plastic, polystyrene, nails...) since they are potentially dangerous.



Weight

- The lifting equipment must be suitable for the load.
- Lift up the unit and secure it to its support bracket (Paragraph 3.5.1 p. 14).

2.2 HANDLING

2.2.1 Handling and lifting

- ▶ Always handle the appliance in its packing, as delivered by the factory.
- ▶ Comply with safety regulations at the installation site.

2.3 APPLIANCE POSITIONING

The appliance must be installed in the room to be heated.

2.3.1 Where to install the appliance

- ▶ The gas-fired convector must be installed on or near an external perimeter wall, respecting the distances indicated in Figure 1.1 *p. 8*.
- ▶ Avoid placement on walls or combustible materials without a suitable heat shield.
- ▶ Do not install the gas-fired convector over electrical boxes/switches or distribution cabinets that require periodic inspection.



Installation must not be made on walls with poor strength that do not guarantee adequate resistance to the stresses produced by the appliance. The manufacturer assumes no responsibility if the appliance is installed on surfaces or walls that are not suitable to support its weight.



The appliance's flue gas exhaust must not be immediately close to openings or air intakes of buildings, and must comply with safety and environmental regulations.



The flue gas exhaust terminal is accident-preventing

and requires no protection.

2.4 MINIMUM CLEARANCE DISTANCES

2.4.1 Distances from combustible or flammable materials

- ▶ Keep the appliance away from combustible or flammable materials or components, in compliance with applicable regulations.

2.4.2 Clearances around the appliance



The minimum clearance distances are required for safety, operation and maintenance.

- ▶ The minimum recommended distance from the gas-fired convector to the floor is 13 cm (Figure 1.1 *p. 8*) and possibly not more than 35 cm, as higher heights would result in uneven heat distribution in the heated room.
- ▶ Keep a minimum clearance of 10 cm from the sides of the gas-fired convector to any obstacles to allow for removal and refitting of the casing.
- ▶ If a shelf is to be installed above the gas-fired convector, leave a minimum clearance of 10 cm. No cover of any type may be installed over the appliance.

3 HEATING ENGINEER

3.1 WARNINGS

3.1.1 General warnings



Read the warnings in Chapter III.1 *p. 4*, providing important information on regulations and on safety.



Compliance with installation standards

Installation must comply with applicable regulations in force, based on the installation Country and site, in matters of safety, design, implementation and maintenance of:

- heating systems
- gas systems
- flue gas exhaust



Installation must also comply with the manufacturer's provisions.

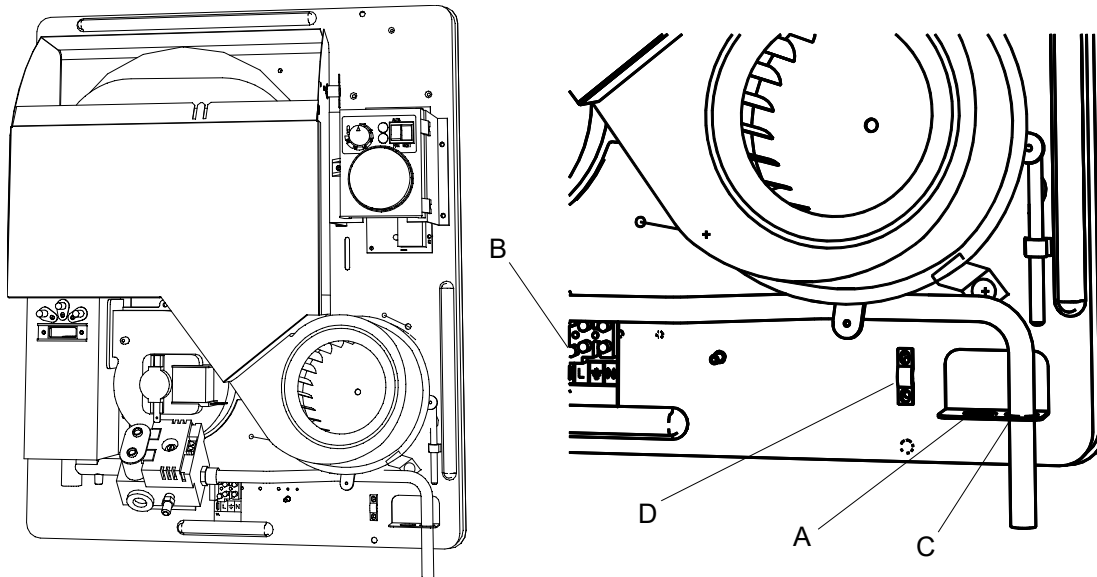
3.2 SUPPLIED MATERIAL

- ▶ Installation jig in cardboard.
- ▶ Wall support bracket.
- ▶ Air duct Ø 49 mm, length 500 mm.
- ▶ Flue gas duct Ø 35 mm, length 500 mm.
- ▶ External flue gas terminal in aluminium alloy.
- ▶ Rear sealing strip.
- ▶ Round gasket for combustion air.
- ▶ 3-pin plug for electrical connection.
- ▶ Screws and wall plugs.
- ▶ Documentation.

3.3 FUEL GAS SUPPLY


3.3.1 Gas connection


- ▶ 3/8" M on the right, at the bottom.
- ▶ The pipe required for connection is supplied with the appliance. Connect it to the gas valve through hole C (Figure 3.1 *p. 11*).
- ▶ Install an anti-vibration connection between the appliance and the gas piping.

Figure 3.1 Gas and power supply position

A Hole for power supply cable
B Terminal block

C Hole for gas pipe
D Cable gland bridge

 The connection to the gas mains must be made using a rigid copper or steel pipe and fittings; alternatively, a flexible stainless steel pipe conforming to the regulations in force may also be used.

 The connection to the gas pipe must be properly sealed to ensure tightness using a sealant that complies with EN 751-1 and EN 751-2. The connection must be made in such a way that no strain is produced in the pipe or gas-fired convector components.

3.3.2 Mandatory shut-off valve


- ▶ Provide a gas shut-off valve (manual) on the gas supply line, next to the appliance, to isolate it when required.
- ▶ Provide a three-piece pipe union.

- ▶ Perform connection in compliance with applicable regulations.

3.3.3 Gas pipes sizing

The gas pipes must not cause excessive pressure drops and, consequently, insufficient gas pressure for the appliance.

3.3.4 Supply gas pressure

 This appliance is equipped for a maximum gas supply pressure of 50 mbar.

The appliance's gas supply pressure, both static and dynamic, must comply with Table 3.1 *p. 11*, with tolerance $\pm 15\%$.


 Non compliant gas pressure (Table 3.1 *p. 11*) may damage the appliance and be hazardous.

Table 3.1 Network gas pressure

Product category	Countries of destination	Gas supply pressure [mbar]				
		G20	G25	G30	G31	G30 ↔ G31
II _{2H3B/P}	AT, BG, CZ, DK, EE, FI, HR, LT, LV, MK, RO, SE, SI, SK, TR	20		30	30	
	AT	20		50	50	
II _{2H3P}	BG, EE, HR, LT, SI, SK	20			37	
II _{2H3+}	CZ, ES, GB, GR, IE, IT, PT, SK	20				28-30 ↔ 37
II _{2Esi3+}	FR	20	25			28-30 ↔ 37
I ₃₊	FR, BE					28-30 ↔ 37
II _{2H3B/P}	HU	25		30	30	
	LU	20			50	
II _{2E3B/P}	PL	20		37	37	
	DE	20		50	50	
I _{2H}	LV	20				

The appliance gas supply pressure, both static and dynamic, must comply with the values in the Table, with a tolerance of $\pm 15\%$.

