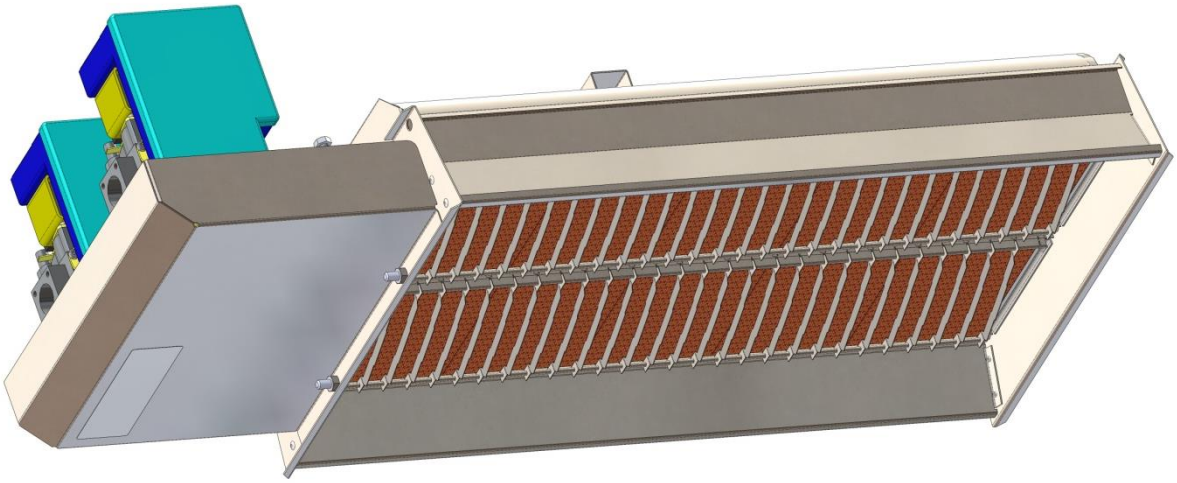
EN

RI 20-24-32-48-64 HEATERS

INSTALLER INSTRUCTIONS

(INSTALLATION - MAINTENANCE – GAS CONVERSION)

N° 05000361/08



Radiant luminous heaters with ceramic emitter
Stainless steel burner
Stainless steel body
Electronic ignition and safety device

Manufacturer:
SBM
3 cottages de la Norge
21490 CLENAY
FRANCE

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CE 1312

SUMMARY

GENERALITIES

- To improve its products, SBM reserve the right to modify the products characteristics without notice.

1. WARNINGS

Into this manual, the symbol  means "**IMPORTANT**"

Into this manual, the symbol  means "**DANGER**"

The installation and maintenance of the appliance shall be done by a qualified installer.

This appliance shall be installed in accordance with the applicable regulation.

This appliance shall be used in a well-ventilated premise according to the requirements of EN 13410 standard.

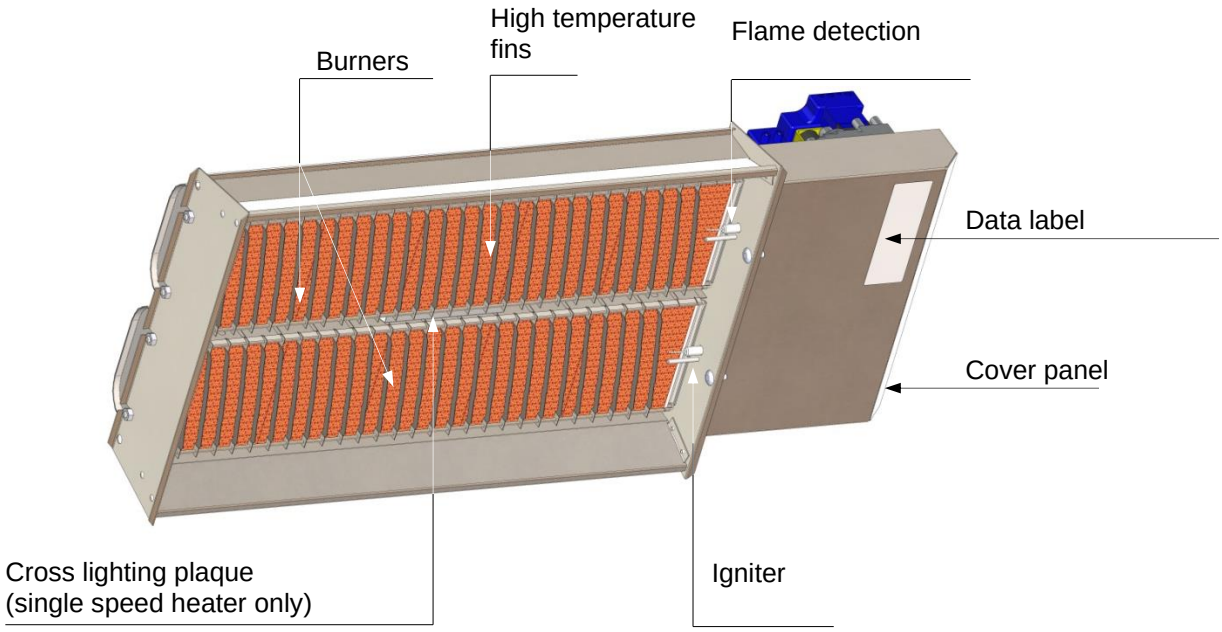
Read this manual before installing and use this appliance.

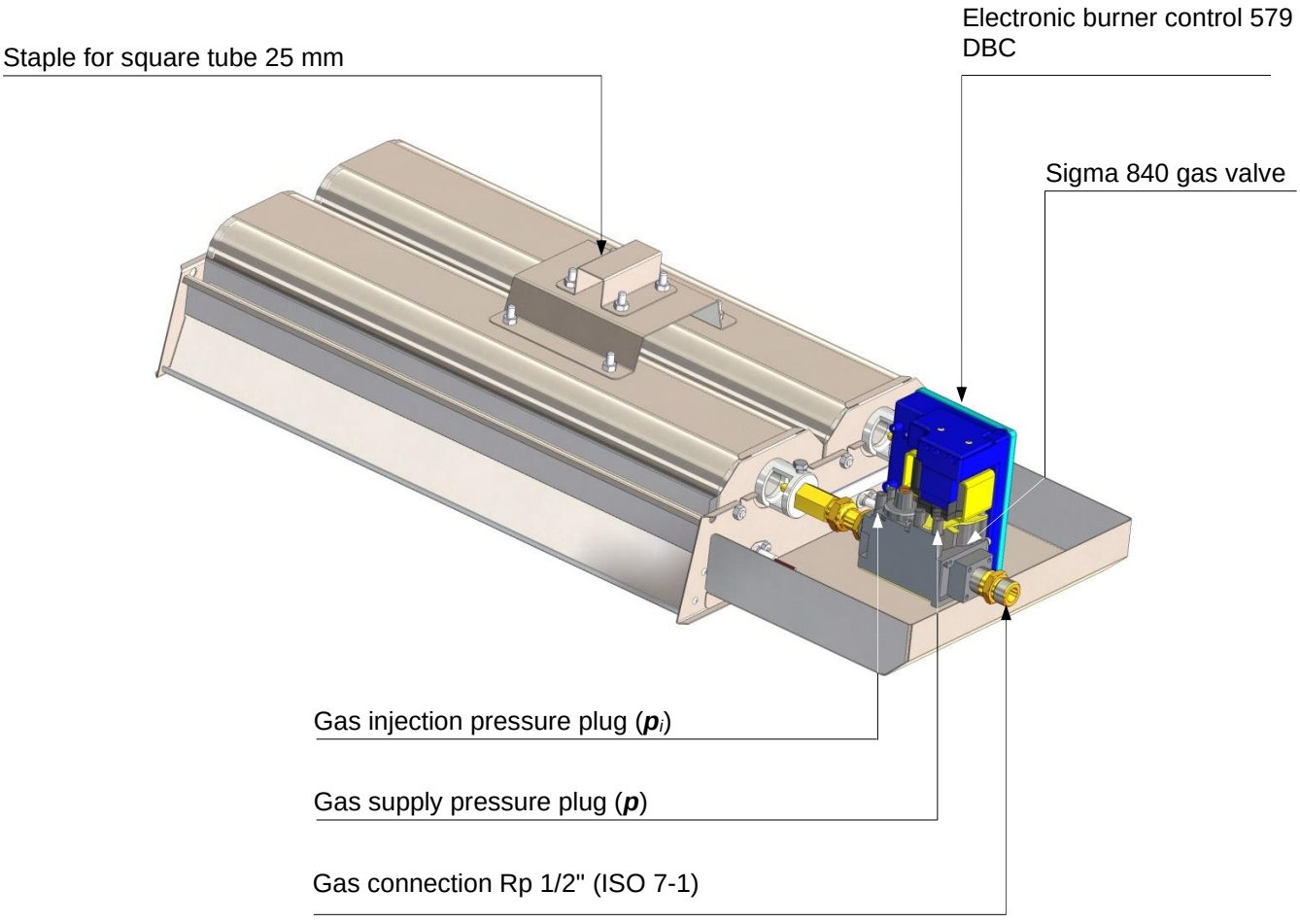
Turn off the appliance and shut off the gas valve before executing the maintenance operations.

These instructions and the user manual shall be given to the user at the end of the heating installation.

