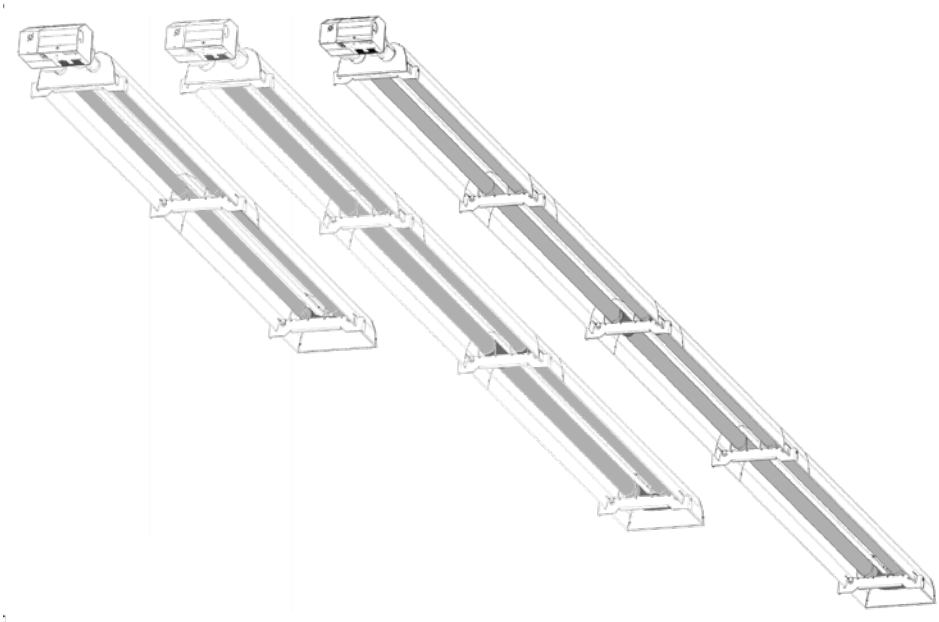
REZNOR®

BTWIN BTHE RADIANT TUBE HEATER



INSTALLATION, COMMISSIONING AND SERVICING MANUAL

CE

These appliances meet the following directives:
Gas Appliances (Product Safety and Metrology etc (Amendment etc) (EU Exit) Regulations 2019)
The Eco design for Energy-Related Products and Energy Information (Amendment) (EU Exit) Regulations 2020
Electromagnetic Compatibility Regulations 2016
Electrical Equipment (Safety) Regulations 2016
Supply of Machinery (Safety) Regulations 2008
Supply of Machinery (Safety) Regulations (A) 2011

Please read this document carefully before commencing installation, commissioning and/or servicing.
Leave it with the end user/site agent to be placed in their premises technical file after installation.

WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death.
All work must be carried out by appropriately qualified persons.
The manufacturer does not take any responsibility in the event of non-observance of the regulations concerning the connection of the apparatus causing a dangerous operation possibly resulting in damage to the apparatus and/or environment in which the unit is installed.

MANUAL PART NO. D301771 ISS 1

NGH
NORTEK GLOBAL HVAC

Contents

General Information (G)

Technical Data (TD)

Installation (I)

Commissioning and Operation (C)

Maintenance and Servicing (MS)

Fault Finding (FF)

Spare Parts (SP)

Information required for Ecodesign (ErP) Regulation 2024/1103

Disposal and recycling

G

BTHE Range

General product information

BTHE is a range of high efficiency overhead gas fired radiant tube heaters, CE certified for use in non domestic installations.

All models and sizes are available for use with natural gas (G20, G25) or propane (G31). The type of gas, the input rate and the electrical supply requirement is shown on the radiant heater rating plate. Check the rating plate to determine if the heater is appropriate for the intended installation.

This installation manual is shipped with the heater. Verify that the literature is correct for the model being installed. If the manual is incorrect for the heater, contact the supplier before beginning installation.

The instructions in this manual apply only to the models listed.

Installation should be carried out by a suitably qualified installer in accordance with these instructions and the current rules and regulations in force. The installer is responsible for the safe installation of the heater.

Using this manual

The symbols for 'Caution' and 'Warning' are used to highlight certain points throughout this manual.

Caution is used when failure to follow or implement the instruction(s) can lead to premature failure or damage to the heater or its component parts.

Warning is used when failure to heed or implement the instruction(s) can lead to not only component damage, but also to a hazardous situation being created where there is a risk of personal injury.

Warranty

This equipment comes as standard with a manufacturers two year warranty (2 years parts, 1 year labour) unless agreed otherwise at the time of order. The warranty is void if:

1. The installation is not in accordance with these instructions.
2. Wiring is not in accordance with the diagram furnished with the heater.
3. The unit is installed without proper clearances wherever clearances are required regardless of the material being combustible.
4. The unit is installed without proper ventilation and air for combustion.
5. The equipment is used in atmospheres containing flammable vapours or chlorinated or halogenated hydrocarbons or any contaminant (silicon, aluminium oxide, etc.).
6. The unit has not been serviced and maintained in accordance with the information contained within these instructions.
7. An appliance is connected to a duct system or the air delivery system is modified in any way.

Ignoring the warning and caution notices and the advice from the manufacturer on installation, commissioning, servicing or use, will jeopardise any applicable warranty. This could also compromise the safe and efficient running of the appliance itself and thereby constitute a hazard.

The electrical isolator should only be used for maintenance purposes or in an emergency. It should not be used for closing down the main burner as it switches off the fan prematurely and may damage the heat exchanger, invalidating the warranty.

Important notice to installers

Before installation, carefully read these instructions and follow the processes explained by the manufacturer. These instructions are only valid for appliances designed to operate in the UK.

Installing, commissioning, testing, programming and maintenance of these products must only be carried out by suitably qualified and trained technicians and in full compliance with all applicable regulations and current best practices.

Check if the appliance as described on the packaging label is in accordance with the correct type and model as specified on the data plate and complies with your customer order.

The appliance must be powered with a voltage corresponding to the value shown on the rating plate.

These units must be installed in accordance with the rules in force and local regulations / legislation as appropriate plus all local building codes. Installers should satisfy themselves that the gas pipework installation is carried out in accordance with all current legislation, Codes of Practice and recommendations.

Additionally it may be necessary to protect the gas valves which form part of the radiant heater or burner assembly from potential pipe contamination particularly, but not exclusively, where copper gas pipework is used.

In instances where copper pipework is to be used for all or part of a gas pipework installation, including short length final connections then we advise that installers consult with the gas supplier or provider and satisfy themselves what additional precautions may be necessary.

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. Read the installation, operation, and maintenance instructions thoroughly before installing or servicing this equipment.

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

Any reference made to Laws, Standards, Directives, Codes of Practice or other recommendations governing the application and installation of heating appliances and which may be referred to in Brochures, Specifications, Quotations, and Installation, Operation and Maintenance manuals is done so for information and guidance purposes only and should only be considered valid at the time of the publication.

The manufacturer cannot be held responsible from any matters arising from the revision to or introduction of new Laws, Standards, Directives, Codes of Practice or other recommendations.

BTHE radiant tube heaters conform to the following standards:-

EN416 - gas fired overhead radiant tube heaters and radiant tube heater systems for non-domestic use - safety and energy efficiency

EN60335-1 - safety if household and similar electrical appliances general requirements

EN60335-2-102 - household and similar electrical appliances. Safety. Particular requirements for gas, oil and solid fuel burning appliances having electrical connections

EN55014-1 - electromagnetic compatibility. Requirements for household appliances, electric tool and similar apparatus. Emission

EN55014-2 - electromagnetic compatibility. Requirements for household appliances, electric tool and similar apparatus. Immunity

Note: Neither asbestos nor soft soldered joints are used in the construction or manufacture of the BTHE Radiant Tube Heaters. The materials selected for use can withstand the mechanical, chemical, and thermal stresses which they will be subject to during foreseen normal use when installed in accordance with the manufacturers recommendations.

G

Health and safety

Ensure that anchoring points are suitable for the weight and loading of the product and if required, add suitable reinforcement to the anchoring points area.

Due consideration should be taken for workplace safety, risk assessments and waste disposal.

Any modification of the product may be hazardous and the manufacturer is not liable for any damage or injury caused by improper use.

Do not use this appliance if any part has been immersed in water. Immediately call a qualified service technician to inspect the appliance and replace any gas control that has been immersed in water.

This appliance is not intended for use by persons (including children) with reduced sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

Should overheating occur or the gas supply fails to shut off, shut off the manual gas valve to the appliance before shutting off the electrical supply.

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

This manual should be kept in a safe place for future reference.

For your safety, if you smell gas:

- **Do not try to light any appliance**
- **Do not touch any electrical switch, do not use any phone in your building**
- **Evacuate all personnel**
- **Contact your gas supplier immediately**

Do not store or use petrol or other flammable vapours and liquids in the vicinity of the appliance.

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

Read the installation, operation and maintenance instructions thoroughly before installing or servicing this equipment.

Installation, assembly, commissioning, service and maintenance procedures must be carried out only by suitably competent qualified persons.

Unauthorised modifications to the appliance, or departure from the manufacturer's guidance on intended use, or installation contrary to the manufacturer's recommendations may constitute a hazard.

Use only factory authorised parts and spares when replacement is required.

In case of persistent problems, contact your distributor.

The radiant tube temperature can reach 150°C or greater; this should be borne in mind for the type of installation. The heater MUST be allowed to cool prior to carrying out any maintenance.

Uncrating / preparation

Prior to crating and shipping, this unit was test operated and inspected at the factory and left in full operating condition. If the unit has incurred damage in shipment, document the damage with the transport company and contact your supplier.

After unpacking the appliance leave it in the packaging until just before siting to prevent damage to the unit.

Read this booklet and become familiar with the installation requirements of your unit.

Check if the local distribution conditions of electricity supply, type of gas and pressure of the appliance are compatible with the data plate.

The appliance must be installed in accordance with the current rules in force and any local or national regulations.

The requirements of the "Local Building Standards office", the premises "Insurance" undertaking and the "Fire Office" must also be observed.

Before commencing installation, ensure all necessary supplies, tools and manpower are available.

Technical Data

TD

Gas categories / supply pressures

Country	Approved Gas Category
Natural gas	
AT, BG, CH, CY, CZ, DK, EE, ES, FI, GB, GR, HR, IE, IT, LT, LV, NO, PT, RO, SE, SI, SK, TR	I2H
LU, PL, RO	I2E
BE	I2E(R)B
FR	I2Er
DE	I2ELL
Propane	
BE, CH, CZ, ES, FR, GB, GR, HR, IE, IT, LU, PL, PT, SI	I3P (37)
AT, BE, CH, CZ, DE, ES, FR, GB, NL	I3P (50)

Gas Category	Gas Type	Nominal Pressure (mbar)	Max Supply Pressure (mbar)	Min Supply Pressure (mbar)
I2H/I2E	Nat Gas (G20)	20	25	17.5
I2E(R)B/I2Er	Nat Gas (G20/25)	20/25	25/30	17.5/20
I2ELL	Nat Gas (G20/25)	20/20	25/30	17.5/18
I3P (37)	Propane Gas (G31)	37	45	25
I3P (50)	Propane Gas (G31)	50	57.5	42.5

Technical Data

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Model	Units	BTHE20	
Gas type	-	Natural gas (G20)	Propane (G31)
Nominal net heat input	kW PCI	20.0	19.9
Nominal gross heat input	kW PCS	22.2	21.7
Combustion efficiency	% PCI	>90	>89
Radiation factor	-	>60	>59
NOx class EN416	-	3	2
Electrical connection	-	230V / 50 Hz / single phase	
Fuse protection	Amps	1 x 5A	
Start current	A	0.90	
Run current	A	0.23	
Absorbed power	W	51	
Combustion air / flue	-	A2, B22, B52, C12, C32	
Combustion air inlet type A and B	mm	Ø38	
Flue gas outlet type A and B	mm	Ø48	
Combustion air inlet type C	mm	Ø38	
Flue gas outlet type C	-	Ø50	
Air pressure switch adjustment	Pa	49	
Extract fan discharge	mm	Ø133	
Flue connection	mm	Ø100	
Gas connection	-	G ¾" ISO228	
Weight	kg	79	
* In line with the ErP Regulations 2024/1103 and gas directive 2009/125/CE			

Distributed Gas		Natural gas		Propane	
Gas reference		G20	G25	G31	
Heat input (Hi) of gas reference		34.02 MJ/m³	29.25 MJ/m³	46.34 MJ/kg	46.34 MJ/kg
Heat input (Hs) of gas reference		37.78 MJ/m³	32.49 MJ/m³	50.37 MJ/kg	50.37 MJ/kg
Nominal inlet pressure (mbar)		20	20/25	37	50
BTHE20	Ø injector mm x 100	390	390	260	260
	Injector pressure mbar	10.1	15.4	25.2	25.2
	Gas flow at 15°C, 1013 mbar	2.11 m³/h	2.46 m³/h	1.55 kg/h	1.55 kg/h