I _{3P}	NO			30	
I _{3B/P}	MT, CY		30	30	
I _{3B}			30		

The appliance gas supply pressure, both static and dynamic, must comply with the values in the Table, with a tolerance of ± 15%.

3.3.5 Vertical pipes and condensate

- ▶ Vertical gas pipes must be fitted with siphon and discharge of the condensate that may form inside the pipe.
- ▶ If needed, insulate the piping.

3.3.6 LPG pressure reducers

With LPG the following must be installed:

- ▶ A first stage pressure reducer, close to the liquid gas tank.
- ▶ A second stage pressure reducer, close to the appliance.



Pressure reducers must always be installed outside the building.

3.4 COMBUSTION PRODUCTS EXHAUST



Compliance with standards

The appliance is approved for connection to a combustion products exhaust duct for the types shown in Table 1.1 p. 9.

3.4.1 Flue gas exhaust and combustion air intake connection

- ▶ Ø 50 mm on the rear (Figure 1.1 p. 8)

3.4.2 Installation types

The flue gas exhaust/combustion air intake of the Supercromo gas-fired convectors can be realised in one of the following ways:

- ▶ With coaxial pipes with outlet on the installation wall (maximum pipe length: 1 metre) (see Figure 3.2 p. 12).
- ▶ With coaxial pipes with 90° outlet (max pipe length: 1 metre) (see Figure 3.3 p. 13). In this case, it is necessary to use the 90° casing for coaxial pipes, available as OCFF004 optional.
- ▶ With separate pipes (see Figure 3.4 p. 13). In this case, it is necessary to use the separate exhaust casing available as OCFF002 optional.



Warnings

- The installation of pipes with a vertical downward outlet is prohibited (leads to recirculation of flue gas with lock-out of the appliance).
- It is forbidden to install coaxial pipes with a vertical outlet upwards (due to rain, water, objects infiltration with consequent lock out of the appliance).

Figure 3.2 Installation with straight coaxial pipes

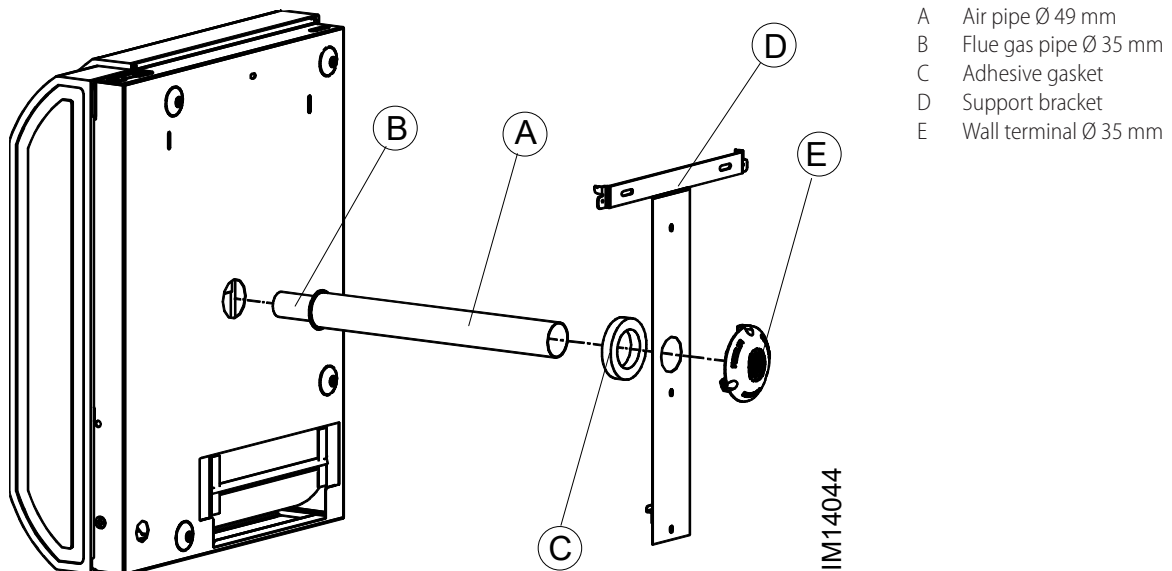
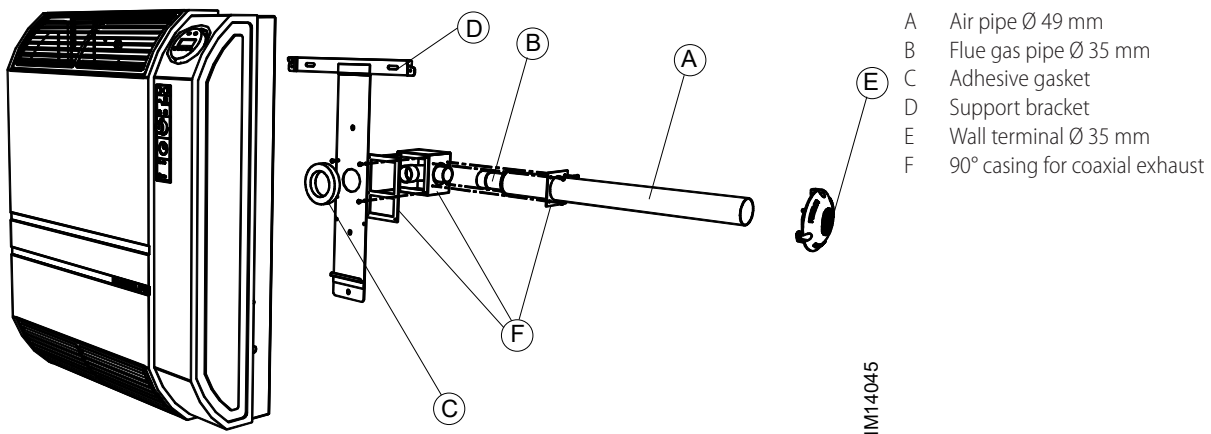
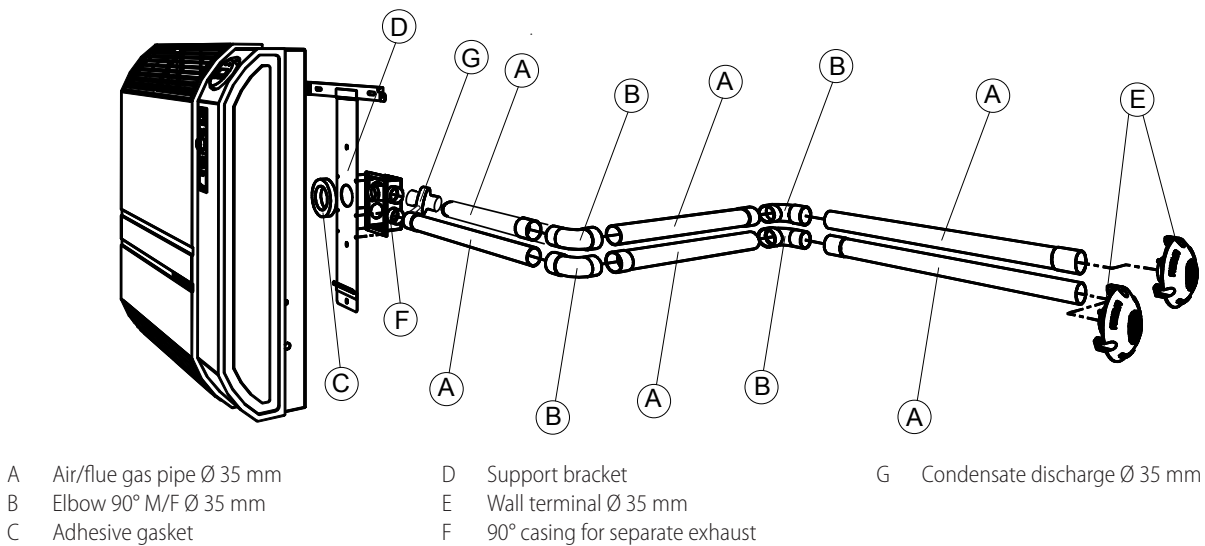


Figure 3.3 Installation with coaxial pipes with 90° outlet**Figure 3.4** Installation with wall separate ducts

For further information on the installation of the flue gas exhaust/air intake duct, please refer to the installation guide for the flue gas exhaust/air intake ducts D-GPP001, available on the Robur website.