2. PRODUCT SPECIFICATION

2.1 Description





2.2 Technical specifications:

GAS: G20 - Category: I_{2H} GB/IE/TR

MODEL			RI 20	RI 20-2	RI 24	RI 24-2	RI 32	RI 32-2	RI 48-2	RI 64 2
Certificate number CE			1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 249	1312 AP 249
NOx class			5 (< 50 mg/kWh)							
Weight		(kg)	5.60	6.40	6.10	6.90	7.30	8.10	10.50	13.40
Nominal heat input	ΣQn (Hi)	(kW)	7.60	7.60	10.20	10.20	13.50	13.50	20.25	27.00
	ΣQn (Hs)	(kW)	8.45	8.45	11.35	11.35	15.00	15.00	22.50	30.00
GAS										
Nominal inlet pressure ***p***		(mbar)	20							
Minimal inlet pressure		(mbar)	17							
Maximal inlet pressure		(mbar)	25							
Injection pressure p_i		(mbar)	12.0	12.0	15.0	15.0	16.0	16.0	(voir **B**)	16.0
Volumetric flow rate		(m^3/h)	0.805	0.805	1.080	1.080	1.430	1.430	2.145	2.860
Ø orifice (injector)		(1/100 mm)	2x170	2x170	2x180	2x180	2x205	2x205	(voir **A**)	4x205
Ø primary orifice (restrictor)		(1/100 mm)	-	-	-	-	-	-	(voir **A**)	-
Gas connection			Rp1/2" (ISO 7-1)							
Exhaust gases evacuation			A_1 typ (no connected)							
ELECTRICITY										
Power supply			230V (+10% -15%) – 50Hz Neutral mandatory							
Intensity		(A)	0.1	2x0.1	0.1	2x0.1	0.1	2x0.1		
Consumption		(VA)	19	2x19	19	2x19	19	2x19		
Ingress Protection			IP40							
External individual fuse 5x20 (RP3 – RP32)		(A)	0.25	2x0.25	0.25	2x0.25	0.25	2x0.25		
Maximum ignition cycle length			30 seconds							
VENTILATION										
Combustion air		(m^3/h)	7.90	7.90	10.50	10.50	13.90	13.90	21.00	27.80
Required air renewal (EN 13410)		(m^3/h)	76	76	102	102	135	135	202.5	270

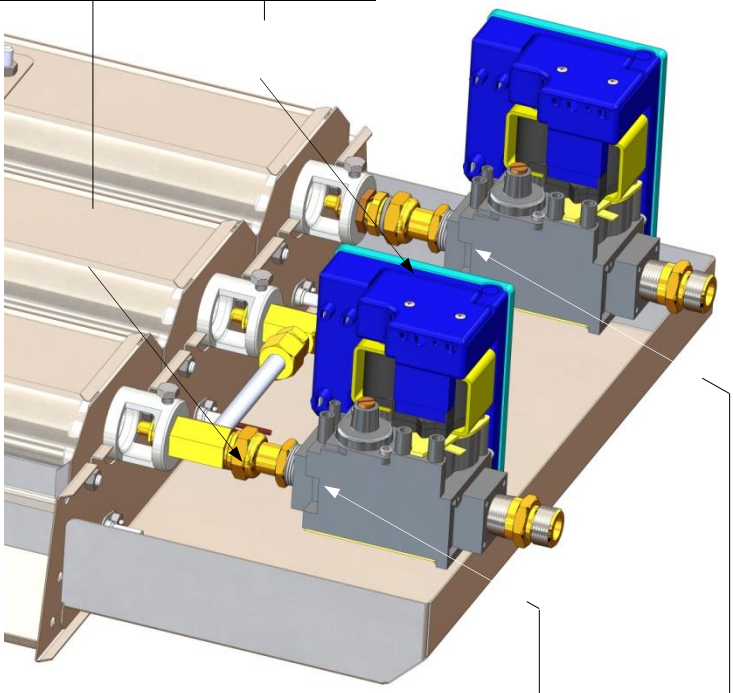
GAS: G31 - Category: I_{3P} GB/IE/TR

MODEL			RI 20	RI 20-2	RI 24	RI 24-2	RI 32	RI 32-2	RI 48-2	RI 64 2
Certificate number CE			1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 249	1312 AP 249
NOx class			5 (< 50 mg/kWh)							
Weight		(kg)	5.60	6.40	6.10	6.90	7.30	8.10	10.50	13.40
Nominal heat input	ΣQn (Hi)	(kW)	7.60	7.60	10.20	10.20	13.50	13.50	20.25	27.00
	ΣQn (Hs)	(kW)	8.20	8.20	11.00	11.00	14.60	14.60	21.90	29.20
GAS										
Nominal inlet pressure ***p***		(mbar)	37							
Minimal inlet pressure		(mbar)	36 : blocked regulator (see page 33)							
Maximal inlet pressure		(mbar)	0.595	0.595	0.800	0.800	1.055	1.055	1.590	2.110
Injection pressure p_i		(mbar)	2x110	2x110	2x125	2x125	2x135	2x135	(voir **A**)	4x135
Volumetric flow rate		(m^3/h)	185	2x130	240	2x180	370	-	(voir **A**)	2x370
Ø orifice (injector)		(1/100 mm)	Rp1/2" (ISO 7-1)							
Ø primary orifice (restrictor)		(1/100 mm)	A_1 typ (no connected)							
ELECTRICITY										
Power supply			230V (+10% -15%) – 50Hz Neutral mandatory							
Intensity		(A)	0.1	0.1	0.1	2x0.1	0.1	2x0.1		
Consumption		(VA)	19	2x19	19	2x19	19	2x19		
Ingress Protection			IP40							
External individual fuse 5x20 (RP3 – RP32)		(A)	0.25	2x0.25	0.25	2x0.25	0.25	2x0.25		
Maximum ignition cycle length			30 seconds							
VENTILATION										
Combustion air		(m^3/h)	7.10	7.10	9.60	9.60	12.60	12.60	18.90	25.20
Required air renewal (EN 13410)		(m^3/h)	76	76	102	102	135	135	202.5	270

A

G20	prim : - sec : 2x205	prim : - sec : 205
G31	prim : 370 sec : 2x135	prim : - sec : 135

RI 48-2

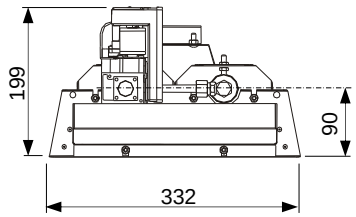


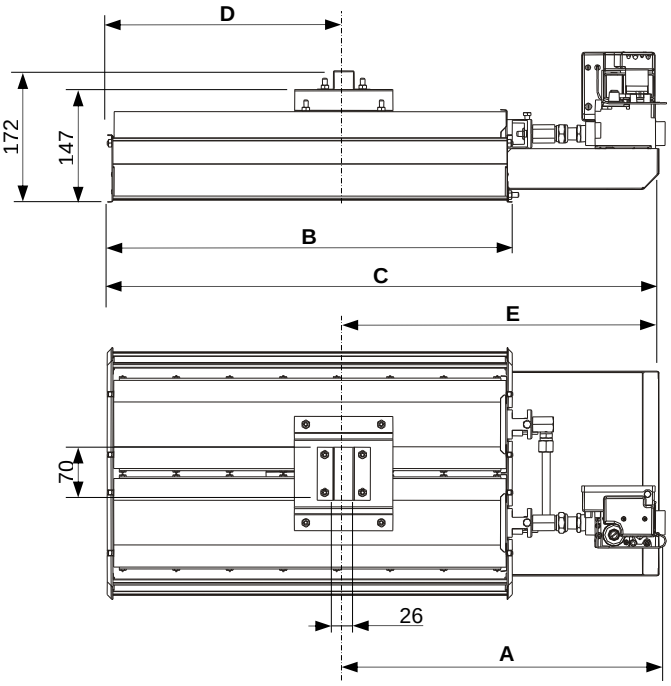
B

G20	16.0 mbar	16.0 mbar
G31	36.0 mbar	36.0 mbar

2.3 RI heaters dimensions:

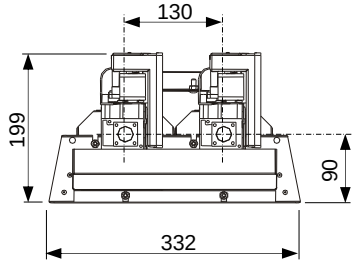
RI 20, RI 24 and RI 32 (single speed)

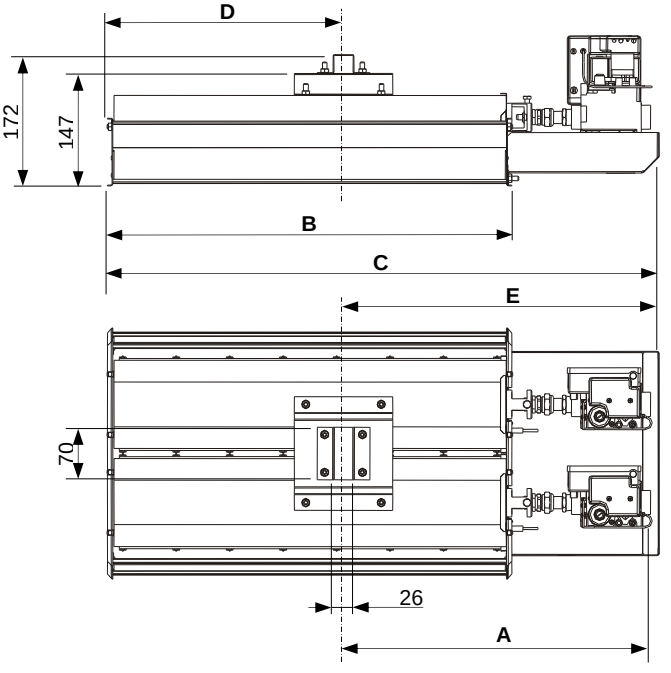




MODEL	RI 20	RI 24	RI 32
A (mm)	369	408	426
B (mm)	334	411	536
C (mm)	529	606	731
D (mm)	168	206	313
E (mm)	361	400	418