Technical Data

TD

Model	Units	BTHE35	
Gas type	-	Natural gas (G20)	Propane (G31)
Nominal net heat input	kW PCI	35.0	35.0
Nominal gross heat input	kW PCS	38.9	38.2
Combustion efficiency	% PCI	>90	>90
Radiation factor	-	>60	>60
NOx class EN416	-	3	2
Electrical connection	-	230V / 50 Hz / single phase	
Fuse protection	Amps	1 x 5A	
Start current	A	0.90	
Run current	A	0.25	
Absorbed power	W	52	
Combustion air / flue	-	A2, B22, B52, C12, C32	
Combustion air inlet type A and B	mm	Ø49	
Flue gas outlet type A and B	mm	-	
Combustion air inlet type C	mm	Ø46	
Flue gas outlet type C	-	-	
Air pressure switch adjustment	Pa	69	
Extract fan discharge	mm	Ø133	
Flue connection	mm	Ø100	
Gas connection	-	G ¾" ISO228	
Weight	kg	130	
* In line with the ErP Regulations 2024/1103 and gas directive 2009/125/CE			

Distributed Gas		Natural gas		Propane	
Gas reference		G20	G25	G31	
Heat input (Hi) of gas reference (MJ/m³)		34.02 MJ/m³	29.25 MJ/m³	46.34 MJ/kg	46.34 MJ/kg
Heat input (Hs) of gas reference (MJ/m³)		37.78 MJ/m³	32.49 MJ/m³	50.37 MJ/kg	50.37 MJ/kg
Nominal inlet pressure (mbar)		20	20/25	37	50
BTHE35	Ø injector mm x 100	530	530	310	310
	Injector pressure mbar	8.7	13.5	35.5	35.5
	Gas flow at 15°C, 1013 mbar	3.70 m³/h	4.31 m³/h	2.73 kg/h	2.73 kg/h

Technical Data

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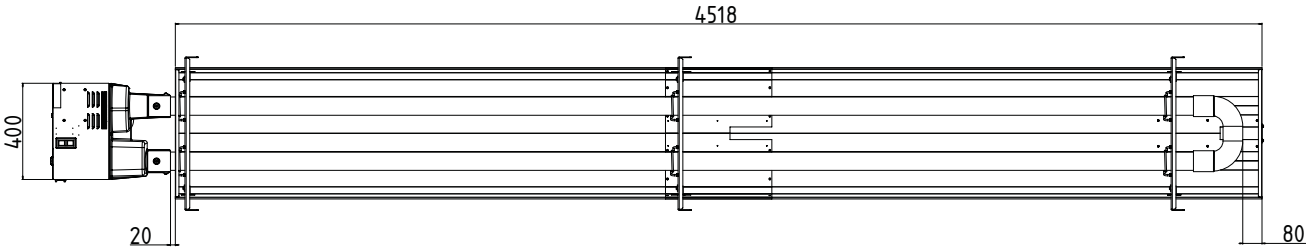
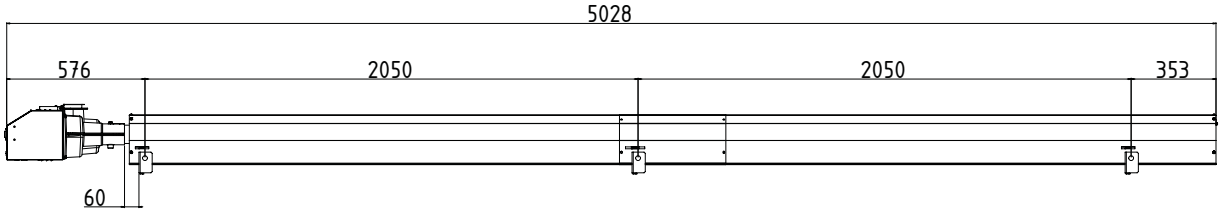
Model	Units	BTHE40	
Gas type	-	Natural gas (G20)	Propane (G31)
Nominal net heat input	kW PCI	40.5	40.5
Nominal gross heat input	kW PCS	45.0	44.2
Combustion efficiency	% PCI	>91	>91
Radiation factor	-	>59	>57
NOx class EN416	-	3	2
Electrical connection	-	230V / 50 Hz / single phase	
Fuse protection	Amps	1 x 5A	
Start current	A	0.90	
Run current	A	0.26	
Absorbed power	W	55	
Combustion air / flue	-	A2, B22, B52, C12, C32	
Combustion air inlet type A and B	mm	Ø59	
Flue gas outlet type A and B	mm	-	
Combustion air inlet type C	mm	Ø54	
Flue gas outlet type C	-	-	
Air pressure switch adjustment	Pa	51	
Extract fan discharge	mm	Ø133	
Flue connection	mm	Ø100	
Gas connection	-	G ¾" ISO228	
Weight	kg	173	
* In line with the ErP Regulations 2024/1103 and gas directive 2009/125/CE			

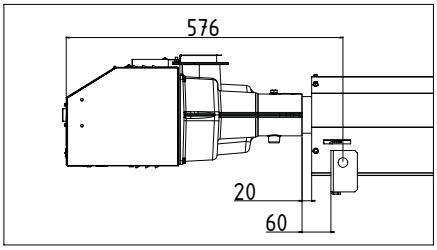
Distributed Gas		Natural gas		Propane	
Gas reference		G20	G25	G31	
Heat input (Hi) of gas reference		34.02 MJ/m³	29.25 MJ/m³	46.34 MJ/kg	46.34 MJ/kg
Heat input (Hs) of gas reference		37.78 MJ/m³	32.49 MJ/m³	50.37 MJ/kg	50.37 MJ/kg
Nominal inlet pressure (mbar)		20	20/25	37	50
BTHE40	Ø injector mm x 100	600	600	343	343
	Injector pressure mbar	7.7	11.8	33.6	33.6
	Gas flow at 15°C, 1013 mbar	4.29 m³/h	4.98 m³/h	3.16 kg/h	3.16 kg/h

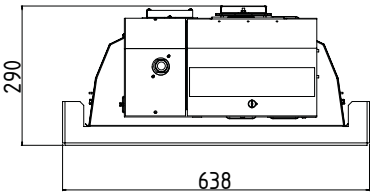
Dimension Diagrams

BTHE20

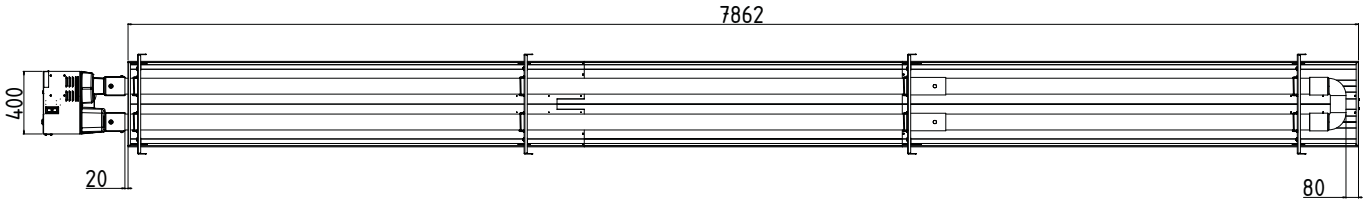


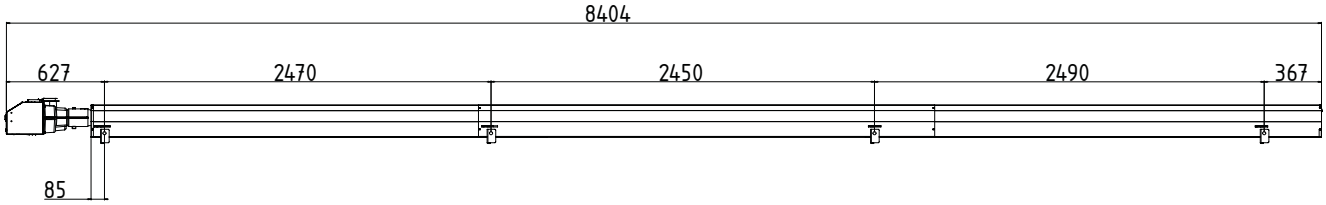


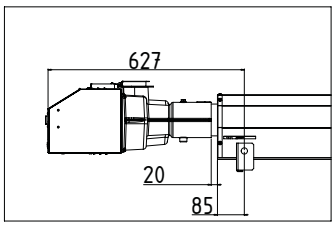


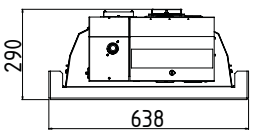


BTHE35



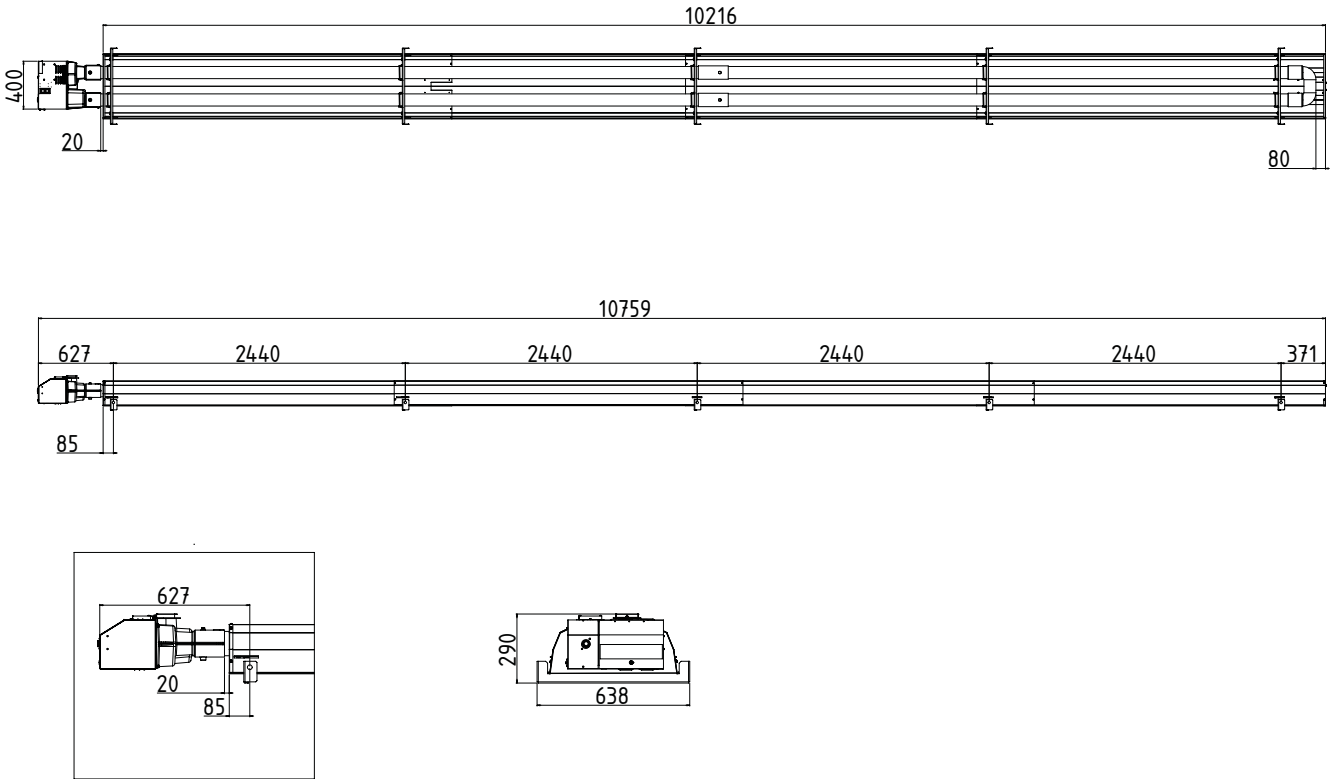






Dimension Diagrams

BTHE40



Clearances

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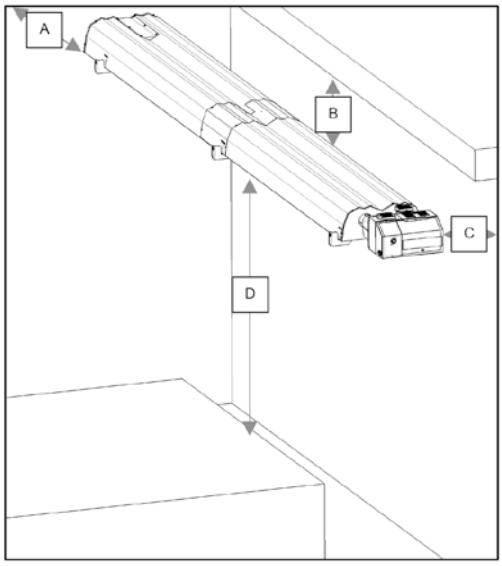
Minimum clearances

Units must be installed so that the minimum clearances shown in the diagram below are maintained. Thermal insulation must be installed between the hanging support of the appliance and the material to which it is fixed if this material is of a flammable nature.



Model	A	B	C	D
BTHE20	0.6m	0.5m	0.6m	2.0m
BTHE35	1.0m	0.5m	1.0m	2.5m
BTHE40	1.0m	0.5m	1.0m	2.5m

During the installation of an appliance above an overhead crane, provide protection for the crane motor and electrical equipment using an insulating screen if necessary.

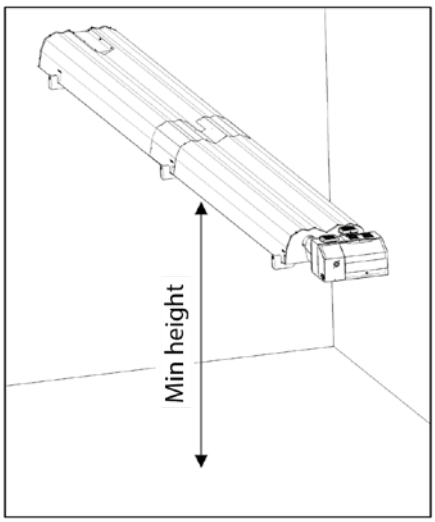
Avoid the installation of radiant tubes above bulky machines or stores which could prevent the diffusion of radiation towards the workers or users.