3.4.2.1 Installation with separate ducts

If the appliance is installed with separate pipes, suitable pipes and components, available as optional, must be used.

At the design stage, it must be verified that the sum of the pressure drop of all components used does not exceed the value of the available residual head (Table 3.2 p. 13).

Table 3.2 Separate exhaust pressure drop table

Description	Code		3001	3002
residual head		Pa	25	25
Air pipe internal Ø 33 mm	OPRL000	Pa/m	0,6	0,6
Horizontal flue gas pipe internal Ø 33 mm	OPRL000	Pa/m	1,5	1,5
Vertical flue gas pipe internal Ø 33 mm	OPRL000	Pa/m	0,2	0,2
90° elbow on air pipe	OCRV000	Pa	0,6	0,6
90° elbow on flue gas pipe	OCRV000	Pa	1,0	1,0
Casing complete with internal elbow for flue gas exhaust	OCFF002	Pa	1,5	1,5
Casing without internal elbow for flue gas exhaust	OCFF002	Pa	1,0	1,0
Roof terminal Ø 35 mm	OTRM002	Pa	0,0	0,0
Wall terminal	JTRM000B	Pa	0,0	0,0
Condensate discharge Ø 35 mm	OSCR003	Pa	0,0	0,0

If the flue gas pipe is longer than 1,5 metres, a condensate drain (available as OSCR003 optional) must be installed

on the pipe as close as possible to the appliance. To limit the formation of condensate, it is in any case advisable to insulate the flue gas pipe with a material resistant to high temperatures.



Due to the high temperatures that the flue gas pipe can reach, it is still advisable to insulate it from the wall and from potential contact with things and people, for example by using rock wool or glass wool.



The flue gas exhaust terminal, if used only for flue gas exhaust, must also be protected against accidental contact with people and things, due to the high temperatures it can reach.

3.5 INSTALLATION PROCEDURE

In accordance with the installation project, prepare the gas and electrical supply lines, as well as the holes for the flue gas outlet and combustion air intake.

3.5.1 Install the gas-fired convector on the wall

1. Check the packaging for visible signs of damage, otherwise, notify the carrier immediately.
2. Remove the gas-fired convector from its packaging by first removing the air intake and flue gas exhaust pipes. Do not damage or discard the cardboard jig

with the drilling template required for installing the gas-fired convector.

3. Fix the jig to the wall where the gas-fired convector is to be installed, making sure it is perpendicular to the floor.
4. Drill the hole (\varnothing 50 mm) to house the larger pipe and holes A (Figure 3.6 p. 15) to fix the support bracket (drill 6 mm holes to insert the provided wall plugs). The \varnothing 50 mm hole for the duct can be made with a suitable core drill or by means of a succession of smaller holes made with a simple drill on the perimeter to be removed.
5. Adjust the length of the pipes (air intake and flue gas exhaust) to the actual thickness of the wall by cutting off the excess length: to determine the exact length see diagram Figure 3.5 p. 14.



The coaxial duct must in any case not be less than 20 cm in length (flue gas pipe 200 + 33 mm, air intake pipe 200 + 2 mm).



In the \varnothing 49 pipe, do not cut the side with the edging, which will later be used to secure the pipe.

In the \varnothing 35 pipe, do not cut off the side with a skirted end that will be used to fit the pipe to the gas-fired convector.

6. Remove the jig from the wall.

Figure 3.5 Indications for cutting air/flue gas pipes

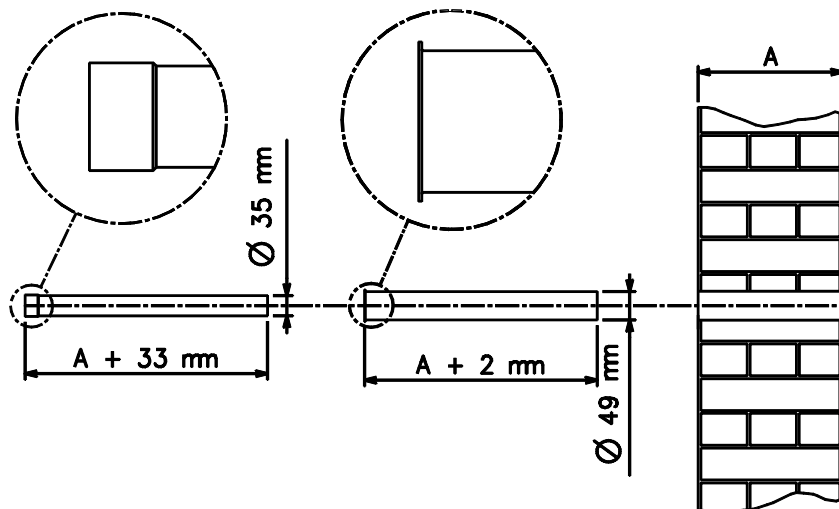
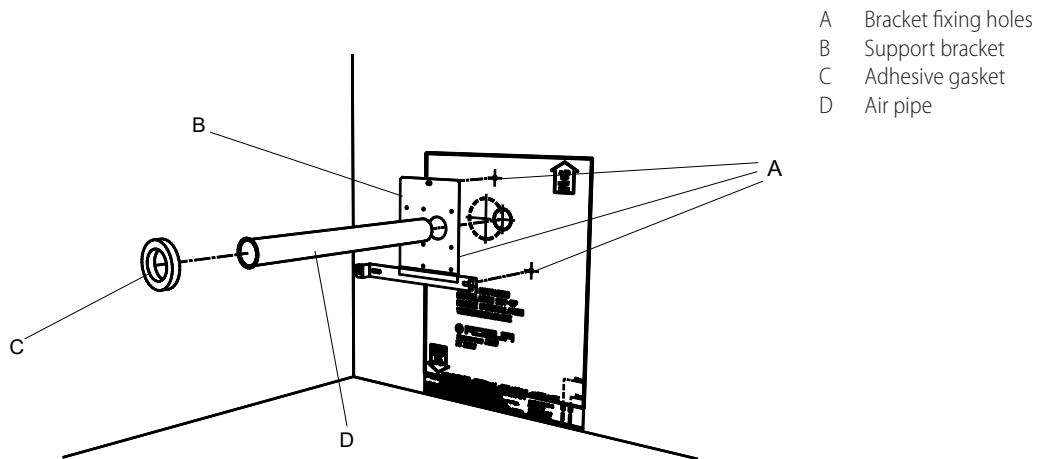


Figure 3.6 Support bracket positioning and holes drilling



7. Position the support bracket and the air intake pipe \varnothing 49, making sure that the pipe edge perfectly enters the matching hole in the bracket (see Figure 3.6 p. 15).
8. Fix the support bracket with the screws and position the round adhesive gasket around the hole in the bracket (see Figure 3.6 p. 15).
9. Remove the casing from the frame complete with heating body by loosening the fixing screws (see Figure 3.7 p. 15) and disconnect the casing earth cable.
10. Fit the end of the flue gas exhaust pipe (\varnothing 35 mm) onto the gas-fired convector outlet socket (Figure 3.8 p. 15).
11. Hook the appliance to the appropriate brackets A (Figure 3.9 p. 16) by pressing it against the wall. Secure the heating body to the support bracket by means of the two side screws (detail B Figure 3.9 p. 16).
12. Connect the power supply as described in Paragraph 4.2 p. 16.
13. Connect the gas network as described in Paragraph 3.3 p. 10.
14. Connect the grounding cable of the casing and reassemble the casing.