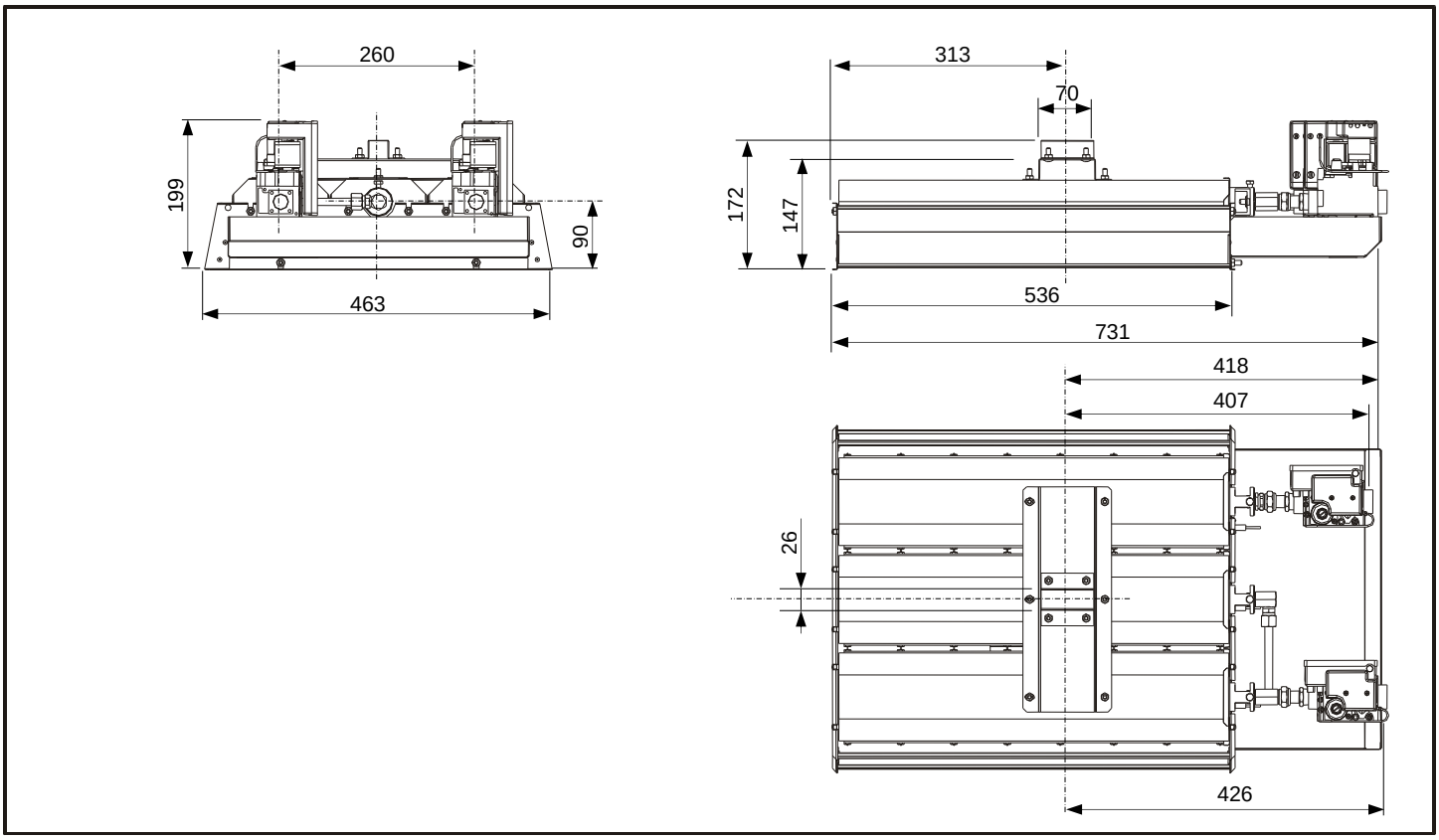
RI 20-2, RI 24-2 and RI 32-2 (double speed)



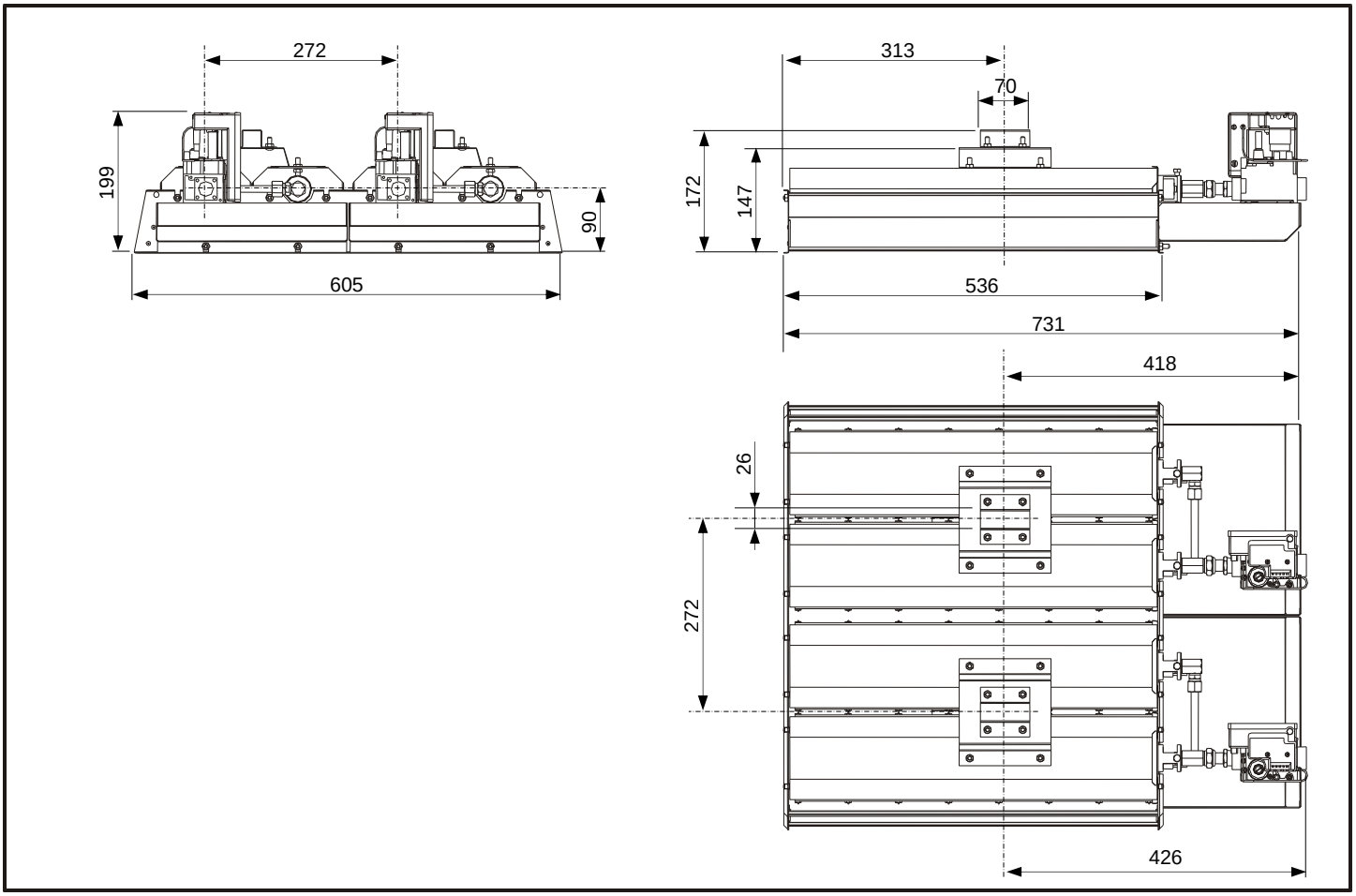


MODEL	RI 20-2	RI 24-2	RI 32-2
A (mm)	350	389	407
B (mm)	334	411	536
C (mm)	529	606	731
D (mm)	168	206	313
E (mm)	361	400	418

RI 48-2 (double speed)



RI 64-2 (double speed)



3. INSTALLATION

Before installation, check the compatibility between the local distribution conditions, the gas nature, the gas pressure, and the appliance settings.

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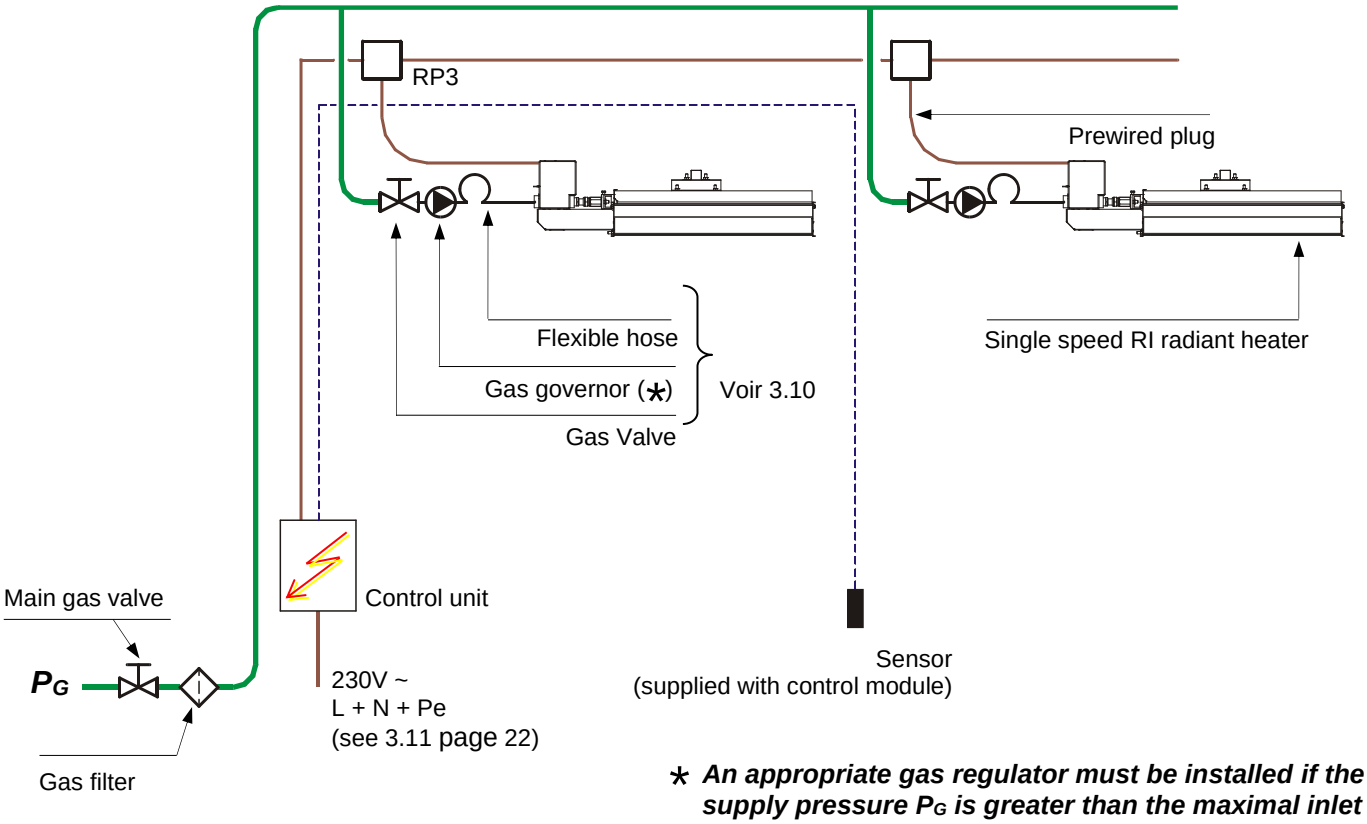
3.1 Rules and Regulations