In the presence of lifting ramps (vehicle repair workshops) care should be taken not to fit the radiant tubes directly above these ramps. This could cause damage to vehicle bodywork or tarpaulin covers when the ramp is in the raised position.

In the case of a workshop with pits or concealed areas, the same conditions of comfort as in the rest of premises cannot be guaranteed.

Recommended mounting height

The minimum recommended mounting height in relation to the floor in the case of total heating of an enclosed building is:-



Model	Horizontal Hanging	Wall Hanging
BTHE20	4.0m	3.5m
BTHE35	5.5m	4.6m
BTHE40	6.0m	5.1m

The positioning and hanging height of the equipment depends on the structure of the building and the design heat loss calculation requirements.

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Installation

Appliance assembly BTHE20

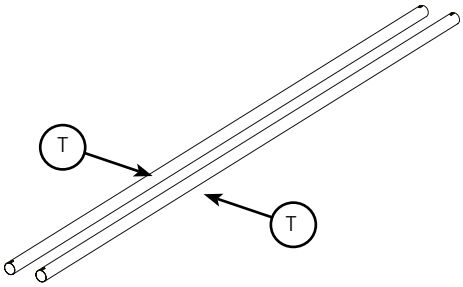
Package contents:-

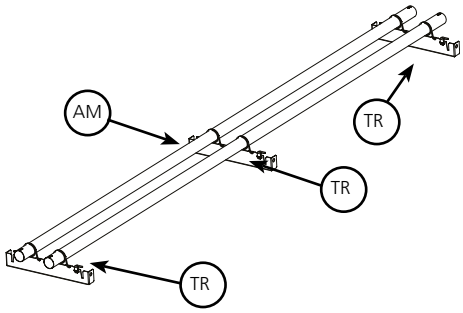
I

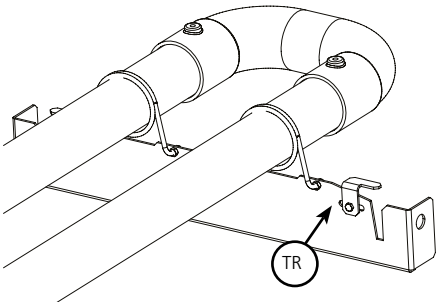
Qty	Item	Ref
1	Carton containing burner BTHE20	1038955
3	Bracket assembly	1038858
2	Tubes Ø76.1 length : 4400mm	10.30.001
1	U Tube	10.01.113
2	Reflector length : 2480mm	1008853
2	Turbulator tube Ø76.1 – length : 2000mm	1003110
1	Turbulator tube Ø76.1 – length : 1300mm	6600T
1	U bend closing plate	1038861
1	U bend end cap	1038862
1	Burner end cap	1038859

Appliance assembly

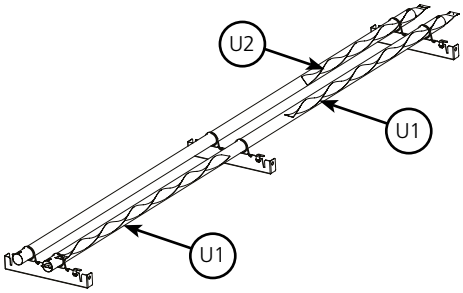
The 2 tubes (T) are identical and can be fitted in either direction. Position the tubes in the retaining rings (AM) fixed to the brackets (TR). Pay attention to the direction of the brackets (TR). The suspension holes must always point towards the U tube.

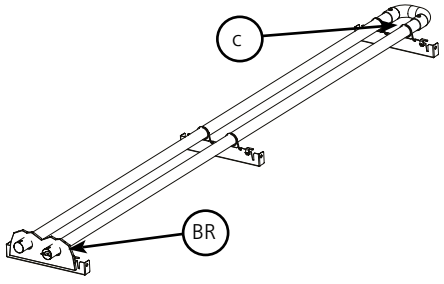


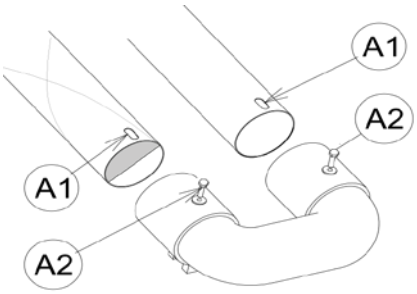




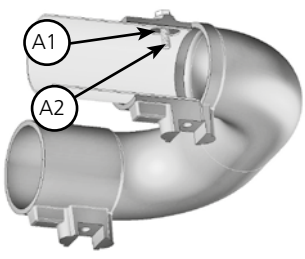
Position the turbulators inside the tubes. Position the 2m long turbulators (U1) at each end of the tube on the extractor side. Position the 1.3 m turbulator (U2) at the end of the tube on the burner side. Fit the U tube (C) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube to ensure that the U tube is held in place Position the burner end cap (FR) on the burner side.

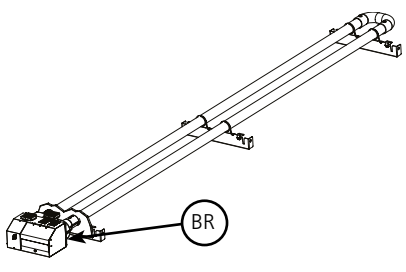


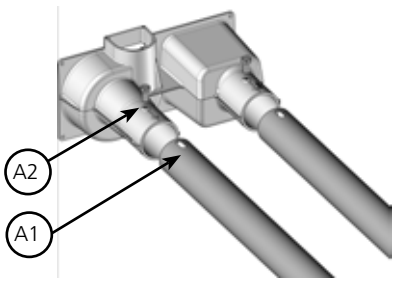




Fit the burner (BR) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube to ensure that the burner is held in place.

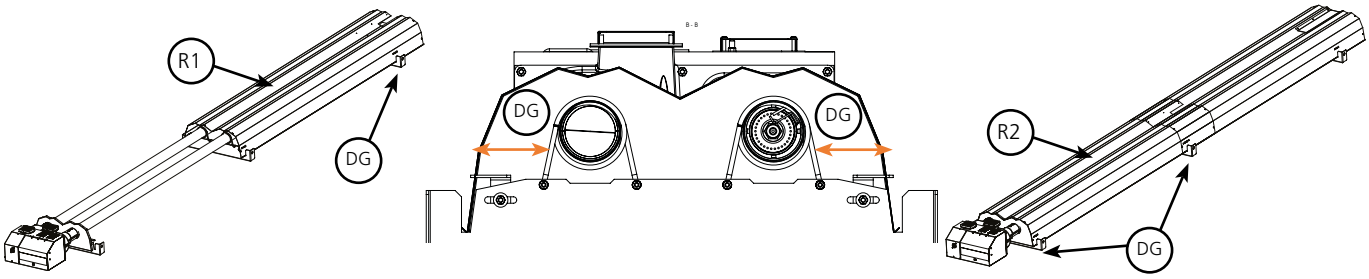




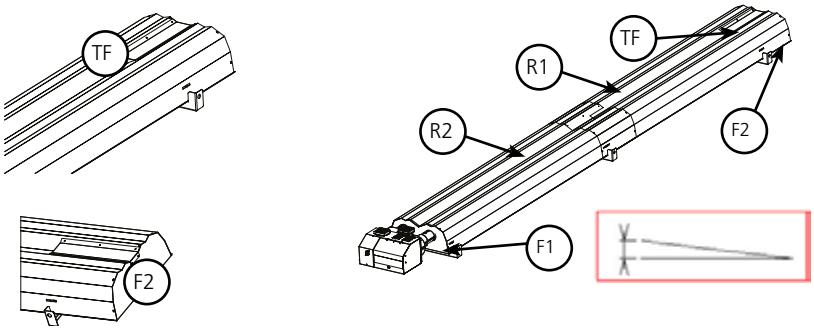


Caution: Remove the protective film from the reflectors (R*). Turn the reflector fixing pins (DG) to the open position. Place the first reflector (R1) on the U tube end with the offset on the U tube end in the bracket notches. Screw the reflector (R1) onto the U tube end cap (F2). Turn the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflector (R1) in place.

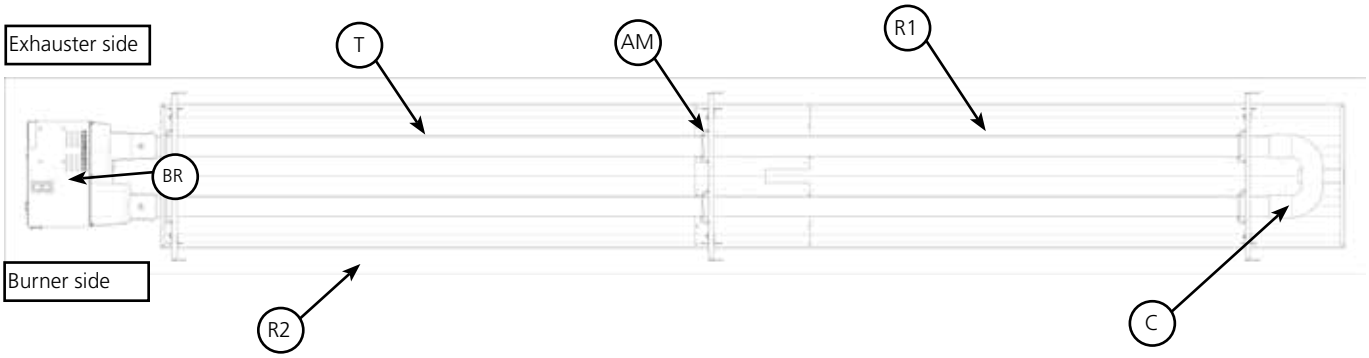
Place the second reflector (R2) on the burner side with the offset on the U tube side in the bracket notches. Turn the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R1) and (R2) in place.



Screw the burner end cap (F1) on the burner side to the reflector (R2). Screw the U bend closing plate (TF) onto the reflector (R1) on the U tube side. The total slope of the appliance must be 40mm ±10 in the direction of the U tube.



Bottom view, unit fitted BTHE20



Appliance assembly BTHE35

Package contents:-

Qty	Item	Ref
1	Carton containing burner BTHE35	1038955
4	Bracket assembly	1038856
2	Tubes Ø101.6 length : 5200mm	10.30.116-GAZ
2	Tubes Ø101.6 length : 2515mm	10.30.117-GAZ
1	U tube	10.01.116-1
2	Tube connector	12.01.005-GAZ
3	Reflector length : 2915mm	1038864
1	Turbulator tube Ø101.6 – length : 976mm	6618T
2	Turbulator tube Ø101.6 – length : 2500mm	1003244
1	U bend closing plate	1038861
1	U bend end cap	1038862
1	Burner end cap	1038865

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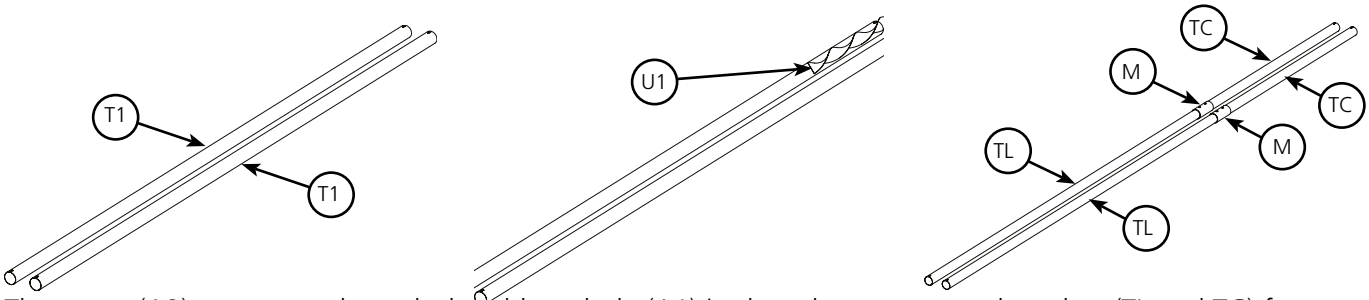
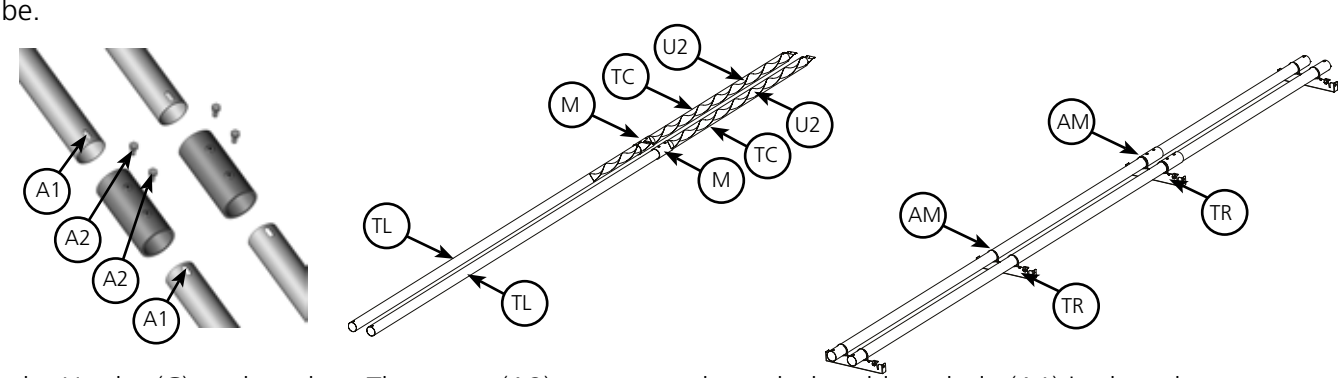
Appliance assembly

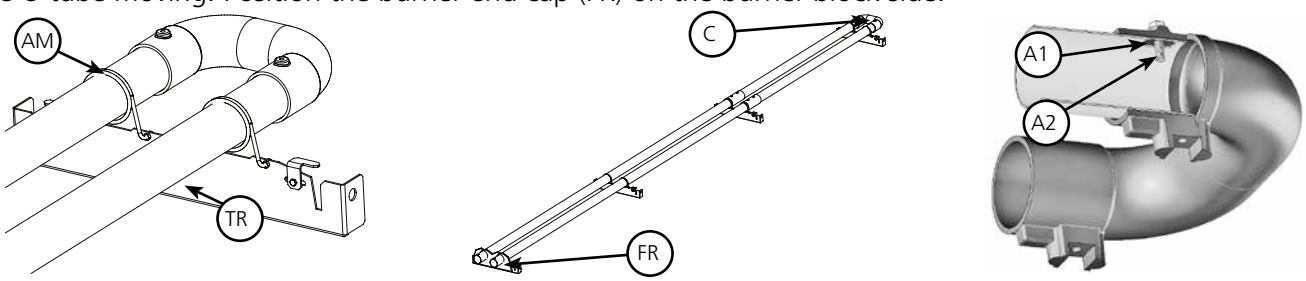
The 2 tubes (TL) are identical and can be fitted in either direction. Position the short turbulator (U1) inside the tube on the burner side. Fit the 2 tube connectors (M) at the end of each long tube (TL) and the short tubes (TC) in succession.