Figure 3.7 Casing fixing screws

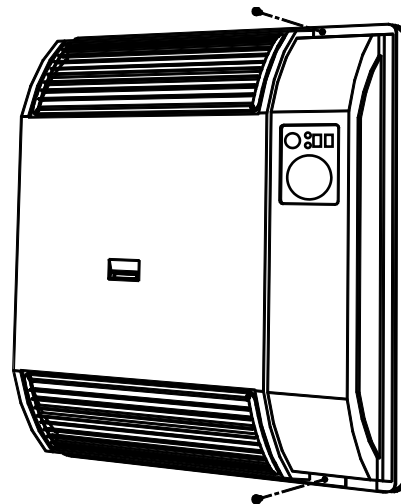
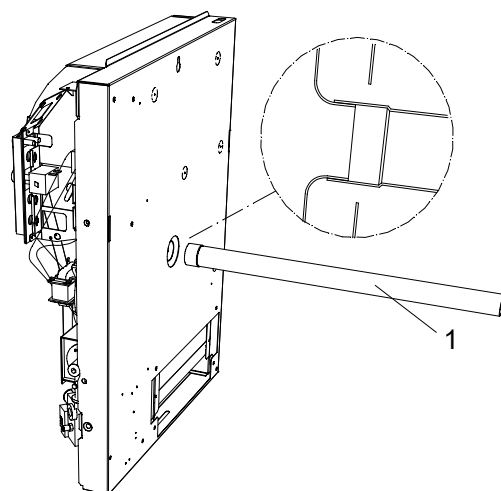
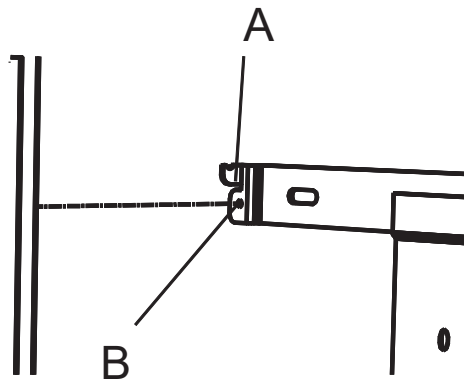


Figure 3.8 Positioning the flue gas exhaust pipe



1 Flue gas pipe \varnothing 35 mm

Figure 3.9 Support bracket detail



A Supports B Fastening screws

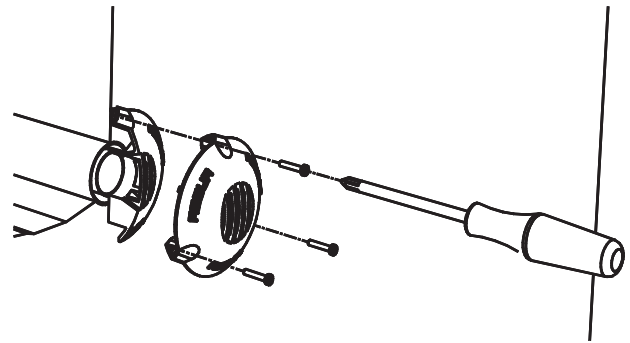
3.5.2 Install the windproof terminal

1. When the appliance is installed, place the aluminium windproof terminal to the outdoor wall so that it

engages with the end of the flue gas pipe and mark the position of the three holes for the expansion plugs (see Figure 3.10 p. 16). The terminal must be fitted with the flue outlet grille arranged vertically.

2. Remove the terminal and drill the fixing holes (6 mm Ø for the supplied wall plugs).
3. Reassemble the terminal and secure it with the screws using the relevant plugs (see Figure 3.10 p. 16).

Figure 3.10 Windproof terminal fixing



4 ELECTRICAL INSTALLER

4.1 WARNINGS

General warnings

Read the warnings in Chapter III p. 4, providing important information on regulations and on safety.

Compliance with installation standards

Installation must comply with applicable regulations in force, based on the installation Country and site, in matters of safety, design, implementation and maintenance of electrical systems.

Installation must also comply with the manufacturer's provisions.

Live components

- After placing the appliance in the final position, and prior to making electrical connections, ensure not to work on live components.

Earthing

- The appliance must be connected to an effective earthing system, installed in compliance with regulations in force.
- It is forbidden to use gas pipes as earthing.

Cable segregation

Keep power cables physically separate from signal ones.

Do not use the power supply switch to turn the appliance on/off

- Never use the power supply switch to turn the appliance on and off, since it may be damaged in the long run (occasional blackouts are tolerated).
- To turn the appliance on and off, exclusively use the suitably provided control device.

4.2 ELECTRICAL POWER SUPPLY


Provide (by the installer) a protected single-phase line (230 V 1-N 50 Hz).

How to connect the power supply

1. Provide a three-core H05 VVF 3x1 mm² cable with a maximum external diameter of 8,4 mm by passing it through hole A and cable gland D and connecting it to terminal block B (Figure 3.1 p. 11), taking care to observe the polarity indicated on the terminal block (L = phase, N = neutral, \perp = earth).
2. Provide the earth lead-in wire longer than live ones (last to be torn in the event of accidental pulling).
3. The cable shall be fitted with a plug at one end or connected to a two-pole switch with a minimum contact opening of 3 mm.
4. If an external three-pin plug is used, it is advisable to place a mark on the plug and on the power supply socket, in order to avoid that in case of temporary removal of the plug, it is reinserted in reverse, with consequent

reversal of the polarity of the power supply.

5 FIRST START-UP

 First start-up entails checking/setting up the combustion parameters and may exclusively be carried out by a Robur TAC. NEITHER the user NOR the installation technician is authorised to perform such operations, under penalty of voiding the warranty.

The installer is obliged to carry out preliminary checks described in Paragraph 5.1 p. 17.

5.1 PRELIMINARY CHECKS



Paragraph dedicated to the installer.

5.1.1 Preliminary checks for first start-up

Upon completing installation, before contacting the TAC the installer must check:

- ▶ Electrical and gas systems suitable for the required capacities and equipped with all safety and control devices required by the regulations in force.
- ▶ Absence of leaks in the gas system.
- ▶ Type of gas for which the appliance is designed (natural gas, LPG or other gas).
- ▶ Supply gas pressure complying with the values of Table 3.1 p. 11, with max tolerance $\pm 15\%$.
- ▶ Correct operation of the flue exhaust duct.
- ▶ Combustion air intake and flue gas exhaust correctly carried out according to the regulations in force.
- ▶ Power supply mains complying with the appliance's rating plate data.
- ▶ Appliance correctly installed, according to the manufacturer's provisions.
- ▶ System installed in a workmanlike manner, according to national and local regulations.

5.1.2 Abnormal or hazardous installation situations

Should any abnormal or hazardous installation situations be found, the TAC shall not perform first start-up and the appliance shall not be commissioned.