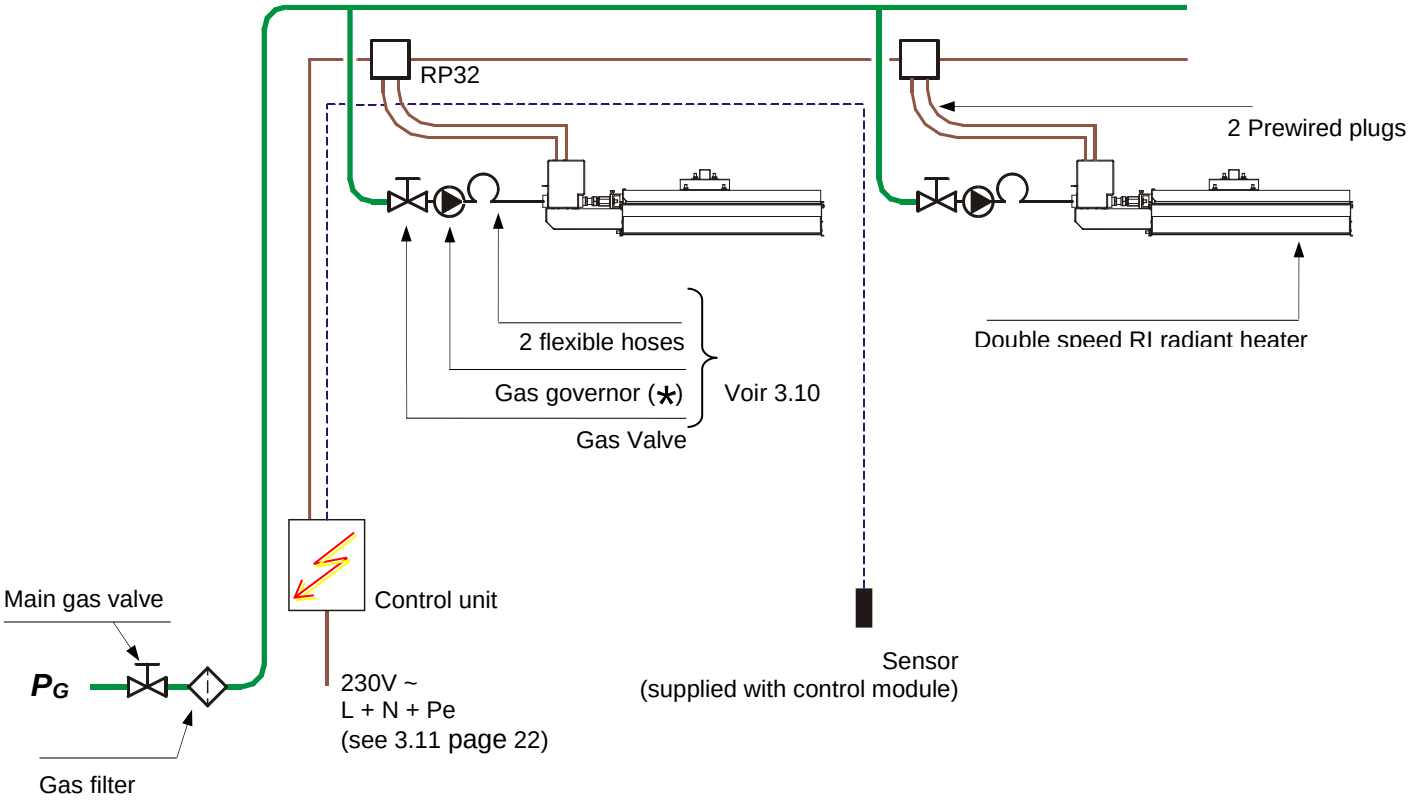
- ❒ SBM ceramic heaters are CE approved in Great Britain, Ireland and Turkey.
- ❒ The premises must be ventilated in accordance with the norm EN 13410.
- ❒ Building Standards (Scotland) (Consolidated) Regulations.
- ❒ Building regulations.
- ❒ Gas safety (Installations and Use) Regulations.
- ❒ Institute of Electrical Engineers (I.E.E.) Regulations.
- ❒ BS6896 Specification for Installation of Gas Fired Overhead Radiant Heaters for Industrial and Commercial Heating (2nd and 3rd family gases).
- ❒ Local British Gas Region Regulations.
- ❒ Local Authority Bylaws.
- ❒ Health and Safety at Work Act 1974
- ❒ Not for domestic use.

3.2 Diagram of a single speed installation



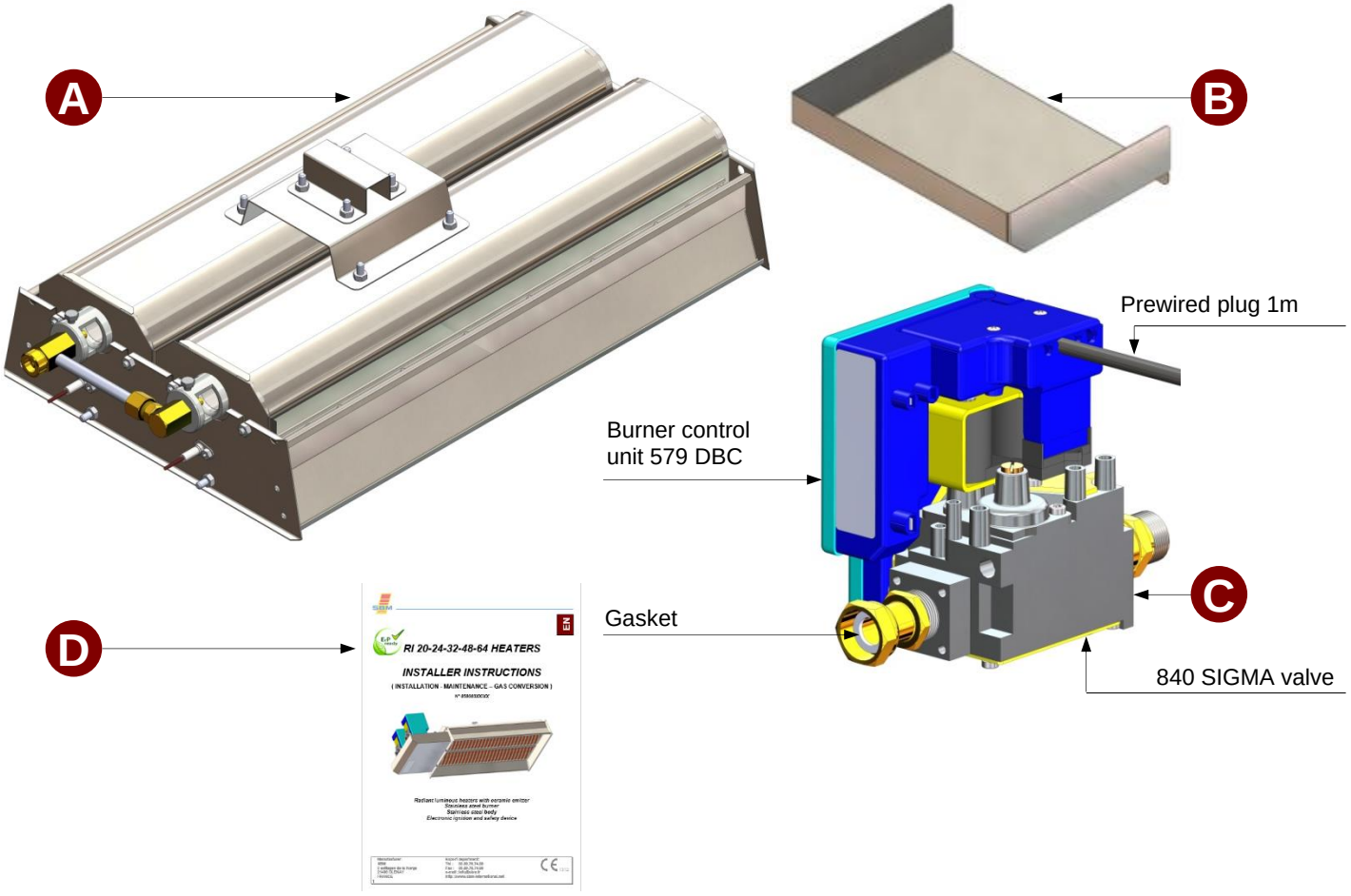
* ***An appropriate gas regulator must be installed if the supply pressure P_G is greater than the maximal inlet pressure (G20) or than the nominal pressure (G31) of the heaters*** (see **2.2**)

3.3 Diagram of a double speed installation



3.4 Unpacking and checking of equipment

- ❒ Check the type and quantities of equipment against your order.
- ❒ Check that packing and equipment are intact.
  If this is not the case, please register a complaint to this effect with the carrier.
- ❒ Check gas type and pressure to be used on heaters.
- ❒ Check the content of each box.