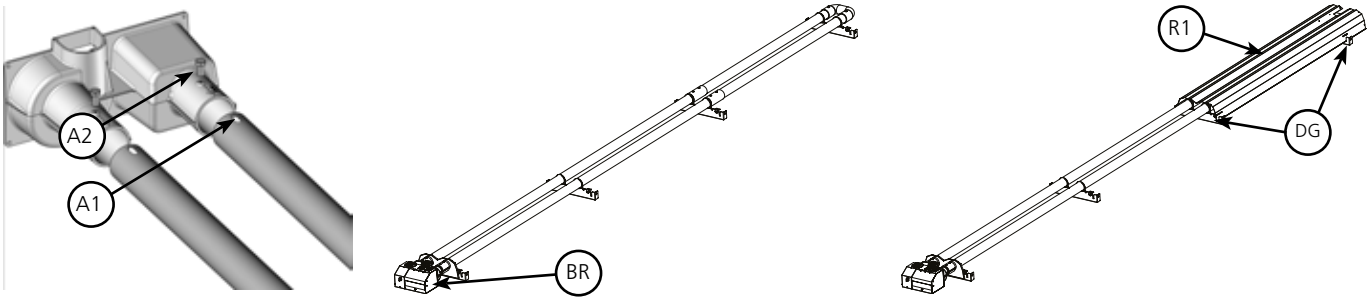
The screw (A2) must pass through the oblong hole (A1) in the tube to prevent the tubes (TL and TC) from moving. Position the long turbulators (U2) inside the short tubes on the U bend side. Position the tubes in the retaining rings (AM) fixed to the brackets (TR). The suspension holes must always point towards the U tube.



Fit the U tube (C) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube to stop the U tube moving. Position the burner end cap (FR) on the burner block side.



Fit the burner (BR) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube in order to stop the burner moving.



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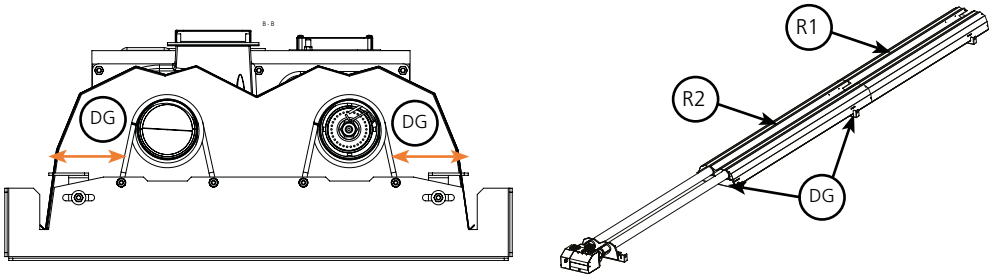
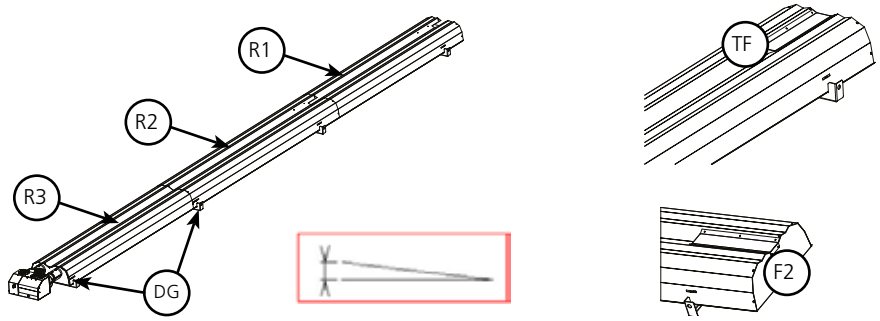
Caution: Remove the protective film from the reflectors (R*). Move the reflector fixing pins (DG) to the open position. Place the first reflector (R1) on the U tube side with the offset on the U tube side in the notches in the brackets. Screw the reflector (R1) onto the U tube end cap (F2). Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflector (R1) in place. Place the second reflector (R2) with the offset on the U tube side in the bracket notches. Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R1) and (R2) in place.

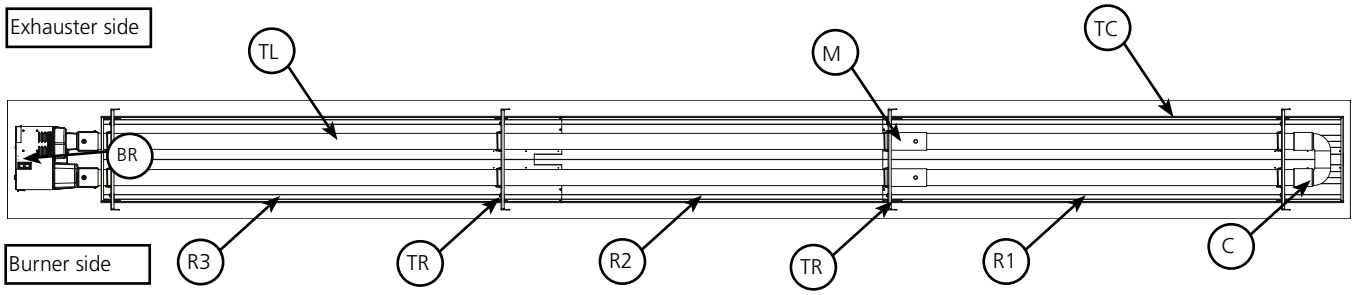


Place the last reflector (R3) with the offset on the U tube side in the bracket notches. Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R2) and (R3) in place. Screw the burner end cap (F1) on the burner side to the reflector (R3). Screw the U bend closing plate (TF) to the reflector (R1) on the U tube side.



The total slope of the appliance must be 40mm ±10 towards the U tube.

Bottom view, unit fitted BTHE35



Appliance assembly BTHE40

Package contents:-

Qty	Item	Ref
1	Carton containing burner BTHE40	1038955
5	Bracket assembly	1038856
2	Tubes Ø101.6 length : 5200mm	10.30.116-GAZ
2	Tubes Ø101.6 length : 4870mm	10.30.211
1	U tube	10.01.116-1
2	Tube connector	12.01.005-GAZ
4	Reflector length : 2915mm	1038864
2	Turbulator tube Ø101.6 – length : 2500mm	1003244
1	U bend closing plate	1038861
1	U bend end cap	1038862
1	Burner end cap	1038865

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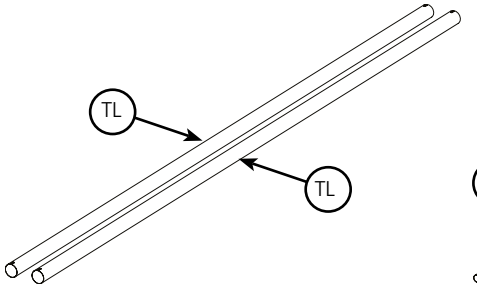
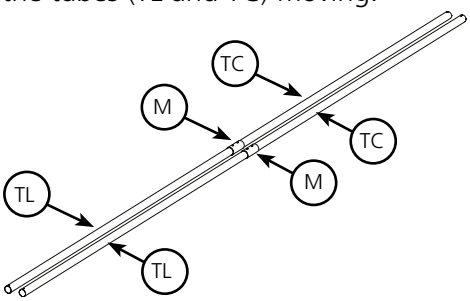
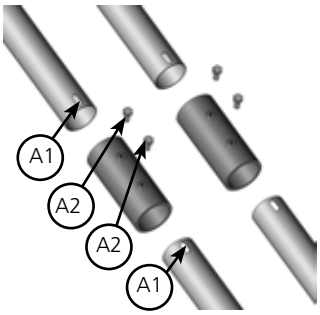
Appliance assembly

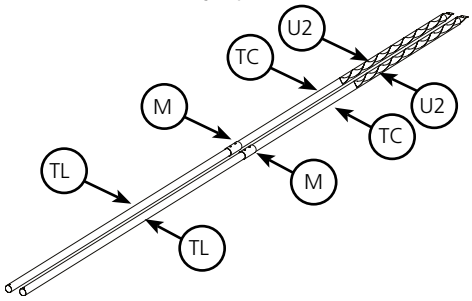
The 2 tubes (TL) are identical and can be fitted in either direction. Fit the 2 tube connectors (M) at the end of each long tube (TL) and the short tubes (TC) in succession. The screw (A2) must pass through the oblong hole (A1) in the tube in order to stop the tubes (TL and TC) moving.

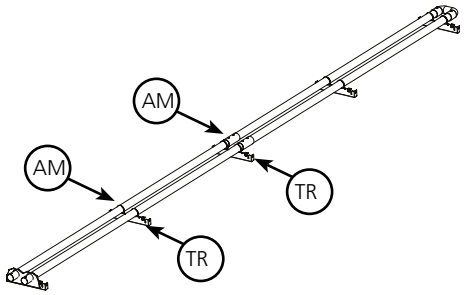


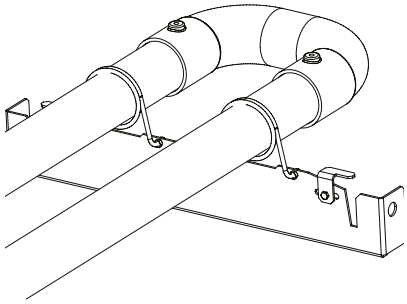




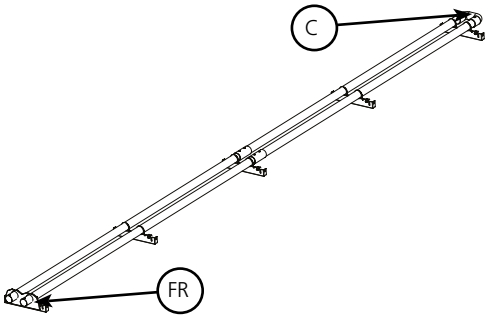
Position the long turbulators (U) inside the short tubes on the elbow side. Position the tubes in the retaining rings (AM) fixed to the brackets (TR). Pay attention to the direction of the brackets (TR). The suspension holes must always point towards the U tube.

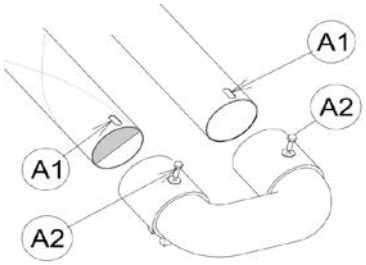


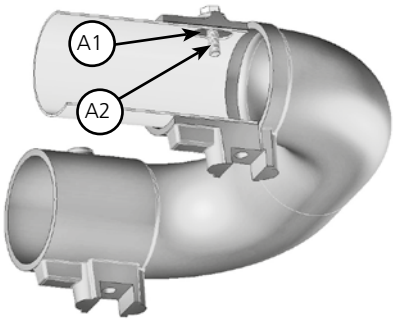




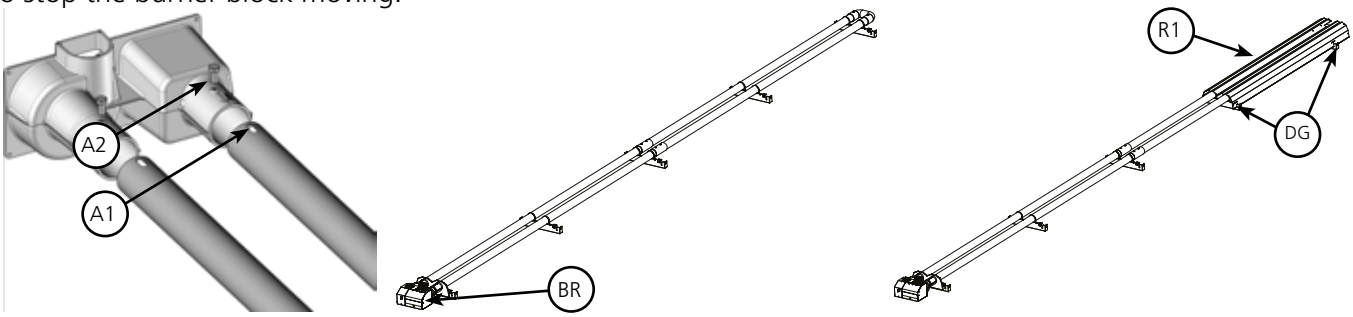
Fit the U tube (C) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube to stop the U tube moving. Position the burner end cap (FR) on the burner side.