These situations may be:

- ▶ Failed compliance with minimum clearances.
- ▶ Insufficient distance from combustible materials.
- ▶ Conditions that do not warrant access and maintenance in safety.
- ▶ Appliance defects or faults caused during transport or installation.
- ▶ Gas smell.
- ▶ Non-compliant mains gas pressure.
- ▶ Non-compliant flue gas exhaust.
- ▶ All situations that may involve operation abnormalities or are potentially hazardous.

5.1.3 Non-compliant system and corrective actions

Should the TAC find any non conformities, the user/installer is bound to perform any corrective procedures required by the TAC.

After performing the remedial actions (the installer's responsibility), if the TAC deems that safety and conformity conditions are in place, first start-up may be effected.

5.2 CHECKING BURNER GAS PRESSURE



Paragraph reserved exclusively to TACs.



The gas supply circuit is equipped with a gas solenoid valve with double safety shutter and pressure regulator to control the gas flow. All models are factory-set to operate with natural gas and can be converted to LPG (see Paragraph 5.3 p. 18). Each gas-fired convector is calibrated during factory testing for operation with natural gas. After installation, check that the gas pressure at the burner complies with indications in Paragraph 5.3.1 p. 18.



All adjustments must be made with the appliance switched on and after removing the casing.



After completion of the gas pressure check at the burner, the valve adjustment screws must be sealed.

5.2.1 Natural gas supply



Figure 5.1 p. 18

1. Remove the casing from the frame and disconnect the casing grounding cable.
2. Connect a pressure gauge to the pressure intake A, after removing its sealing screw.
3. Switch on the appliance (Paragraph 6.3.1 p. 20).
4. Turn the thermostat to the highest heat demand.
5. Adjust the gas pressure at the burner to the required value (Table 5.1 p. 18) by means of the pressure regulator B. By turning clockwise the pressure increases, counterclockwise it decreases. Use a hex key for adjustment.
6. When the adjustment is complete, switch off the appliance.

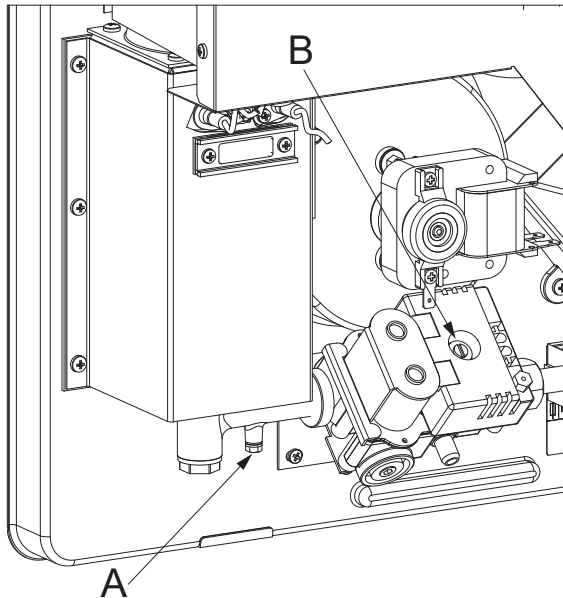


After the adjustment, stop and start the appliance and check that burner pressure has stabilised. If

necessary perform the adjustment again.

7. Disconnect the pressure gauge and refit the sealing screw.
8. Connect the grounding cable of the casing and reassemble the casing.

Figure 5.1 Valve assembly



- A Pressure intake
- B Pressure regulator

3. Switch on the appliance (Paragraph 6.3.1 p. 20).
4. Turn the thermostat to the highest heat demand.
5. Adjust the gas pressure at the burner to the required value (Table 5.1 p. 18) by excluding pressure regulator B (by fully tightening its screw) and adjusting the second stage regulator if necessary.
6. When the adjustment is complete, switch off the appliance.

i After the adjustment, stop and start the appliance and check that burner pressure has stabilised. If necessary perform the adjustment again.

7. Disconnect the pressure gauge and refit the sealing screw.
8. Connect the grounding cable of the casing and reassemble the casing.

5.3 GAS CHANGEOVER

Paragraph reserved exclusively to TACs.

i After the gas changeover, check the combustion parameters as described in Paragraph 5.2 p. 17.

! Check that the gas supply line is suitable for the new fuel type used to supply the unit.

Table 5.1 Burner gas pressure

			3001	3002
Installation data				
Burner gas pressure	Nominal heat input	G20 mbar	10,0	
		G25 mbar	9,0	
		G30 mbar	28,8	
		G31 mbar	36,7	

5.2.2 LPG supply

For LPG supply, the gas-fired convector must be converted from natural gas to LPG by using the supplied gas change kit and following the instructions in Paragraph 5.3 p. 18. When operating with LPG gas, the maximum operating pressure depends only on the network pressure, which must be as indicated in Table 3.1 p. 11.

! The reduction of the pressure in the network is possible following the instructions in Paragraph 3.3.6 p. 12.

To adjust the gas-fired convector for operation with LPG, proceed as described below.

! Figure 5.1 p. 18

1. Remove the casing from the frame and disconnect the casing grounding cable.
2. Connect a pressure gauge to the pressure intake A, after removing its sealing screw.

5.3.1 Conversion from natural gas to LPG

! Figure 5.2 p. 19

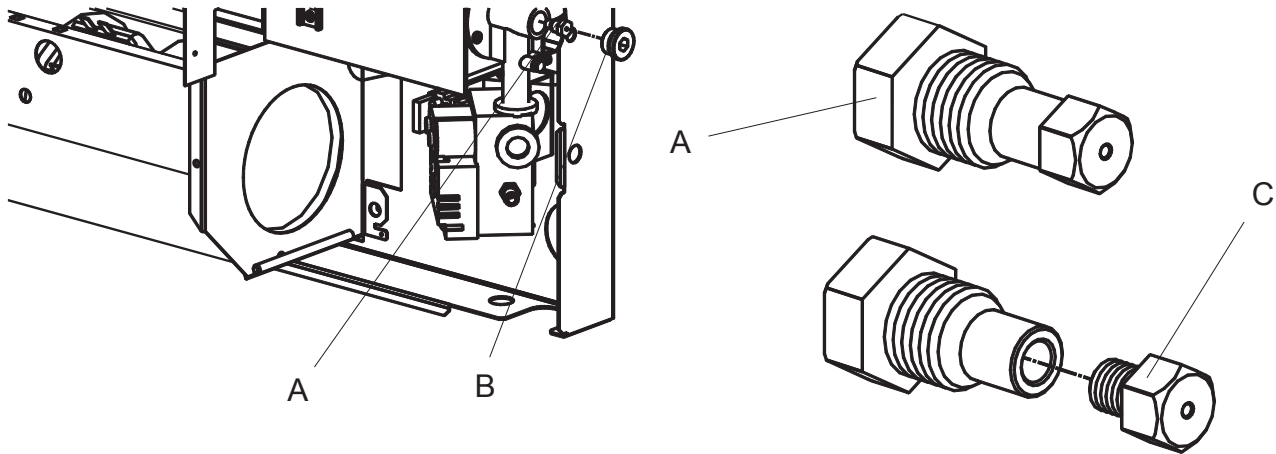
1. Cut off electric power and gas supply.
2. Remove the casing from the frame and disconnect the casing grounding cable.
3. Unscrew the B plug with a no. 19 wrench.
4. Using a no.10 socket wrench introduced in the opening, unscrew the nozzle holder A.
5. Unscrew the calibrated nozzle C from the nozzle holder A and replace it (Table 5.2 p. 18).
6. Screw the nozzle support and nozzle assembly back on to the burner.
7. Reassemble the plug B.
8. Turn on the gas-fired convector and check the gas tightness of plug B.
9. Check the gas pressure at the burner as described in Paragraph 5.2.2 p. 18.
10. Remove the "NATURAL GAS" adhesive label and replace it with the "LPG" adhesive label.
11. Connect the grounding cable of the casing and reassemble the casing.