REP.	PART	RI 20 RI 24 RI 32	RI 20-2 RI 24-2 RI 32-2	RI 48-2	RI 64-2
A	Radiant heater	1			
B	Cover panel	1	1	1	2
C	840 SIGMA valve + EBC 579 DBC+ Prewired plug 1m assembled	1	2	2	2
D	User manual	1			

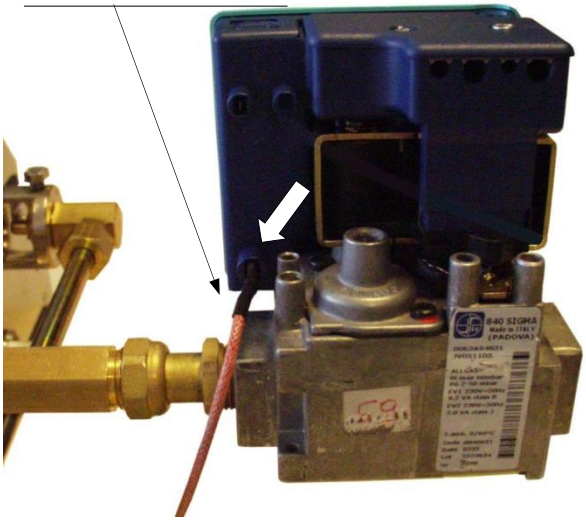
3.5 Heaters assembling procedure

❒ Assembling of the 840 SIGMA valve on the heater

Do not forget the gasket!

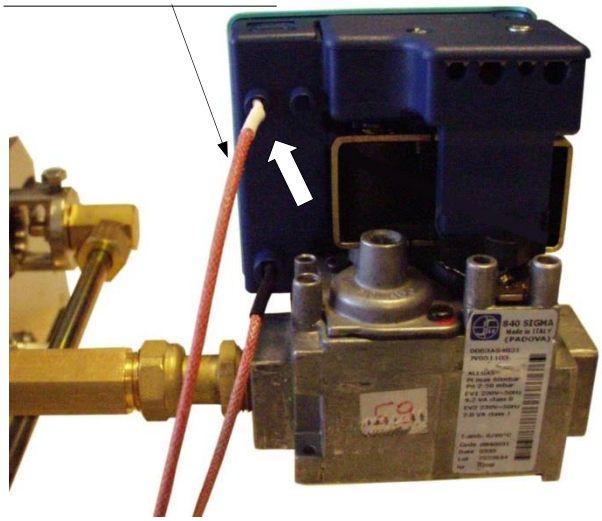
❒ Connection of the flame detector

Clip 4.8x0.8 black Sheth



❒ Connection of the ignition electrode

Clip 2.8x0.5 white Sheth



❒ Assembling of the gas supply cover panel(s) on the heater

Mount the gas supply cover panel(s) onto the heater with H-M6 nuts.
Tighten nuts using a spanner.

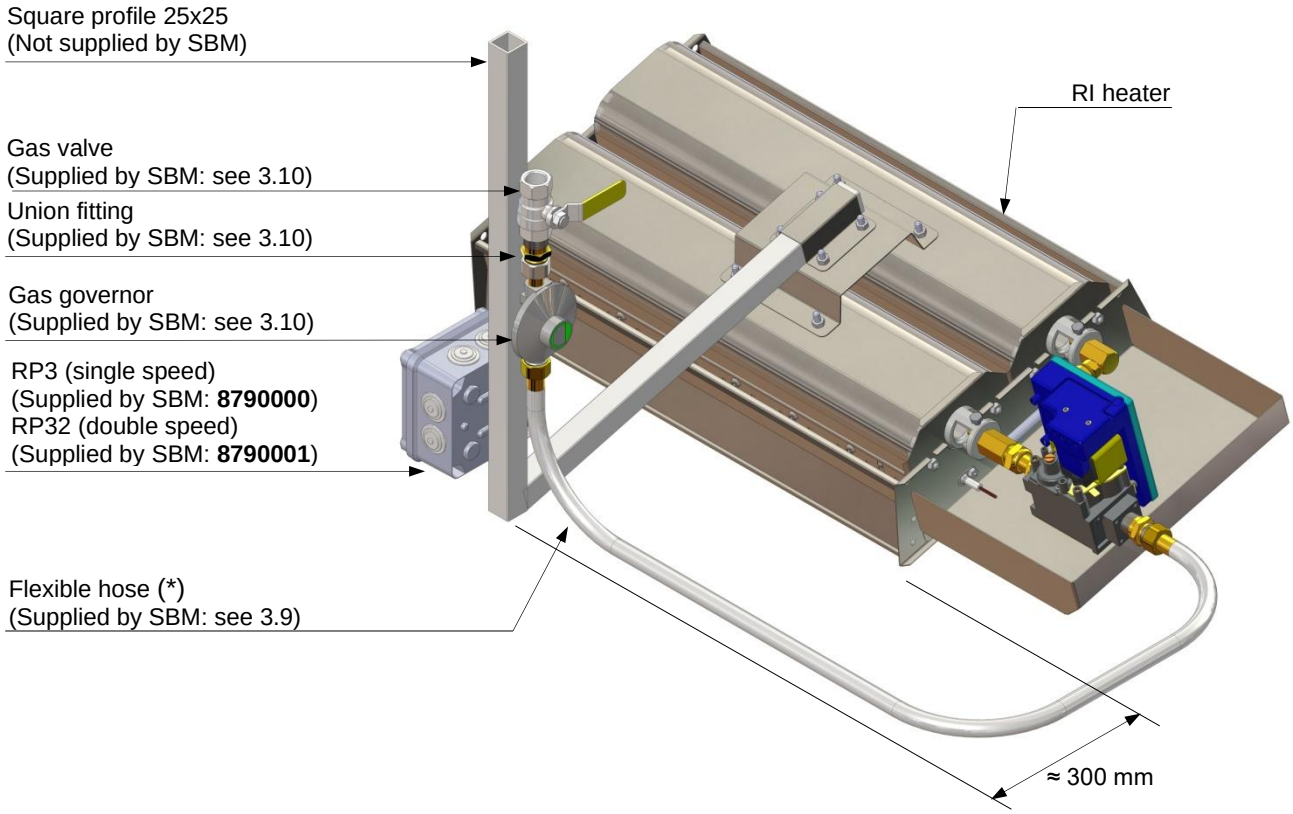
3.6 Fixing of heaters

❒ Minimum recommended **safety** heights:

MODEL	SAFETY HEIGHT (m)
RI 20 / RI 20-2	3.80
RI 24 / RI 24-2	4.10
RI 32 / RI 32-2	4.50
RI 48-2	5.00
RI 64-2	5.50

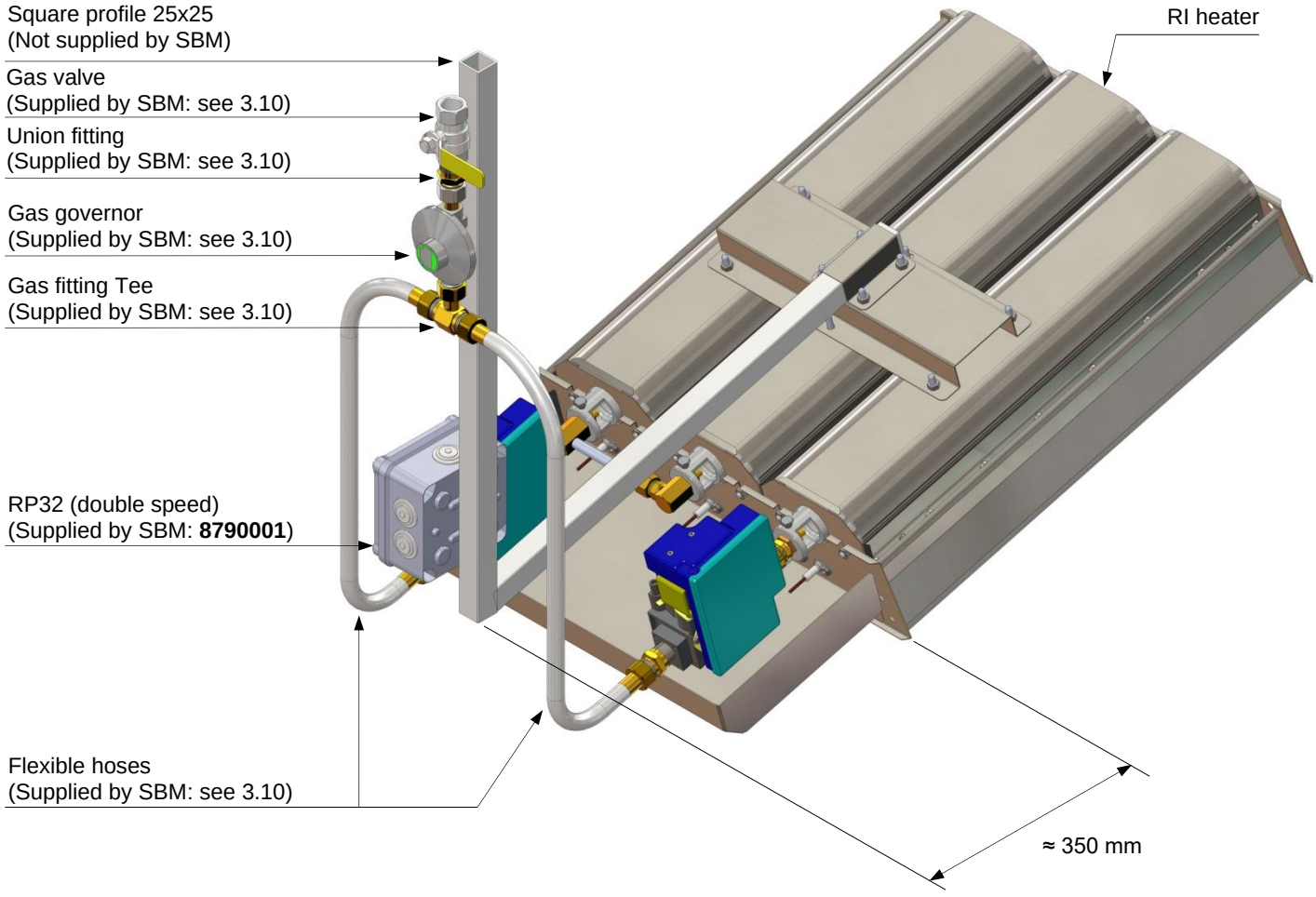
❑ Minimum comfort heights: refer to the specific SBM case study for each project.