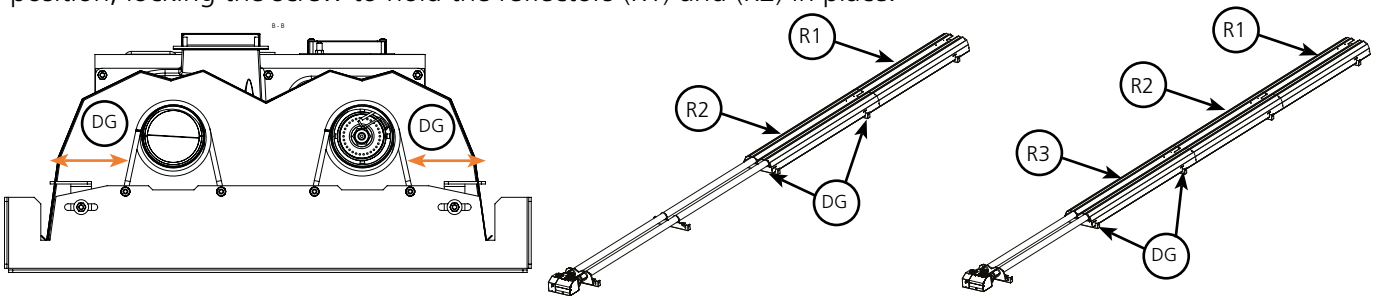




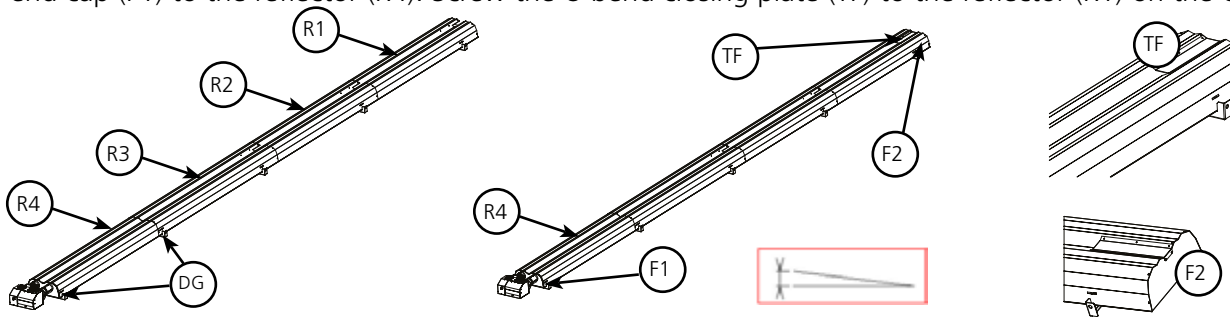
Fit the burner (BR) to the tubes. The screw (A2) must pass through the oblong hole (A1) in the tube in order to stop the burner block moving.



Caution: Remove the protective film from the reflectors (R*). Move the reflector fixing pins (DG) to the open position. Place the first reflector (R1) on the U tube side with the offset on the U tube side in the notches in the brackets. Screw the reflector (R1) onto the U bend end cap (F2). Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflector (R1) in place. Place the second reflector (R2) with the offset on the U tube side in the bracket notches. Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R1) and (R2) in place.

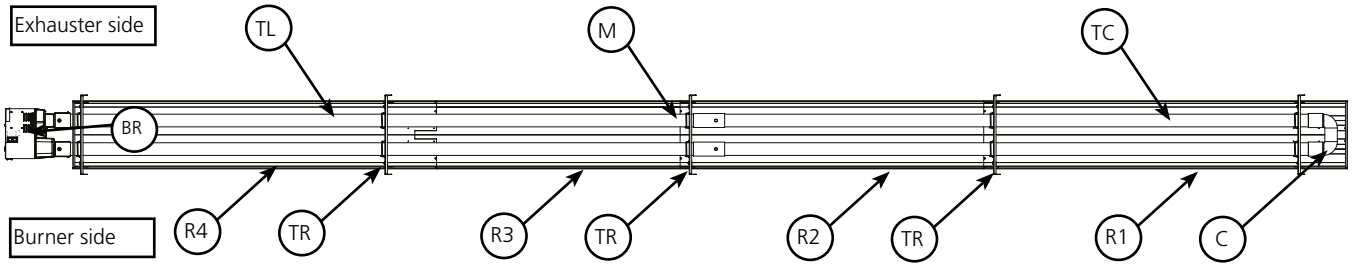


Place the third reflector (R3) with the offset on the U tube side in the bracket notches. Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R2) and (R3) in place. Place the last reflector (R4) with the offset on the U tube side in the bracket notches. Move the reflector fixing pins (DG) to the closed position, locking the screw to hold the reflectors (R3) and (R4) in place. Screw the burner end cap (F1) to the reflector (R4). Screw the U bend closing plate (TF) to the reflector (R1) on the U tube side.



The total slope of the appliance must be 40mm ±10 towards the U tube.

Bottom view, unit fitted BTHE40



Suspension / fixing

Suspend the radiant tubes with chains or cables of suitable length, fixed to the roof structure, under brackets or gantries, between columns or against a wall. Hanging accessories can be supplied as an option.

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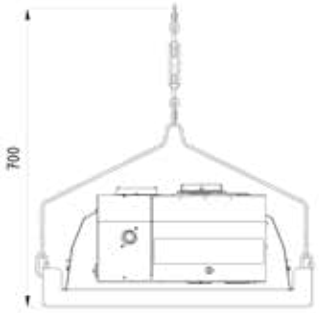


Horizontal hanging

Wall hanging

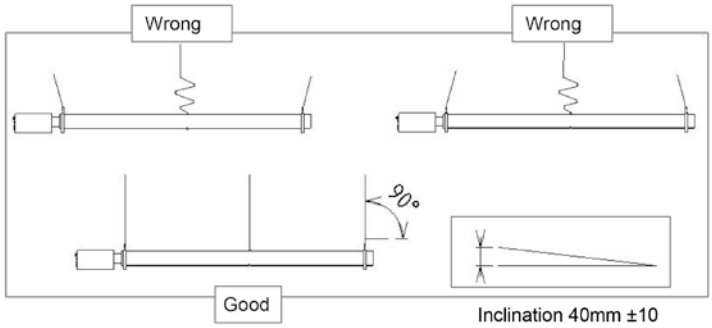
ATTENTION: For a good system efficiency, do not incline the unit greater than 30°

Kit composition:

Model	Horizontal Hanging Kit Reference	Wall Hanging Kit Reference
BTHE20	0340131	0340119
BTHE35	0340132	0340120
BTHE40	0340133	0340124

Safety instructions

Care must be taken to install the anchor points perpendicular to the end supports.

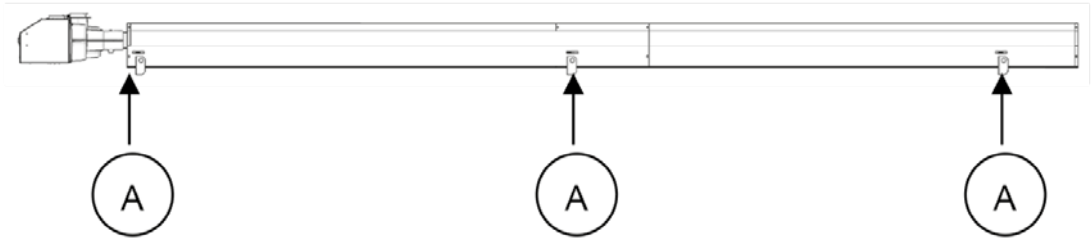


The total gradient of the heater must be 40mm ± 10mm in the direction of the U bend.

Very important:

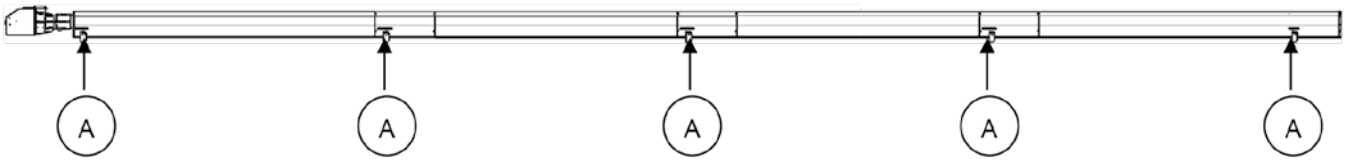
Make use of a flexible suspension system enabling the expansion of the emitter tubes but avoiding extreme oscillations. Wall brackets, supplied on request, take this into account

Model BTHE20 has 3 anchor points



Model BTHE35 has 4 anchor points

Model BTHE40 has 5 anchor points



A designates required anchor points

Combustion air supply / flue arrangement

BTwin BTHE radiant tube heaters can be operated as flued or un-flued appliances in accordance with the relevant national requirements in the country of the installation.

Type A - un-flued, discharging the combustion products directly into the surrounding atmosphere

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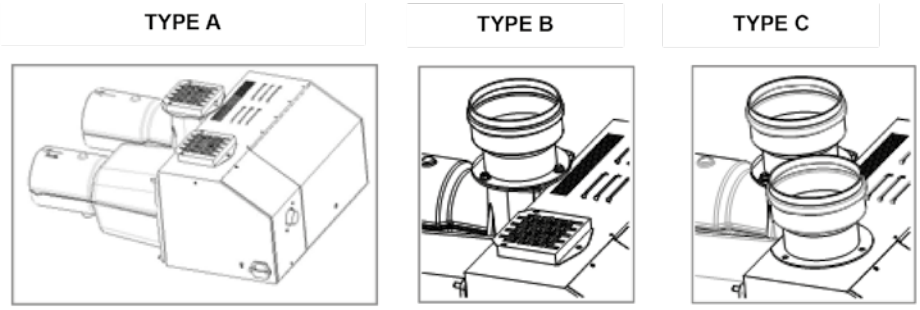
Type B - Individual flueing of each unit to the outside of the building or connecting all appliances to a flue manifold system.

Type C - Balanced flue system, with combustion air and the products of combustion taken/discharged from/ to outside (by a concentric flue or separate flue pipes).

The following instructions on air exchange are intended to ensure the correct operation of the units.



Type A appliances

When operating radiant tube heaters as un-flued appliances, the concentration of Carbon Dioxide (CO2) at positions where the air will be inhaled must not exceed 0.28%. EN13410 is a guide to achieving this requirement. If the building air change rate exceeds 1.5 per hour or if the heat input is less than 5W/m^3, no additional ventilation is required. In addition to the ventilation requirements, consideration needs to be given to the possibility of condensation forming on cold surfaces. It should be noted that the clearance distance around the burner increases when the unit is operated un-flued. It should be ensured that the combustion gases do not impinge on any combustible materials.

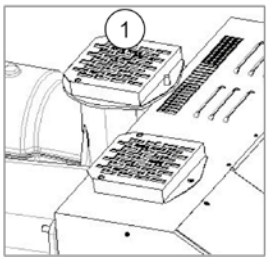
Mechanical ventilation must be rated at the minimum 10m^3/h per kW input using approximately sized fans and interlocked with heaters. EN 13410: should be used to size air vents to provide adequate ventilation, an example of this calculation is given below:

• Site Details: 20°C internal operating temperature , 0°C Outside Air Temperature, 5m between high and low level vents

Following the sizing procedure in EN 13410, gives an air exit velocity of 1.6m/s. This equates to a free area vent at both high level and low level of 17.36cm^2/kW free area.

Type B appliances

Type B - Individual flueing of each unit to the outside of the building

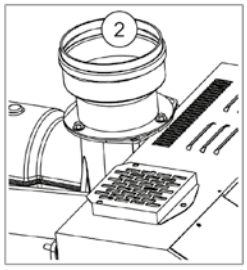


- Remove the combustion product outlet grille (1).

- Fit the Ø100 connection piece (2) for Ø97.

- The grille must not be used to protect the end of a flue pipe.

- The air intakes in the room must be sufficient to allow a good supply of combustion air to the burners



Provide a fresh air intake air flow of at least 1.75 m^3/h per installed kW.

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SAFETY INSTRUCTIONS FOR THE INDIVIDUAL FLUE :

- No reduction in diameter is permitted after the flue outlet.

- The flue must be made of stainless steel or aluminium with a smooth rigid flue.

- The flue must be installed in accordance with the standards in force in each country concerned.

- The maximum length of flue pipe must not exceed 8 metres straight + 3 x 90° elbows + 1 rain screen terminal (see table of equivalent lengths below).

- The flue must not have any low points.

- Do not use any plastic or PVC accessories.