Table 5.2 Gaz nozzles

	3001	3002
Installation data		

				3001	3002
Nozzle	Diameter (Ø)	G20	mm	1,45/1,70	
		G25	mm	1.75/1,80	
		G30	mm	0.85/0,95	
		G31	mm	0.85/0,95	
	Code	G20	-	53	
		G25	-	54	
		G30	-	50	
		G31	-	50	


Figure 5.2 Detail of burner assembly



A Nozzle holder.

B Cap

5.3.2 Conversion from LPG to natural gas

 Figure 5.2 p. 19

1. Cut off electric power and gas supply.
2. Remove the casing from the frame and disconnect the casing grounding cable.
3. Unscrew the B plug with a no. 19 wrench.
4. Using a no.10 socket wrench introduced in the opening, unscrew the nozzle holder A.
5. Unscrew the calibrated nozzle C from the nozzle holder A and replace it (Table 5.2 p. 18).

6. Screw the nozzle support and nozzle assembly back on to the burner.
7. Reassemble the plug B.
8. Turn on the gas-fired convector and check the gas tightness of plug B.
9. Check the gas pressure at the burner as described in Paragraph 5.2.1 p. 17.
10. Remove the "LPG" adhesive label and replace it with the "NATURAL GAS" adhesive label.
11. Connect the grounding cable of the casing and reassemble the casing.

6 NORMAL OPERATION

 This section is for the end user.

The operation of the Supercromo gas-fired heaters is controlled by the supplied control panel.

6.1 WARNINGS

 General warnings

Prior to using the appliance carefully read the warnings in Chapter III.1 p. 4, providing important

information on regulations and on safety.

 First startup by TAC

First start-up may exclusively be carried out by a Robur TAC (Chapter 7 p. 23).

 Never power the appliance off while it is running

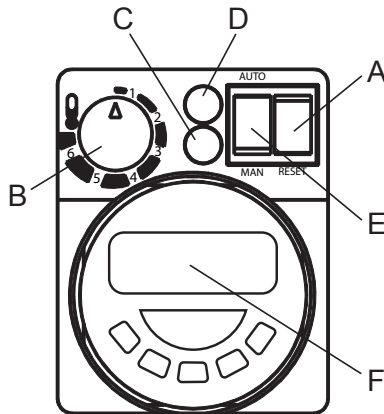
NEVER power the appliance off while it is running (except in the event of danger, Chapter III.1 p. 4), since the appliance or system might be damaged.

i Do not obstruct the fan intake or the outlet grille.

i Do not obstruct the air intake and flue gas exhaust ducts located outside the room.

6.2 CONTROL PANEL

Figure 6.1 Control panel



- A Reset button
- B Temperature adjustment knob
- C Red lock-out signal light
- D Green operation signal light
- E Manual/programmed button
- F Programmable timer (standard on 3002 model, optional on 3001 model)

6.3 SWITCH ON AND OFF

6.3.1 Switching on

1. Open the gas valve.
2. Power up the gas-fired convector.
3. In the presence of the programmable timer (standard on 3002 model, optional on 3001 model), program the timer according to your needs (Paragraph 6.4 p. 20). Set the manual/programmed button E (Figure 6.1 p. 20) to the desired function (button released or MAN position if you want the appliance to be controlled only by the room thermostat or button pressed or AUTO position if you want it to be controlled also by the programmable timer).



For the 3002 model, make sure the programmable timer operation is set to AUTO if you want to activate the time schedule.

4. Turn temperature control knob B to the highest temperature setting.
5. After about 30 seconds the gas solenoid valve opens and the ignition electrode begins to spark, for a maximum of 10 seconds.
6. If the flame is present, the detection electrode

automatically interrupts the sparking and keeps the appliance running; the green operation signal light D lights up.

7. If this is not the case, the control unit locks out the appliance and the blower stops, lighting up red signal light C. The reset must be carried out manually using reset button A.
8. Once the appliance is switched on, turn knob B on the thermostat clockwise to increase the room temperature and counterclockwise to decrease it.
9. The fan starts automatically only when it receives the consent of the ventilation control thermostat, i.e. when the heat exchanger is hot, in order to prevent cold air from being introduced into the room and will switch off when the heat exchanger is cold.

The gradation of the thermostat is purely indicative. The value of the set temperature depends on the type of room in which the appliance is installed. A relationship between the position of the thermostat and the actual room temperature can be obtained by measuring the room temperature at a given thermostat setting.

6.3.2 Switching off

1. To temporarily switch off the appliance (e.g. during the night period) turn knob B of the thermostat to the minimum temperature position. This will ensure a minimum temperature (antifreeze) for the room. For models with a programmable timer (standard on 3002 model, optional on 3001 model) the appliance can be temporarily switched off by setting the programmable timer operation to OFF (Paragraph 6.4 p. 20).
2. For the season stop it is advisable to disconnect the appliance from the power supply and close the gas tap.

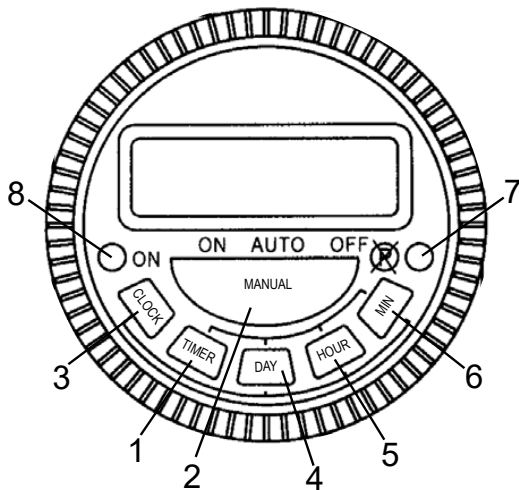


In models with a programmable timer (standard on 3002 model, optional on 3001 model), cutting the power supply loses the day and time setting, which must be reset the next time the power is turned on.

6.4 PROGRAMMABLE TIMER

6.4.1 Features

- ▶ Minimum switching time 1 minute.
- ▶ 15 combinations of daily programs.
- ▶ 16 ON/OFF programs for each daily program.

Figure 6.2 TM619-2 timer

- 1 Reviewing and setting up programs
- 2 Operating mode setting ON, AUTO, OFF
- 3 Setting current date and time
- 4 Setting the day of the week
- 5 Setting the time
- 6 Setting the minutes
- 7 Reset settings
- 8 ON/OFF status LED

6.4.2 Programmable timer installation

i The installation must be carried out by a TAC in accordance with the law of the country of installation.

i Make sure not to work on live components.