❒ Example of hanging brackets to be manufactured by the installer for **RI 20** to **RI 32-2**

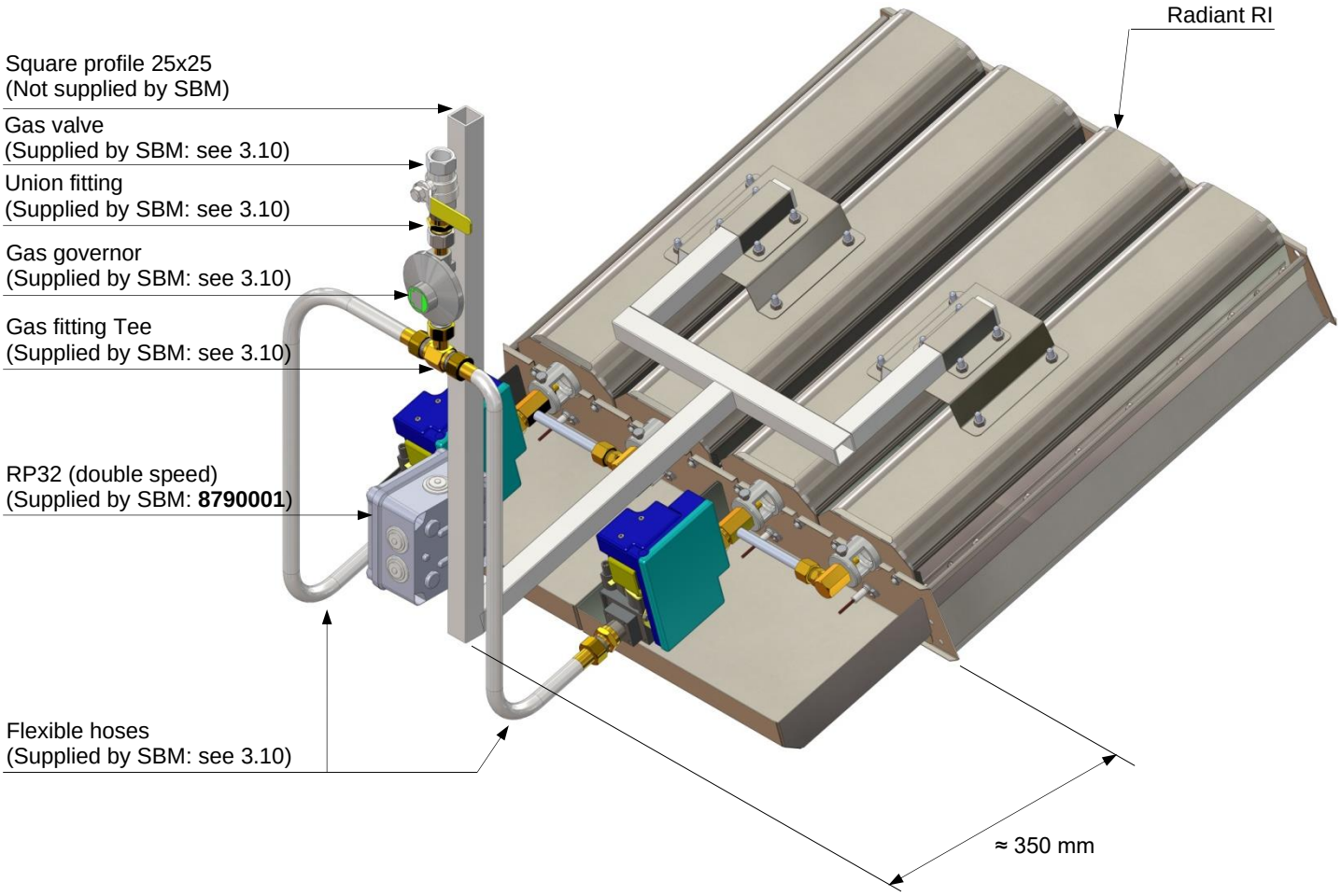


(*): for double speed heaters, 2 flexible hoses + 1 gas fitting “Tee” (see 3.10)

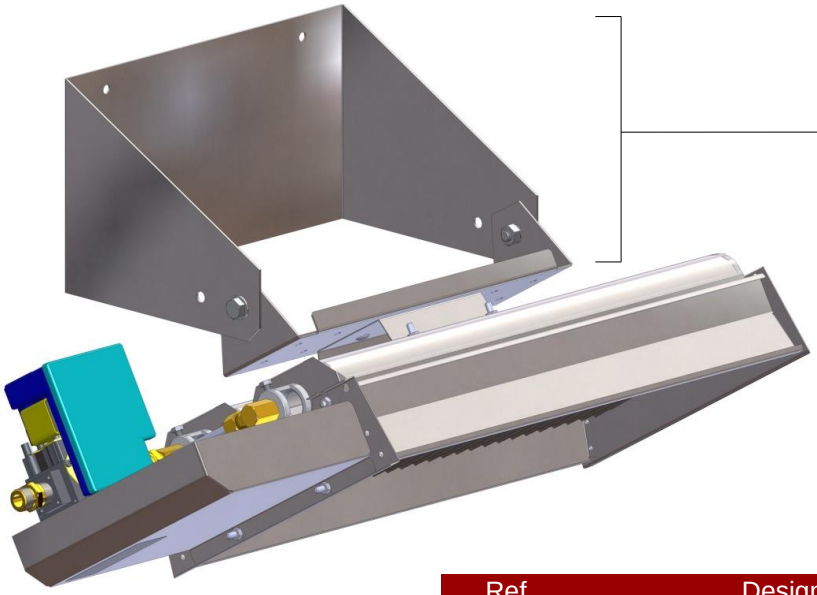
❒ Example of hanging bracket to be manufactured by the installer for **RI 48-2** heater



❒ Example of hanging bracket to be manufactured by the installer for **RI 64-2** heater

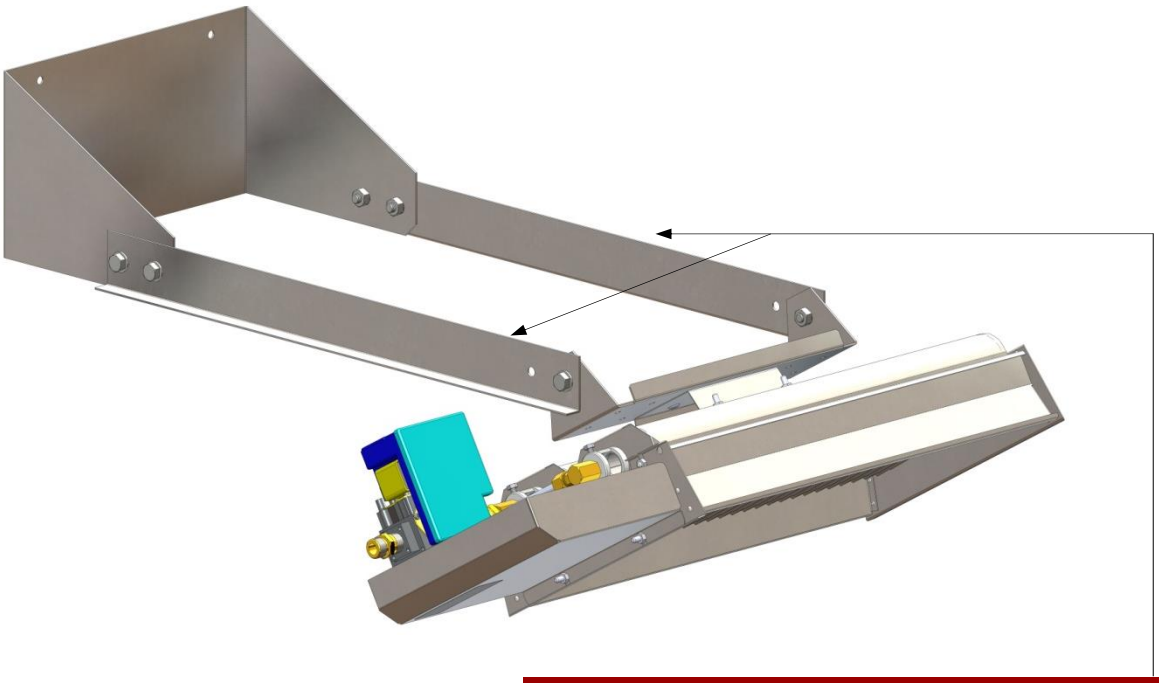


❒ Example of SBM orientable bracket for **RI 20** to **RI 64-2** heaters.



Ref.	Designation	Use
18510	**ORIENTABLE BRACKET B20 to B48**	RI 20, RI 20-2, RI 24, RI 24-2, RI 32, RI 32-2, RI 48-2, RI 64-2

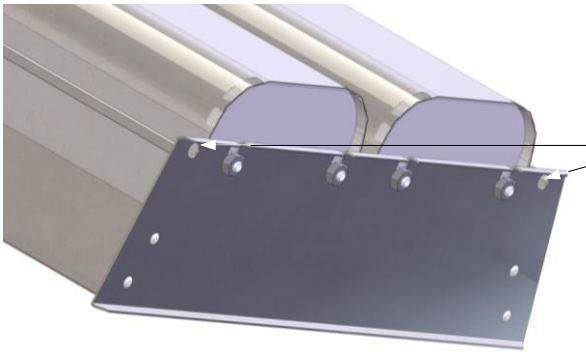
With the orientable bracket, it is possible to add an extension of 60 cm length to deport the heater from the wall.