Model	Gas type	Air flow (m^3/h)	Flue gas temperature (°C)	Flue gas volume flow (m^3/h)	Flue gas mass flow (kg/h)
BTHE20	G20	23.2	183	25.3	21.2
	G25	29.4	181	31.9	27.0
	G31	33.9	181	34.7	28.4
BTHE35	G20	57.4	184	61.1	49.9
	G25	53.2	181	57.5	48.5
	G31	72.0	180	73.4	59.6
BTHE40	G20	51.9	176	56.2	47.4
	G25	60.2	177	65.2	55.6
	G31	73.6	180	75.3	61.6

Flue system equivalent lengths

Item	Equivalent Length	Item	Equivalent Length
Elbow 90°	2m	Standard rain cap	2m
Elbow 45°	1m	Rigid hose 1m	1m

Type B - connecting all appliances to a flue manifold system.

Very important:

The airflow extracted from each appliance must be equal.

The installer must comply with the regulations in force concerning mechanical exhaust and in particular:

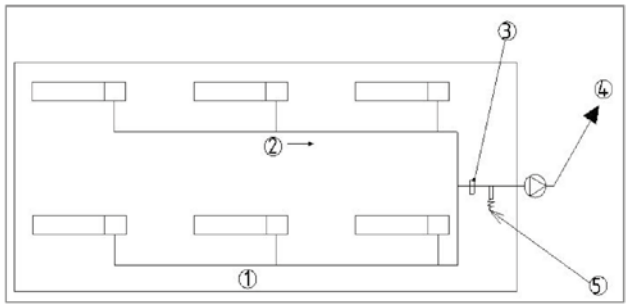
1) How to balance the network.

2) Controls and the various safety devices to be used.

It is essential to remove the combustion product outlet grille beforehand and replace it with a direct flue outlet. Connect the dilution piece to the manifold by means of a pipe making sure that the joint is on the side and not underneath. Position the dilution piece on the pipe coming from the appliance and fix the 3 fixing lugs using screws or rivets. Do not remove the threaded rod which acts as a stop.

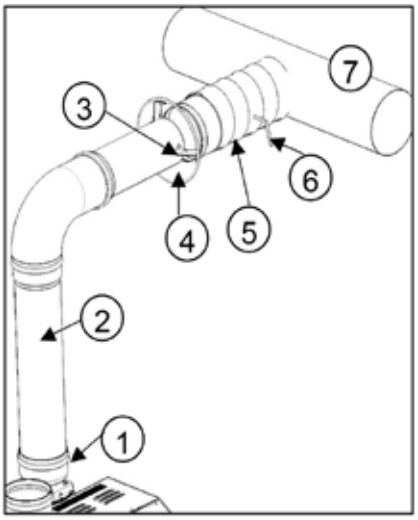
Schematic diagram

Item	Description
1	Collector flue
2	Slope 4mm per m
3	Safety pressure switch
4	Extract fan
5	Condensate collector



Connection to the collector flue

Item	Description
1	BTHE connector
2	Discharge pipe Ø100
3	Fixings at 120° (3)
4	Dilution piece Ø120 (option supplied on request
5	Nozzle Ø125 inside the manifold
6	Diaphragm or balancing damper (if network to be balanced)
7	Collector pipe connected to an extraction fan

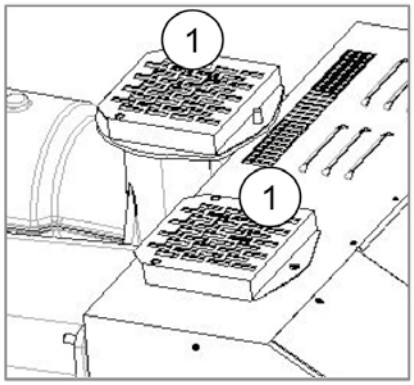


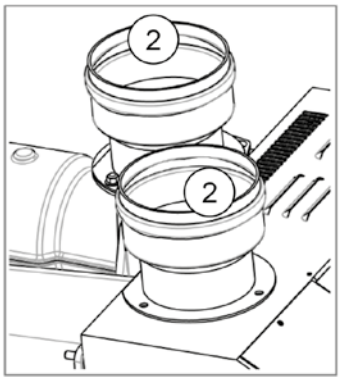
Model	Extract flow rate including dilution (m^3/h)
BTHE20	200
BTHE35	350
BTHE40	405

Air inlets must be provided to match the total airflow ($10m^3/h$ per kW)

Type C appliances

Balanced flue system, combustion and products of combustion taken from/to outside

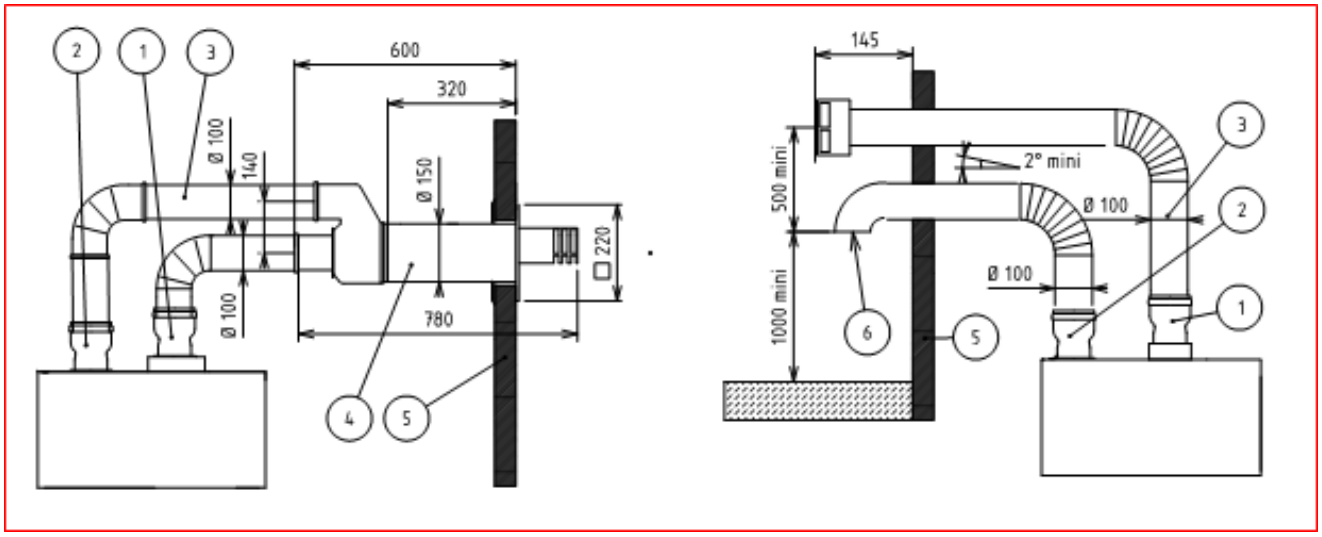




- It is essential to remove the combustion product outlet and air inlet grilles (1) before fitting the connecting pieces.

- Fit the Ø100 connecting pieces (2) in their place to receive the pipes complete with a gasket (approved with the appliance).

Type C12 appliances



Item	Description
1	Flue outlet for Ø100 sealed flues (see flue kit table)
2	Air inlet for Ø100 sealed flues (see flue kit table)
3	Ø100 watertight flue not supplied (AC TR 100)
4	Ø 150 wall cowl for Ø 100 sealed flues (AC VM 100)
5	Building exterior wall
6	Bird wire mesh

The distance between the ends of the 2 flue ducts must not be less than 500 mm. The air intake must be more than one metre above the floor or any wall other than the facade from which it emerges. The combustion product outlet must be above the combustion air intake.

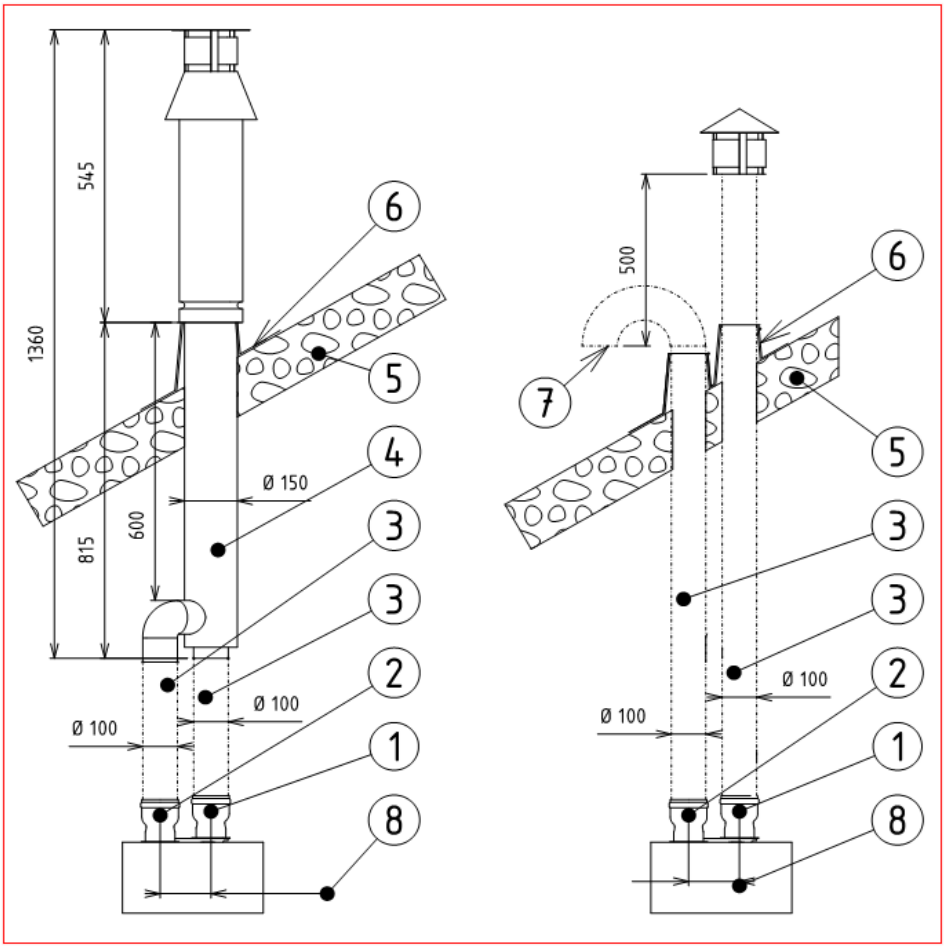
The maximum length of the pipes must not exceed :

- Exhaust: 4 metres + 2 90° elbows.

- Air inlet: 4 metres + 2 90° elbows.

(See table on p. 23)

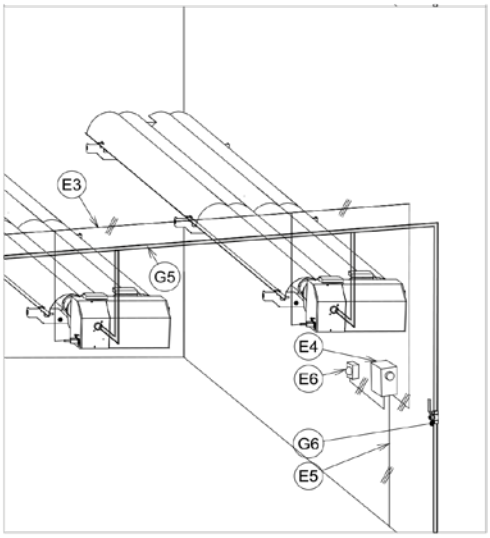
Type C32 appliances

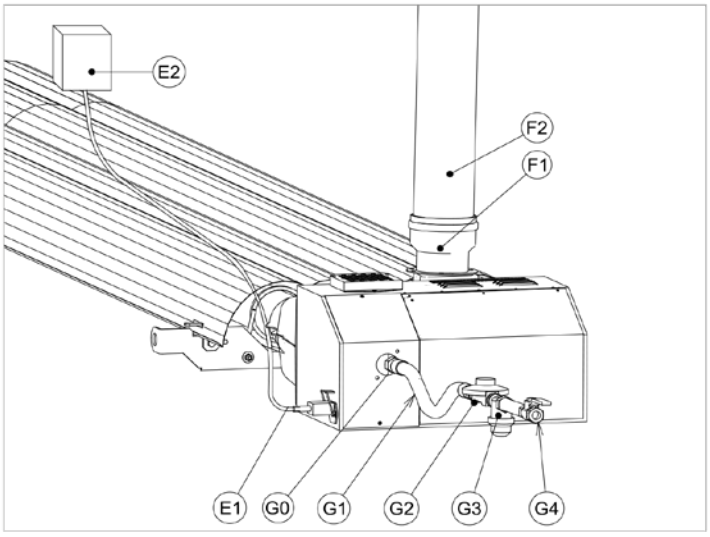


Item	Description
1	Flue outlet (see flue kit table)
2	Air inlet (see flue kit table)
3	Ø100 pipe (AC TR 100)
4	Ø 150 roof cowl for Ø 100 watertight pipes (AC VT 100)
5	Building roof
6	Waterproofing of roof not supplied
7	Bird wire mesh
8	Suction cup centre distance 182mm

Model	Flue kit reference
BTHE20	0340187
BTHE35	0340153
BTHE40	0340188

Gas and electrical connections





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Electrical connections

Ref	Description
E1	Power cable (supplied with unit) length = 1m (3 x 0.75 mm²)
E2	Junction box
E3	Power supply unit
E4	Power box (accessory Nortek Global HVAC)
E5	Power supply 230V 50Hz phase neutral earth
E6	Room Space sensor (accessory Nortek Global HVAC)

CAUTION: Under no circumstances should the electrical wiring be routed over the reflectors or the burner block

Flue system

F1	Ø100 flue outlet (Nortek Global HVAC accessory)
F2	Ø97 rigid flue pipe (not supplied)

Gas connections

G0	Appliance gas connection - G ¾" gas male
G1	Flexible pipe (special model, NF approved for public buildings) Ensure pipe is not liable to pressure load. (possible to replace with copper tube with min. Ø500mm)
G2	Pressure relief valve (installed upstream of each unit dependant on the gas supply pressure)
G3	Gas filter
G4	¼ turn shut off / isolating valve at each unit
G5	Gas pipe
G6	Main shut off / isolating valve

Gas connection

A competent and/or qualified engineer is required to either install a new gas meter to the service pipe or to check that the existing meter is adequate to deal with the rate of gas supply required. Installation pipes should be fitted in accordance with national standards so that the supply pressure, as stated in the technical data section will be achieved.