The programmable timer kit consists of:

- ▶ 1 digital programmable timer
- ▶ 1 cable kit for electrical connections
- ▶ 1 ring nut Ø 70
- ▶ 4 screws

6.4.2.1 Supercromo 3001

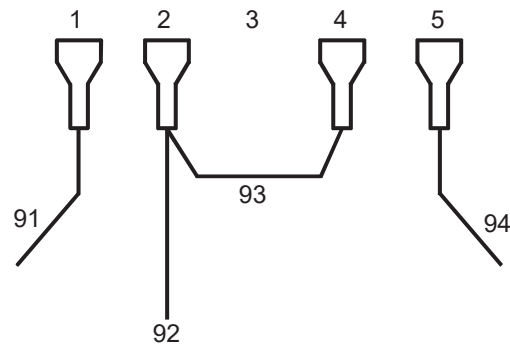
To install the programmable timer proceed as follows:

1. Remove the casing from the frame and disconnect the casing grounding cable.
2. Unscrew the control mask and with a pincer remove the joints from the back that secure the black cap to the mask.
3. Connect the fast-on of the cable kit to the electrical connections of the programmable timer as shown in Figure 6.3 p. 21.
4. Disconnect cable 18 (blue) from the flue gas extractor power supply fast-on.
5. Join cable 18 (blue) to cable 91 (blue) of the cable kit and reconnect both to the fast-on of the flue gas extractor.
6. Disconnect cable 2 (black) from the fan thermostat and connect this cable to cable 92 (black) of the cable kit and reconnect both to the fast-on of the fan thermostat by running the cables under the bracket.

7. Use cable 93 (black) of the cable kit to connect the programmable timer terminals 2 and 4 to each other.
8. Remove the room thermostat, disconnect cable 7 (brown) from the fast-on of the room thermostat. Join this cable to cable 94 (green) of the cable kit and reconnect both to the fast-on of the room thermostat by running the cables under the bracket.
9. Reassemble the room thermostat.
10. Attach the programmable timer to the support bracket using the supplied screws.
11. Replace the command mask.
12. Connect the grounding cable of the casing and reassemble the casing.



It is necessary to set the manual/programmed button of the gas-fired convector (button E Figure 6.1 p. 20) to the desired function (MAN position if you want the appliance to be controlled only by the room thermostat, AUTO position if you want the appliance to be controlled also by the programmable timer).

Figure 6.3 Electrical connection for model 3001

- | | | | |
|---|------------------|---|------------------|
| 1 | Cable 91 (blue) | 4 | Cable 93 (black) |
| 2 | Cable 92 (black) | 5 | Cable 94 (green) |
| 3 | No connection | | |

6.4.2.2 Supercromo 3002

The Supercromo 3002 is supplied as standard with the programmable timer already fitted.

In case the programmable timer must be replaced, make the electrical connections as shown in Figure 6.3 p. 21.

6.4.3 Timer programming



To reset the programmable timer press the button.



6.4.3.1 Setting the date and the time

Press and hold the CLOCK button and then press the DAY button, HOUR button, MIN button respectively to adjust the day, hour and minutes.




The time is indicated in the 24-hour format (0:00 ... 23:59).

6.4.3.2 Set the on/off programs

1. Press the TIMER button. The LCD screen will show  (switch-on program 1 ON).
2. Press the DAY button to select any of the 15 daily program combinations of your choice. Continuing to press the DAY button, the display will alternate between the 15 available combinations (Figure 6.4 p. 22).
3. Press the HOUR, MIN buttons respectively to set the desired hour and minutes for program 1 ON.
4. After finished setting program 1 ON, press the TIMER button again,  will appear on the display (switch-off program 1 OFF).
5. Press the DAY button and select the same combination of daily programs chosen for program 1 ON. If you keep pressing the DAY button, the 15 available combinations will alternate on the display (Figure 6.4 p. 22).



The combination of days chosen in each of the ON/OFF time programs must be consistent. If you set MO-WE-FR in program 1 ON, you must set MO-WE-FR also for program 1 OFF.

6. Press the HOUR, MIN buttons respectively to set the desired hour and minutes for program 1 OFF.
7. When finished setting programs 1ON and 1 OFF, press TIMER button,  will appear on the display (switch-on program 2 ON)
8. If you want to set additional switch-on and switch-off programs, repeat the programming procedure described above.



The programmable timer allows you to set up to a maximum of 16 ON/OFF programming intervals.

9. At the end of the program setting, press the CLOCK button, the programmable timer will start running the programs.



When programming is completed, it is advisable to check that you have not set contrasting programs in order to avoid unwanted switching on and/or switching off. Pressing the TIMER button the on/off programs set will be displayed.

.....
Figure 6.4 15 combination of days in a week

1.	MO	TU	WE	TH	FR	SA	SU
2.	MO						
3.		TU					
4.			WE				
5.				TH			
6.					FR		
7.						SA	
8.							SU
9.	MO		WE		FR		
10.		TU		TH		SA	
11.						SA	SU
12.	MO	TU	WE				
13.				TH	FR	SA	
14.	MO	TU	WE	TH	FR		
15.	MO	TU	WE	TH	FR	SA	

1	From Monday to Sunday	9	Monday, Wednesday, Friday
2	Monday	10	Tuesday, Thursday, Saturday
3	Tuesday	11	Saturday, Sunday
4	Wednesday	12	From Monday to Wednesday
5	Thursday	13	From Thursday to Saturday
6	Friday	14	From Monday to Friday
7	Saturday	15	From Monday to Saturday
8	Sunday		

.....

6.4.4 Program skip function

6.4.4.1 How to use the program skip functions

The program skip functions allow you to temporarily suspend the running of the set programs, to force a temporary switch-off (case 1) or a temporary switch-on (case 2). The programmed operation is resumed returning to the AUTO mode, starting from the following time program.



Program skip functions are effective only when the programmable timer is running in AUTO mode.

6.4.4.2 Temporary skipping programs

During operation in AUTO mode it is possible to temporarily skip one or more set programs, as specified below.

Case 1: the status of the programmable timer output is "ON" (red LED lit)

1. Press the MANUAL button to move the indicator from "AUTO" to "OFF", the programmable timer output will change to the state "OFF" and the red LED will switch off; this way, the set programs will be skipped.
2. To reactivate the running of the set programs, press the MANUAL button again, the indicator will move from "OFF" to "AUTO" but the output of the programmable timer will continue to stay "OFF" (red LED off). The programmable timer will resume its automatic operation when the next program will switch to the status "ON" (i.e. until the status of the request is changed).

Case 2: the status of the programmer clock output is "OFF" (red LED off)

1. Press the MANUAL button to move the indicator from "AUTO" to "ON", the programmable timer output will change to the state "ON" and the red LED will light up; this way, the set programs will be skipped.
2. To reactivate the running of the set programs, press the

MANUAL button again, the indicator will move from "ON" to "AUTO" but the output of the programmable timer will continue to stay "ON" (red LED on). The programmable timer will resume its automatic operation when the next program will switch to the status "OFF" (i.e. until the status of the request is changed).

7 MAINTENANCE

7.1 WARNINGS

i Correct maintenance prevents problems, assures efficiency and keeps running costs low.

! Any operation on internal components may exclusively be performed by the TAC.

i Before performing any operation, switch off the appliance by means of the control device and wait for the end of the shutdown cycle, then disconnect power and gas supply, by acting on the electrical disconnecter and gas valve.

i The efficiency checks and every other "check and maintenance operation" must be performed with a frequency according to current regulations or, if more restrictive, according to the provisions set forth by the manufacturer, installer or TAC.

i Responsibility for efficiency checks, to be carried out for the aims of restricting energy consumption, lies with the system manager.

7.2 CLEANING AND MAINTENANCE

The only operation required by this kind of gas-fired convector is the cleaning of the outer casing (which must always be carried out with the appliance cold and without the use of solvents) and the periodic removal of any dust that may accumulate on the heat exchanger and the fan. It is recommended to have a periodic (annual) check and cleaning of the gas-fired convector by contacting a TAC. With regard to periodic maintenance of the gas-fired convector, follow the regulations in force.

7.3 SAFETY DEVICES

i **Electricity outage**

The gas-fired convector is switched off by closing the gas valve. When the power supply is restored, the gas-fired convector will automatically restart.