Ref	Designation	Use
18602	**EXTENSION 60CM STAINLESS STEEL**	RI 20 à RI 64-2

The extension is mandatory for inclined heaters when installed according to "p" inclination" (see chapter 3.9)

- Possibility to hang the heater with chains or cable



All RI heaters are equipped of 4 holes allowing the hanging and inclination thanks to 4 chains or 4 suspension cables.

In case of hanging of the heaters thanks to suspension cables, the locking system shall not be located into the heated area: the system can melt and so drive to the heater falling. (see 3.8)

3.7 Accessories

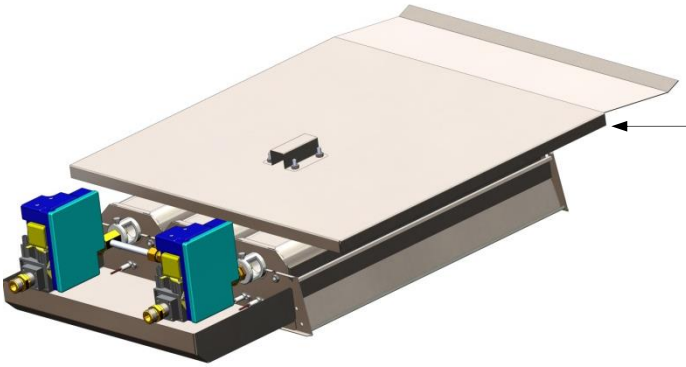
- Protection grid against balls and balloons.
  To use in sport halls application.

Ref	Designation	Use
5700002	**B20SX GRID**	RI 20, RI 20-2
5700003	**B24SX GRID**	RI 24, RI 24-2
5700004	**B32SX GRID**	RI 32, RI 32-2
5700005	**B64SX GRID**	RI 64-2
5700006	**B48SX GRID**	RI 48-2

Assembling: see instructions **05000178**.

- Heat deflector.
  To use in case of thermal protection necessity above the radiant heater (see 3.8).

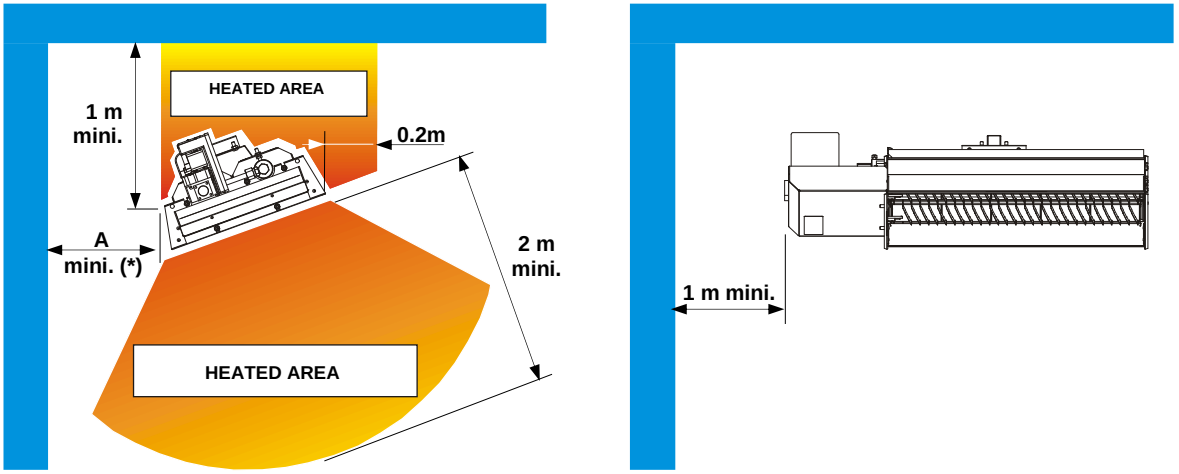
  2 types are existing: "i" or "p" models. Depending on the inclination of the heater "i" or "p". (see 3.9)



Ref	Designation	Use
5710038	**DEFLECTOR 20 i**	RI 20, RI 20-2 inclin. i
5710039	**DEFLECTOR 20 p**	RI 20, RI 20-2 inclin. p
5710040	**DEFLECTOR 24 i**	RI 24, RI 24-2 inclin. i
5710041	**DEFLECTOR 24 p**	RI 24, RI 24-2 inclin. p
5710042	**DEFLECTOR 32 i**	RI 32, RI 32-2 inclin. i
5710043	**DEFLECTOR 32 p**	RI 32, RI 32-2 inclin. p
5710044	**DEFLECTOR 48 p**	RI 48-2 inclin. p
5710045	**DEFLECTOR 64 p**	RI 64-2 inclin. p

Assembling "i" deflector: see instructions n°**05000575**.
Assembling "p" deflector: see instructions n°**05000576**.

3.8 Minimum safety clearances (Inflammable materials: θ_{max} = 70°C)



(*) For an inclination "I" or a slope "P" between 10° and 20°, A=1m.
(*) For an inclination "I" or a slope "P" between 20° and 35°, A=0.6m

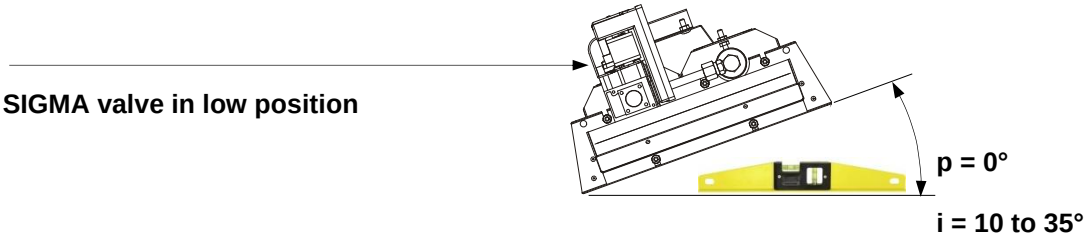
Inflammable materials (θ_{max} = 70°C), electric cables or gas pipes, shall not be located into the heated area

In the case where the distances cannot be respected, provide a thermal protection above the heater (see 3.7)

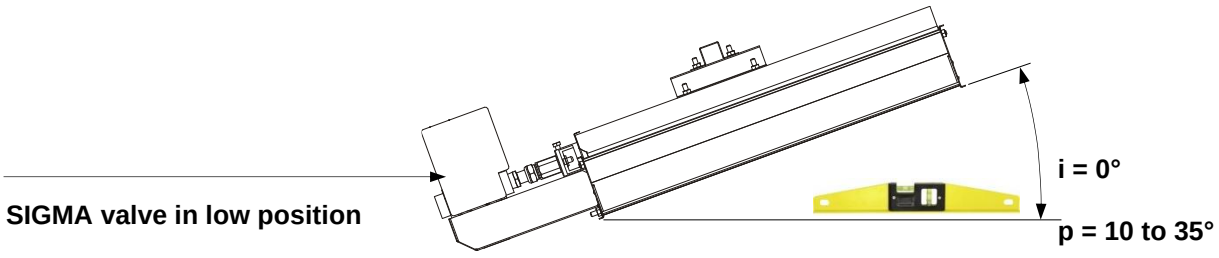
In case of hanging of the heaters thanks to suspension cables, the locking system shall not be located into the heated area: the system can melt and so drive to the heater falling. **(see chapter 3.6)**

3.9 Inclination of heaters

❒ Lateral inclination "**i**".



❒ Longitudinal inclination "**p**".



In all cases, inclination "i" or slope "p" shall be at least 10°.

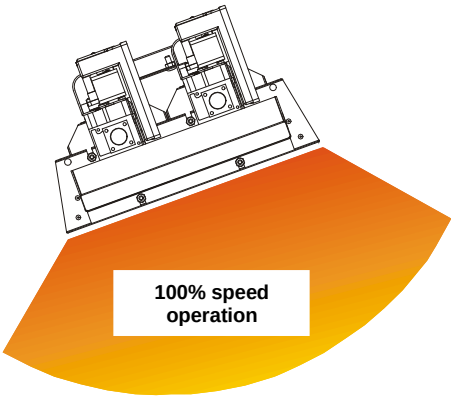
The "P" and "I" values recommended for your installation are indicated on the SBM plan attached to the case study (if one has been carried out).

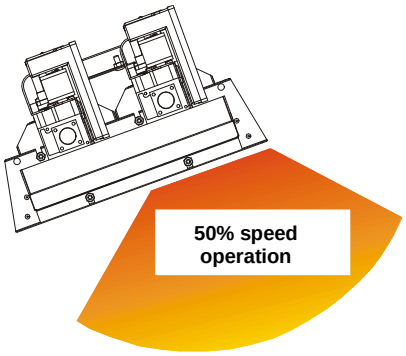
The « rainfall » position corresponds to i = 0° or p = 10°.

Always position the gas inlet in low position

- Double speed **RI 20-2**, **RI 24-2** and **RI 32-2** radiant heaters with “i” inclination.

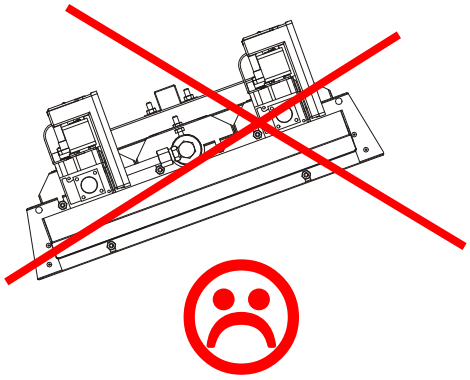
Always light the upper burner first.