I

It is the responsibility of the competent engineer to ensure that other relevant standards and codes of practice are complied with in the country of installation. Pipes of smaller size than the heater inlet gas connection must not be used. The complete installation must be tested for soundness as described in the country of installation. Support gas piping with pipe hangers, metal strapping, or other suitable material.

Do not rely on the unit to support the gas pipework installation.

Before installation, check that the local distribution conditions, nature of gas and pressure, and adjustment of the appliance are compatible.

This appliance is designed for a maximum gas supply pressure of 50mbar. When pressure testing the supply piping with test pressures above 50mbar, disconnect the heater and manual valve from the gas supply line that is to be tested. Cap or plug the supply line.

All sealing products must be resistant to the action of liquefied petroleum gas or any other chemical constituents of the gas being supplied.

Install a ground joint union and manual shut-off gas cock upstream of the unit control system.

Check that the gas category is in accordance with the data described on the air heater.

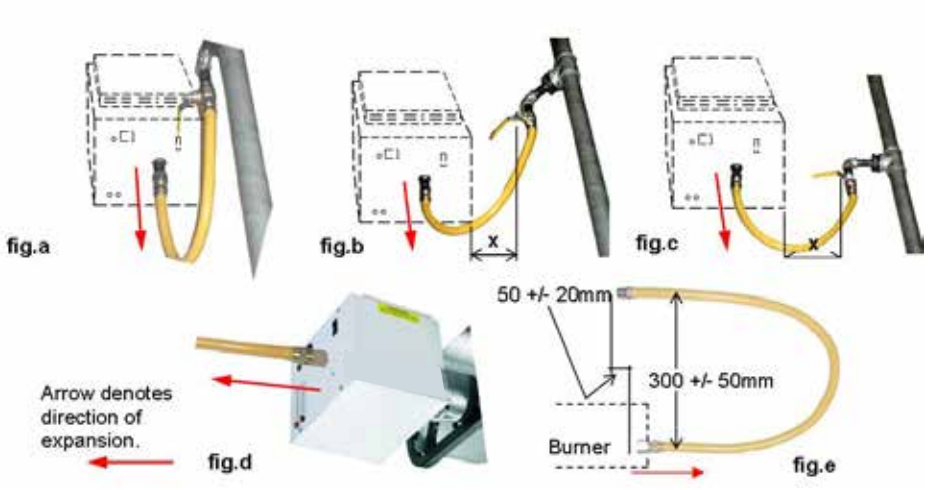
Ensure that a gas supply line includes a filter and has been tested and purged in accordance with prescribed practice prior to commissioning and taking the air heater into service.

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

Never use a flame to test for gas soundness.

BTwin BTHE radiant heaters are designed to operate on natural gas (G20) or propane (G31). Check that the gas supply, gas category and gas inlet pressure is in accordance with the information given on the unit data plate. To let the unit function at maximal heat output, the gas supply pipe MUST be correctly sized. Close to the heater a gas tap with coupling must be mounted for servicing (see below.

The whole of the gas service installation including the meter must be inspected, tested for soundness and purged in accordance with appropriate requirements by a qualified person.



Electrical supply and connections

The electrical installation may only be carried out by an appropriately qualified person in accordance with the current Rules and Regulations in force.

This appliance must be earthed.

I

Check that the electrical specification is in accordance with the specified data on the radiant heater. Connections must be in accordance with the terminal markings and the wiring diagram affixed to the unit.

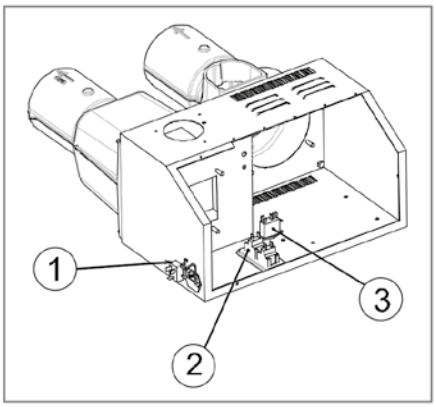
The supply line to the heater should include a mains switch / isolator adjacent to the appliance. The minimum clearance distance between the contacts must be more than 3 mm.

Check that the heater is well earthed and that an earth leakage test is carried out.

Fault signal option

This option allows the "fault" signal to be sent individually or by group of devices to a control panel or to the BMS system. To ensure complete safety, this fault signal is transmitted via a contact controlled by a relay a relay installed inside the device (3). To avoid any accidental triggering, each time the unit is switched on, it is advisable to delay the fault signal from the cabinet or the BMS by 30s.

The device is supplied as standard with a "Normally closed" fault contact. Please specify 'normally open' when ordering.

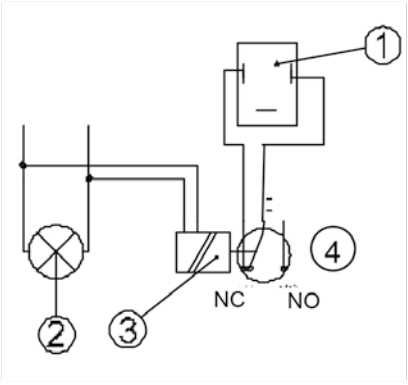


(1) Lockout relay plug

(2) Red light (default)

(3) Lockout relay

(4) Fault contact



Temperature control

It is recommended the heater or group of heaters are controlled by thermostats, a time switch and, if required, manual control switches and a frost thermostat.

We recommend the use of Nortek Global HVAC (UK) Limited approved controls. Please refer to the control manual for location and instllation details. If alternative controls are used, please refer to the relevant instructions for siting and installation details.

Commissioning and operation

BTwin BTHE heaters must be commissioned before putting into service.

Pre-start checks

Prior to starting up the unit, carry out the following checks:-

C

- Do not use this appliance if any part has been subjected to water ingress. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control.
- Check unit suspension. The unit must be secure.
- Verify that no other parts are fitted which are not individually supported and secured.
- Check gas pipework for leaks and correct gas line pressure.
- Purge gas lines of trapped air.
- Check electrical wiring and ensure that wiring conforms to the wiring diagram. Be sure that all cables are correctly sized to meet the requirements of the units.
- Verify that the appliance is earthed by conducting an earth continuity test.
- Ensure that fuses are of the correct rating and fuse value.
- Check polarity. Verify that line voltage exists between the live terminal L1 and earth ground.
- Check that no combustibles are near to the unit. The applicable requirements are in the location and installation section of this manual.
- Check vent system to be sure that it is installed according to the combustion air supply instructions given in the installation section of this manual.

Programming

The timer should be set so that start-up is triggered approximately 30 minutes before the room is occupied. This delay should be modified according to the inertia of the building and the outside temperature. If the outside temperature is very low, it is advisable not to switch the system off during unoccupied hours, but simply to lower it if necessary. It is not advisable to switch off the system for short interruptions in the use of the premises.

Start up

For your safety, follow the instructions exactly otherwise damage or injury could occur!

During start up all gas services (up to the gas meter) must be checked again for gas soundness to ensure no leaks are present.

After the gas line has been pressure tested:-

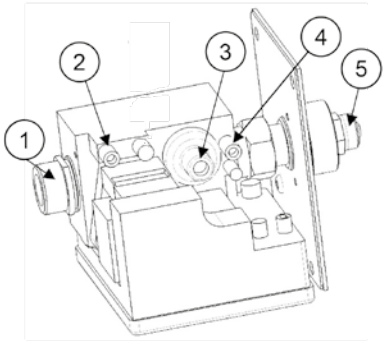
- Purge the gas line
- Check that the electrical supply is correctly installed and available
- Check that the flue installation is correctly installed

OPERATING CYCLE :

- All burners need commissioning prior to operation. Ensure the gas supply and injector pressure are correct. Operations to be carried out in the order given below:
- Check the inlet pressure to the appliance during operation using a manometer connected to the pressure tapping (2)
- Check the injector pressure at the injector pressure tapping (4) (see values in the technical data table).
- Adjust the pressure at the injector using the adjusting screw (3) (see values in technical data table).
- Fix appropriate gas type label to the burner casing

C

Ref	Description
1	Solenoid valve inlet
2	Inlet pressure tapping. Undo the screw to measure the pressure
3	Pressure regulator (remove cover to access the regulator screw)
4	Injector pressure tapping. Undo the screw to measure the pressure
5	Brass injector (engraved in mm x 100)



- With a gas and electrical supply to the appliance, the orange LED light comes on and the sequence begins with a pre-purge of 30 seconds after the air pressure switch is switched on.
- The ignition sequence is started and the gas solenoid valve opens.
- When the probe detects the flame, the ignition sequence stops and the appliance operates as long as the appliance is supplied with gas and electricity.
- If for any reason the flame is no longer detected, the solenoid valve closes and the appliance will make a second ignition attempt and start a new cycle.
- After three ignition cycles, the appliance goes into lockout mode and the red LED lights up.
- The ignition sequence can only be resumed by disconnecting and reconnecting the power supply only after a few seconds.
- During operation, only the orange LED light remains on, with continuous monitoring of the vacuum and flame.
- In the event of a fault, refer to the Troubleshooting section later in this document.

Maintenance and servicing

Maintenance schedule

Before commencing, turn off the main gas supply and switch off the main electricity supply.

Always consult your distributor at the slightest doubt.

The heater will operate with a minimum of maintenance. It is recommended that maintenance is carried out at least once a year by a suitably qualified person. More frequent servicing may be required dependent upon the environmental circumstances where the unit is installed. Regular inspection is necessary, especially in dirty areas, to assess the servicing frequency.

MS

The following procedures should be carried out at least once each year:

General

- Check condition and security of flue and combustion air system.
- Check for security and worthiness of the suspension or mounting system.
- Check the burner for evidence of physical damage.
- Check the burner for scale, dust, or lint accumulation. Clean if required.
- Check the vent or vent/combustion air system for soundness. Replace any parts that do not appear sound.
- Check the wiring for any damage. Replace damaged wiring.

Heat emitter tubes

- Using a wire brush, dust the outside of the tubes and inspect the inside by removing the burner block.
- The tubes should be cleaned internally if there is an appreciable layer of dust. Use an appropriate diameter swab and an industrial hoover.

Reflector

- Inspect the condition of the reflector and, if necessary, clean it with a soft cloth and diluted detergent.

Combustion fan

- Check that the fan rotates freely and remove any deposits from the blades using a brush. Also remove any dust from the fan casing.

Motor and motor shaft cooling fan

- Remove dust using compressed air and clean the fan blades and motor vents.

Ignition and control box

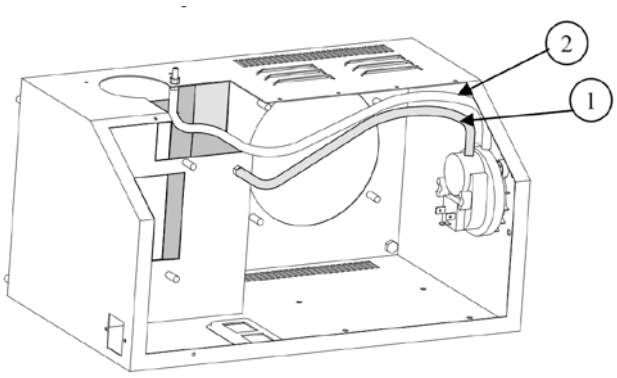
- Dust if necessary.
- Check that the control contacts are working correctly.

Gas train

- Disconnect the solenoid valve wires.
- Remove the gas line, accessed by removing the fixing screws on the front panel.
- Clean the injector, burner and burner head.
- Clean the solenoid valve filter, the expansion valve filter and the cartridge filter.
- Disconnect the electrode, inspect it, brush it and replace it if necessary. Check the gap (should be 4 mm).

Pressure switch

Ref	Description
1	Burner pressure hose (green pipe)
2	Pressure plug on air inlet



MS

Open the top cover, disconnect the wires from the micro switch (marking them) and unclip the cover, removing the pressure switch from its support

Flues

Check and clean flues in accordance with current regulations

Electrode

Remove the gas line; replace the electrode if necessary. The distance between the electrode and the earth electrode must be 3 to 4 mm.

Burner and injector

Remove the gas line. Unscrew the burner, unscrew the injector and change it if necessary. If the injector is removed, the gasket must be replaced.

Ignition and control box

To dismantle, remove the fixing screw on the housing cover that holds the housing to the solenoid valve. Disconnect the connectors and the HT ignition lead.