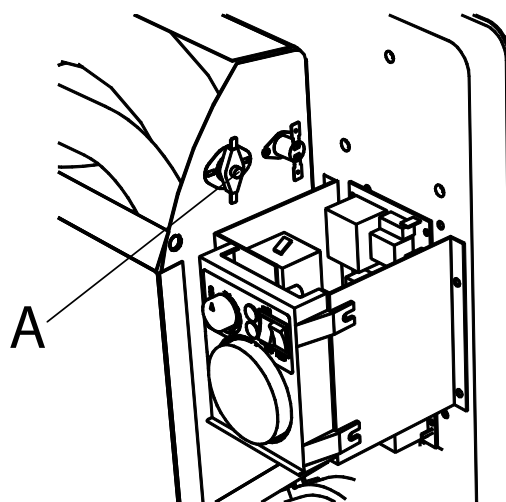
i **Gas failure or other faults that causes the flame to extinguish**

The gas-fired convector will automatically attempt to restart for a period of 10 seconds, after which, if the attempt fails, the control unit will lock out the gas-fired convector and stop the blower (red signal light lit on the control panel).

i **Overheating**

If during operation the upper or lower grille is partially obstructed or the fan stops, causing the gas-fired convector to overheat, the limit thermostat trips, cutting off the power supply to the gas valve, interrupting the flow of gas to the burner. To restore operation, wait about ten minutes for the temperature to drop, disconnect the gas-fired convector from the power supply, remove the casing and reset the limit thermostat by pressing the reset button located on the limit thermostat itself (detail A in Figure 7.1 p. 23). If the problem is repeated within a short period of time, TAC must be called in to check the causes of overheating.

Figure 7.1 Limit thermostat



A Limit thermostat

7.4 ANY MALFUNCTIONS OF OPERATION

Before taking any particular measures, always check that:

- There is a full electricity supply.
- The gas is supplied.
- The supply pressure at the burner is within the specified tolerance range.

Only at this point proceed with the specific troubleshooting.



Before removing the casing to gain access to the electrical panel, disconnect the gas-fired convector from the two-pole switch located upstream of the radiator, or remove the power plug.

7.4.1 Case 1: the appliance locks out during the first start-up phase

- A.** There is no adequate gas flow to the gas-fired convector. Check that no taps or manual valves are closed. If the appliance has not been used for a long period of time there may be air in the pipes. Therefore, try the ignition several times after the error has been reset.
- B.** The polarity of the power supply is incorrect: check it. If using an external plug, remove it from the socket and reinsert it by turning it 180°.
- C.** One of the ignition electrodes is broken or badly positioned: replace it or reposition it.



For a correct ignition, the distance between the two ignition electrodes must be about 3-5 mm.

- D.** The detection electrode is broken or badly positioned: replace it or reposition it.
- E.** One of the ignition electrodes or the relevant cable is in contact with the casing or other metal parts: check by removing the casing and removing the contact.
- F.** Failure of the ignition equipment: replace it.

7.4.2 Case 2: the appliance locks out during normal operation

- A.** The limit thermostat has tripped to limit overheating caused by:
 - Obstruction on upper hot air outlet: remove obstruction.
 - Fan fault: replace it.
- B.** Fault in the fan thermostat. The fan thermostat does not allow the fan to turn on: replace it.
- C.** Gas valve fault: replace it.



When replacing the gas valve, it is necessary, as required by current regulations, to seal the nozzle holder with a sealant that complies with EN 751-1 and EN 751-2 (i.e. suitable for gas tightness). Check the pressure at the burner after replacing the gas valve.

- D.** Bad connection of the limit thermostat: check cables and connections.

8 APPENDICES

8.1 ERP DATA SHEETS

Figure 8.1

Table 1 COMMISSION REGULATION (EU) 2015/1188 Information requirements for gaseous/liquid fuel local space heaters							
Model identifier(s):				Supercromo 3001			
Indirect heating functionality: [yes/no]				no			
Direct heat output: (kW)				2,3			
Indirect heat output: (kW)							
Fuel				Space heating emissions (*)			
				NO _x			
Select fuel type [gaseous/liquid]		gaseous		56,4	[mg/kWh _{input}] (GCV)		
Item	Simbol	Value	Unit	Item	Simbol	Value	Unit
Heat output				Useful efficiency (NCV)			
Nominal heat output	P _{nom}	2,32	kW	Useful efficiency at nominal heat output	η _{th, nom}	90,0	%
Minimum heat output (indicative)	P _{min}	2,32	kW	Useful efficiency at minimum heat output (indicative)	η _{th, min}	90,0	%
Auxiliary electricity consumption				Type of heat output/room temperature control (select one)			
At nominal heat output	e _{l, max}	0,045	kW	single stage heat output, no room temperature control			no
At minimum heat output	e _{l, min}	0,045	kW	two or more manual stages, no room temperature control			no
In standby mode	e _{l, SB}	0,000	kW	with mechanic thermostat room temperature control			no
				with electronic room temperature control			yes
				with electronic room temperature control plus day timer			no
				with electronic room temperature control plus week timer			no
				Other control options (multiple selections possible)			
				room temperature control, with presence detection			no
				room temperature control, with open window detection			no
				with distance control option			no
				with adaptive start control			no
				with working time limitation			no
				with black bulb sensor			no
Permanent pilot flame power requirement							
Pilot flame power requirement (if applicable)	P _{pilot}	N.A.	kW				
Contact details	Robur SPA, Via Parigi 4/6, I-24040 Zingonia (BG)						
(*) NO _x = nitrogen oxides							

Figure 8.2

Table 1 COMMISSION REGULATION (EU) 2015/1188 Information requirements for gaseous/liquid fuel local space heaters									
Model identifier(s):						Supercromo 3002			
Indirect heating functionality: [yes/no]						no			
Direct heat output: (kW)						2,3			
Indirect heat output: (kW)									
Fuel					Space heating emissions (*)				
					NO _x				
Select fuel type [gaseous/liquid]				gaseous		56,4 [mg/kWh _{input}] (GCV)			
Item		Simbol	Value	Unit	Item		Simbol	Value	Unit
Heat output				Useful efficiency (NCV)					
Nominal heat output		P _{nom}	2,32	kW	Useful efficiency at nominal heat output		η _{th, nom}	90,0	%
Minimum heat output (indicative)		P _{min}	2,32	kW	Useful efficiency at minimum heat output (indicative)		η _{th, min}	90,0	%
Auxiliary electricity consumption				Type of heat output/room temperature control (select one)					
At nominal heat output		e _{l, max}	0,045	kW	single stage heat output, no room temperature control			no	
At minimum heat output		e _{l, min}	0,045	kW	two or more manual stages, no room temperature control			no	
In standby mode		e _{l, SB}	0,000	kW	with mechanic thermostat room temperature control			no	
					with electronic room temperature control			no	
					with electronic room temperature control plus day timer			no	
					with electronic room temperature control plus week timer			yes	
					Other control options (multiple selections possible)				
					room temperature control, with presence detection			no	
					room temperature control, with open window detection			no	
					with distance control option			no	
					with adaptive start control			no	
					with working time limitation			no	
					with black bulb sensor			no	
Permanent pilot flame power requirement									
Pilot flame power requirement (if applicable)		P _{pilot}	N.A.	kW					
Contact details		Robur SPA, Via Parigi 4/6, I-24040 Zingonia (BG)							
(*) NO _x = nitrogen oxides									

Robur mission

Robur is dedicated to dynamic progression in research, development and promotion of safe, environmentally-friendly, energy-efficiency products, through the commitment and caring of its employees and partners.



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