Motor / fan assembly

Unscrew the 4 nuts holding the motor. The fan / motor assembly can now be removed easily. To remove the fan blades, use an Allen key to unscrew the hexagonal socket head cap screw on the flat of the motor shaft.

Changing gas type

- The appliance must be converted by a qualified operator.
- The injector (5) is the only part that needs to be changed to switch from one gas to another.
- The technical data table earlier gives the different injector diameters that must be used.
- The technical table indicates the pressure setting value at the injector that must be used as well as the supply pressure range.

NOTE: A conversion kit is available on request (see our spare parts price list). It includes: the injector, the gasket and the gas type label (this must be stuck on the old label).

Operations to be carried out in the order given below:

- Check the inlet pressure to the appliance during operation using a manometer connected to the pressure tapping (2)
- Check the injector pressure at the injector pressure tapping (4) (see values in the technical data table).
- Adjust the pressure at the injector using the adjusting screw (3) (see values in technical data table).
- Fix appropriate gas type label to the burner casing

MS

Ref	Description
1	Solenoid valve inlet
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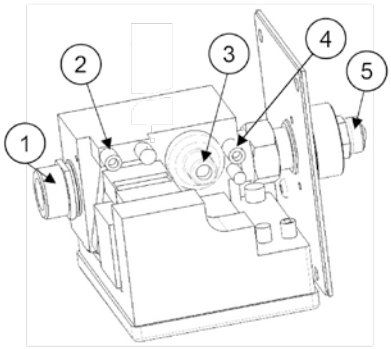
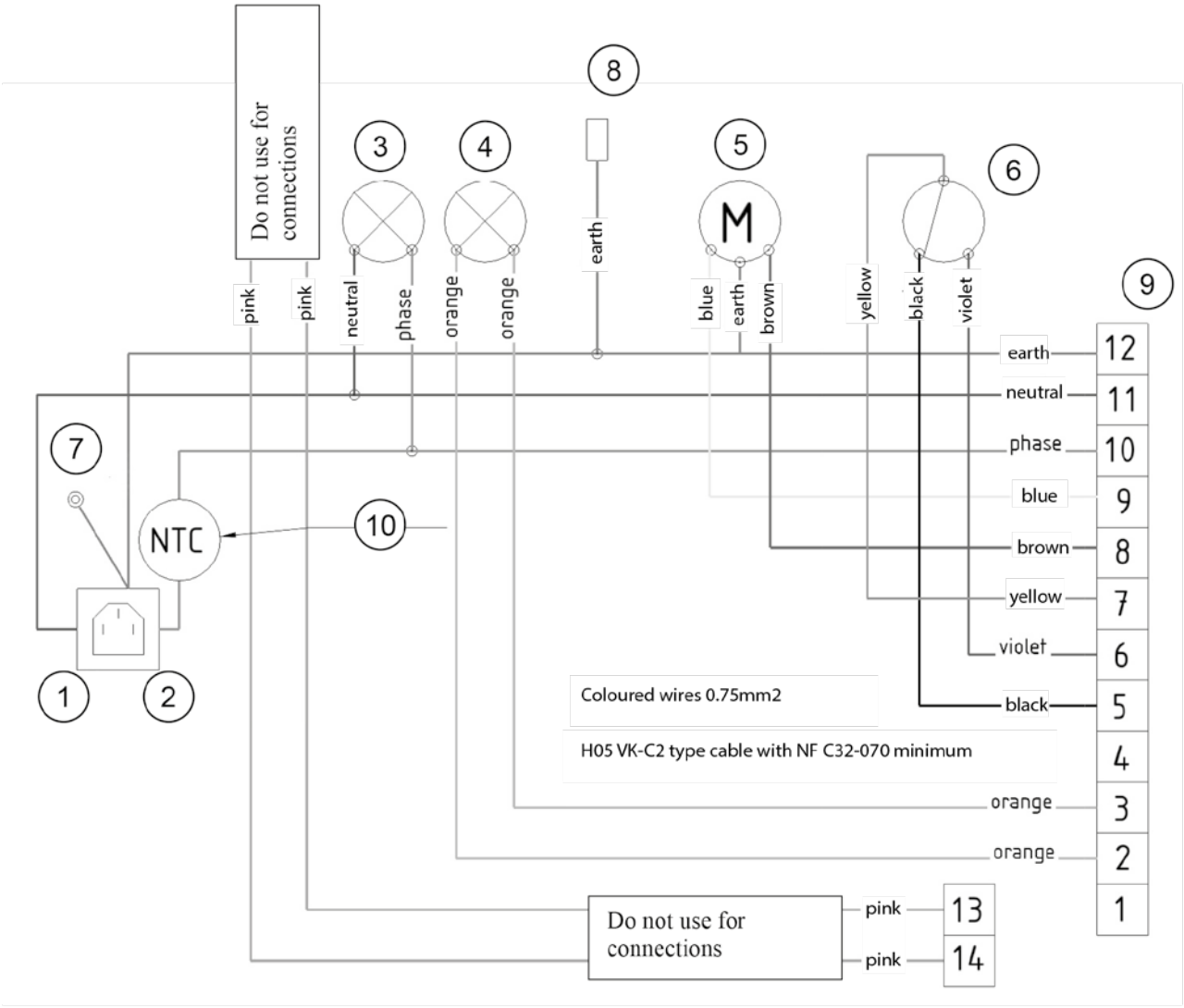


Wiring diagram

Ref	Description
1	230V power socket
2	Fuse
3	Orange "On" light
4	Red "Fault" light
5	Combustion fan motor
6	Pressure sensor
7	Sheet metal housing
8	Solenoid valve
9	230V connector
10	NTC cable

MS



Fault Finding

Before replacing any components internal to the appliances, check that:

1) The electrical supply of appliances is correct.

2) The gas is correctly supplied until the gas inlet of one or several appliances (gas filter cleaned).

Fault	Possible cause	Remedy
The motor does not run	Impeller jammed Motor seized up or failed Blown fuse	Clean the fan casing Unseize and/or change Replace the fuse
The motor runs but the appliance does not ignite	Blocked flue Faulty motor Bent or disconnected pressure switch pipes Faulty ignition box Dirty impeller	Check - Clear Inspect, clean or change Ensure that the pipes are correctly fitted and not blocked Inspect and change To be cleaned (compressed air)
The pressure switch works correctly but there are no ignition sparks	Cracked electrode Ignition electrode gap too great Faulty control box	Inspect and change Inspect and adjust (3 mm ± 1 mm) Inspect and change
Sparks occur but the burner does not ignite	Faulty solenoid valve Ignition and control box problem Electrode out of position No gas supply	Inspect and change Inspect and change Reposition accordingly Check and reinstate
Ignition occurs but the appliance stops afterwards	Faulty flame control Faulty ignition box	Check the ionization sensor and electrical connections To be changed
Abnormal noise. Ignition problems	Faulty burner. Friction at fan Motor bearing defect Coupling of emitter tubes	Check operation Adjust as necessary Change motor Correct and verify

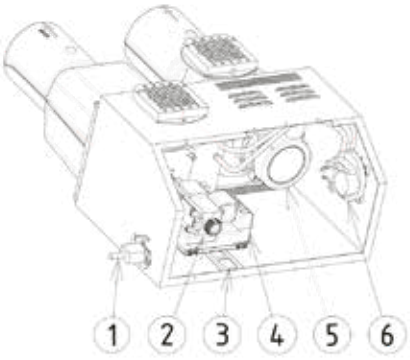
FF

Spares

Options available on request

Item	Part number
Fault relay: Normally Closed	0240016

Parts



Ref	Item	Image	BTHE20	BTHE35	BTHE40
2	Gas valve		10 21 210		
1	Plug and socket kit		02 80 217		
4	Electronic control unit		10 21 218		
-	Single electrode assembly		10 30 016		
3	Orange indicator light		10 25 243		
3	Red indicator light		10 25 244		
5	Fan / motor assembly		06 10 032		
6	Pressure sensor		10 21 208-49	10 21 208-69	10 21 208-51
-	Natual gas burner assembly with incorporated fan	-	0910745-N-REZ	0910746-N-REZ	0910747-N-REZ
-	Propane burner assembly with incorporated fan	-	0910745-P-REZ	0910746-P-REZ	0910747-P-REZ

SP

Information required for Ecodesign (ErP) Regulation 2024/1103 - BTHE20

Gas type		Natural gas	Propane
Seasonal energy efficiency	ns >=80.0%	80.3%	80.5%
Nox emissions (*)	mg/kWh input (PCS) <=180	129	178
Thermal power			
Nominal thermal output Pnom	kW	18.2	18.0
Minimum thermal output Pmin	kW	N/A	N/A
Radiation factor			
Radiation factor at rated thermal output RFnom	-	0.6	0.6
Radiation factor at minimum thermal output RFmin	-	N/A	N/A
Useful efficiency (HCV) - Radiant tube heating			
Useful efficiency at rated thermal output nth,nom	%	82.1	83.2
Useful efficiency at minimum thermal output nth,min	%	N/A	N/A
Envelope losses			
Envelope insulation class U	$W/(m^2K)$	N/A	N/A
Envelope loss coefficient Fenv	%	0.0	0.0
Heat generator to be installed outside the heated area	-	No	No
Auxiliary electricity consumption			
At rated thermal output elmax	kW	0.051	0.051
At the minimum thermal output elmin	kW	N/A	N/A
In standby mode elsb	kW	N/A	N/A
Type of heat output control (select one type only)			
1 stage	-	Yes	Yes
2 stage	-	No	No
Modulating	-	No	No
Electrical power required by the permanent pilot light			
Electrical power required by permanent pilot (if applicable) Ppilot	kW	N/A	N/A
(*) NOx = nitrogen oxides			

ErP

Information required for Ecodesign (ErP) Regulation 2024/1103 - BTHE35

Gas type		**Natural gas**	**Propane**
Seasonal energy efficiency	ns >=80.0%	80.5%	82.2%
Nox emissions (*)	mg/kWh input (PCS) <=180	129	176
Thermal power			
Nominal thermal output Pnom	kW	31.9	32.0
Minimum thermal output Pmin	kW	N/A	N/A
Radiation factor			
Radiation factor at rated thermal output RFnom	-	0.6	0.6
Radiation factor at minimum thermal output RFmin	-	N/A	N/A
Useful efficiency (HCV) - Radiant tube heating			
Useful efficiency at rated thermal output nth,nom	%	82.1	83.8
Useful efficiency at minimum thermal output nth,min	%	N/A	N/A
Envelope losses			
Envelope insulation class U	$W/(m^2K)$	N/A	N/A
Envelope loss coefficient Fenv	%	0.0	0.0
Heat generator to be installed outside the heated area	-	No	No
Auxiliary electricity consumption			
At rated thermal output elmax	kW	0.052	0.052
At the minimum thermal output elmin	kW	N/A	N/A
In standby mode elsb	kW	N/A	N/A
Type of heat output control (select one type only)			
1 stage	-	Yes	Yes
2 stage	-	No	No
Modulating	-	No	No
Electrical power required by the permanent pilot light			
Electrical power required by permanent pilot (if applicable) Ppilot	kW	N/A	N/A
(*) NOx = nitrogen oxides			

ErP

Information required for Ecodesign (ErP) Regulation 2024/1103 - BTHE40

Gas type		Natural gas	Propane
Seasonal energy efficiency	ns >=80.0%	80.6%	80.9%
Nox emissions (*)	mg/kWh input (PCS) <=180	119	158
Thermal power			
Nominal thermal output Pnom	kW	37.2	37.1
Minimum thermal output Pmin	kW	N/A	N/A
Radiation factor			
Radiation factor at rated thermal output RFnom	-	0.6	0.6
Radiation factor at minimum thermal output RFmin	-	N/A	N/A
Useful efficiency (HCV) - Radiant tube heating			
Useful efficiency at rated thermal output nth,nom	%	82.6	84.1
Useful efficiency at minimum thermal output nth,min	%	N/A	N/A
Envelope losses			
Envelope insulation class U	$W/(m^2K)$	N/A	N/A
Envelope loss coefficient Fenv	%	0.0	0.0
Heat generator to be installed outside the heated area	-	No	No
Auxiliary electricity consumption			
At rated thermal output elmax	kW	0.055	0.055
At the minimum thermal output elmin	kW	N/A	N/A
In standby mode elsb	kW	N/A	N/A
Type of heat output control (select one type only)			
1 stage	-	Yes	Yes
2 stage	-	No	No
Modulating	-	No	No
Electrical power required by the permanent pilot light			
Electrical power required by permanent pilot (if applicable) Ppilot	kW	N/A	N/A
(*) NOx = nitrogen oxides			

Disposal and recycling

When the product reaches the end of its useful life, the person in charge of dismantling or disposing of the product shall do so in accordance with Waste Electrical and Electronic Equipment (WEEE) Regulations.

Follow the rules in force for the relevant country.

Dispose of equipment at applicable recycling facilities for electrical and electronic equipment waste.

Components such as radiant tubes, turbulators, reflectors and hanging brackets are metal and can be recycled accordingly.

By disposing of this equipment through appropriate means, it will help prevent potential hazards to the environment and to human health, which could otherwise be caused by unsuitable waste handling.

Recycling material from this product will help reduce environmental impact.

Do not dispose old electrical and electronic equipment through household waste collection.

Previous part no: Reznor, BTHE, Installation Manual, EN 2025-07, D301771 Iss 0
Current full Part No. Reznor, BTHE, Installation Manual, EN 2025-08, D301771 Iss 1

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