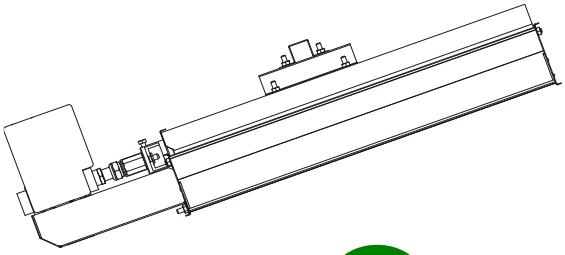


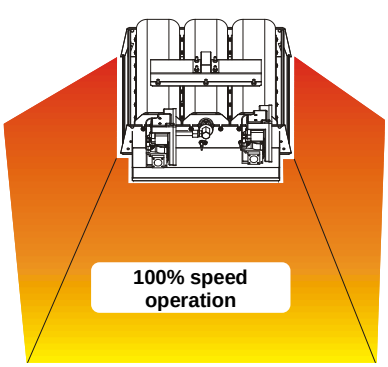


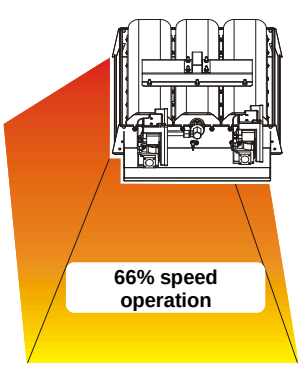
- Double speed **RI 48-2** radiant heater.

Always install with "p" inclination.



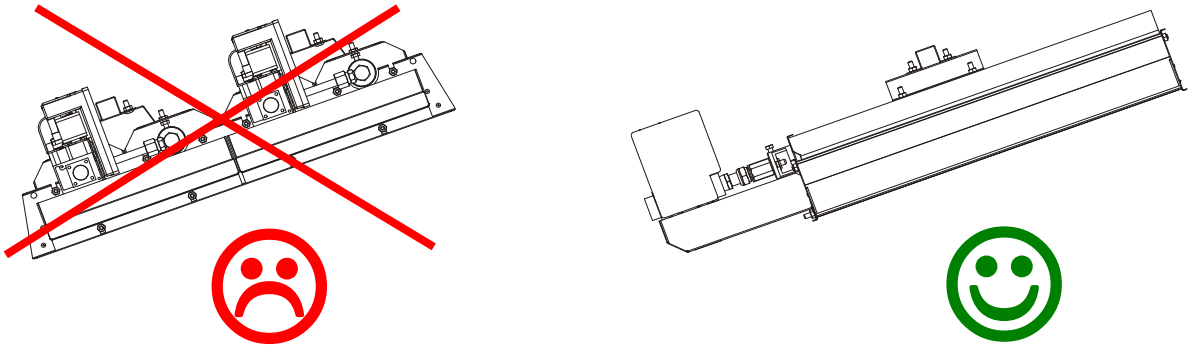






❑ Double speed **RI 64-2** radiant heater.

Always install with "p" inclination.



3.10 Gas connection

Before installation, check that local conditions of supply, gas type/pressure and equipment settings are compatible.

Gas piping shall not be located into a heated area.
(voir 3.7)

The gas pipes shall not product forces on the gas valve of the heater: use a gas flexible hose with a length between 0.5 m and 2 m.

❑ **MEDIUM PRESSION GAS SUPPLY**

Gas supply pressure P_G greater than heater nominal inlet pressure (see 2.2).

GAS	GAS NETWORK PRESSURE
G20	200 mbar to 1.5 bar maxi
G31	200 mbar to 1.5 bar maxi

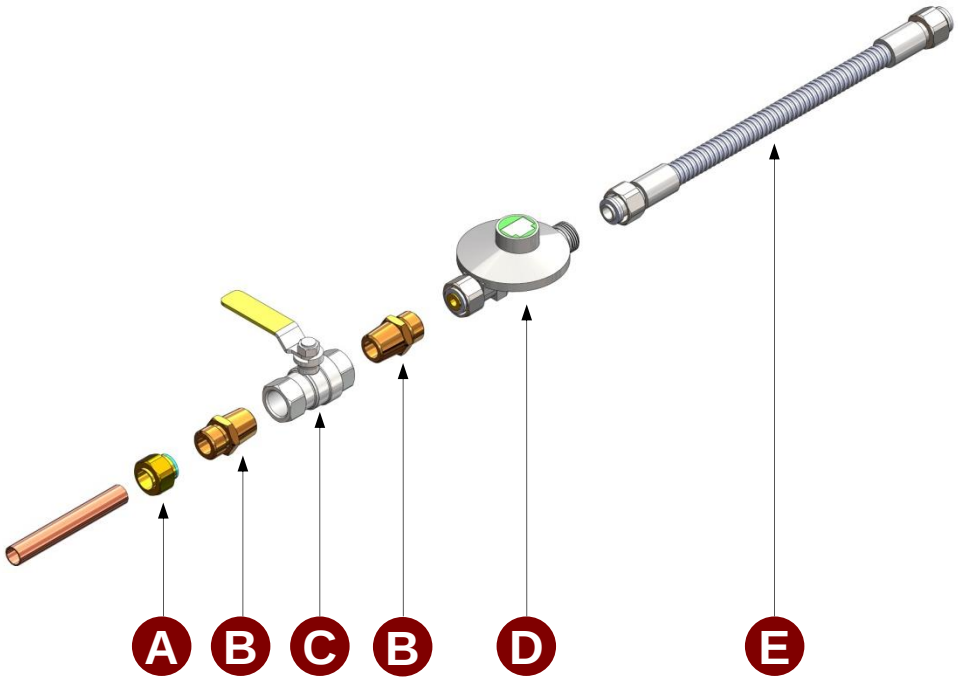
❑ **LOW PRESSURE GAS SUPPLY**

Gas supply pressure P_G identical to heater nominal inlet pressure (see 2.2).

GAS	GAS NETWORK PRESSURE
G20	20 mbar
G31	37 mbar

❑ Gas supply kits

Single speed installation

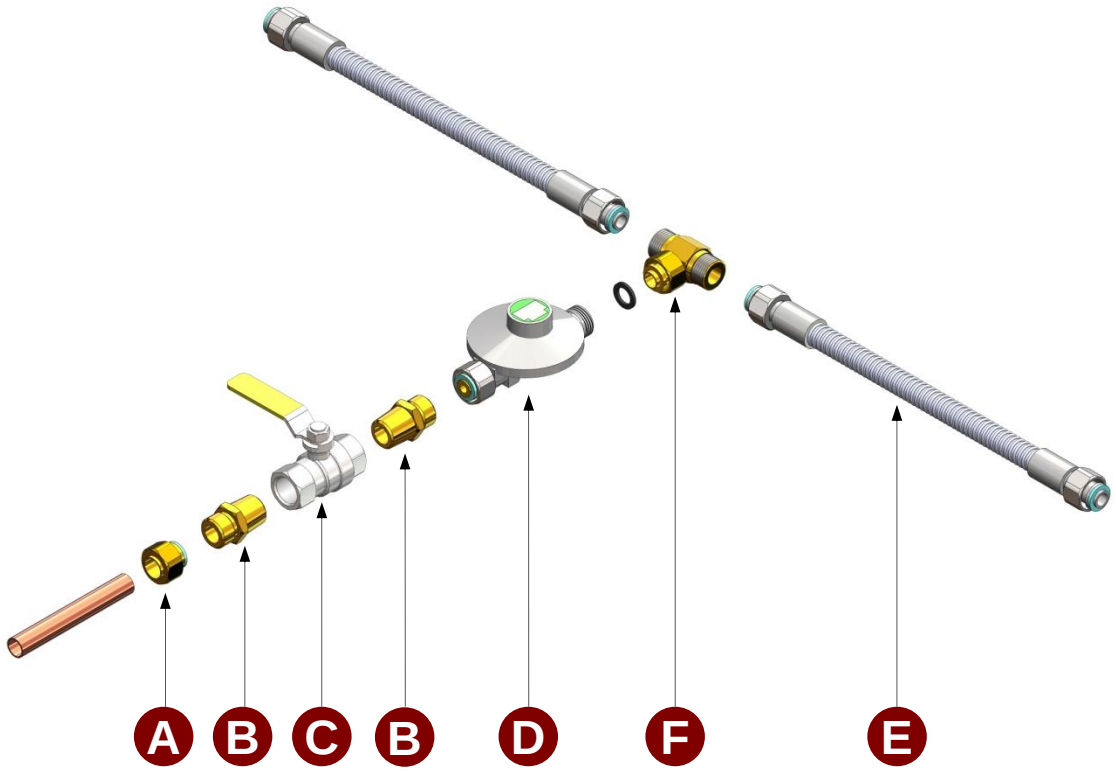


		A	B	C	D				E	
		FITTING FOR SOLDERING 12 G1/2	UNION FITTING R1/2m-G1/2m	Rp1/2 DN15 VALVE	DF64 G1/2 G31-37 4KG/H	DF64 G1/2 G20-20 3M3/H	DF64 G1/2 G25-25 3M3/H	DF64 G1/2 G20-20 4BAR 6M3/H	METALLIC HOSE G1/2F 700mm	FLEXIBLE HOSE G1/2F ERP 750mm
9805038	GAS KIT 1x0.7m G20 0.3b	1	2	1	-	1	-	-	1	-
9805042	GAS KIT 1x0.7m G31 1.5b	1	2	1	1	-	-	-	1	-
9805050	GAS KIT 1x0.7m G20 4b	1	2	1	-	-	-	1	1	-
9805052	GAS KIT 1x0.7m BP	1	2	1	-	-	-	-	1	-

Gas flexible hoses exist in ***1500 mm*** *length, please contact SBM.*

Assembling: see instructions **05000571**.

Double speed installation



		FITTING FOR SOLDERING 12 G1/2	UNION FITTING R1/2m-G1/2m	Rp1/2 DN15 VALVE	DF64 G1/2 G31-37 4KG/H	DF64 G1/2 G20-20 3M3/H	DF64 G1/2 G25-25 3M3/H	DF64 G1/2 G20-20 4BAR 6M3/H	METALLIC HOSE G1/2F 700mm	FLEXIBLE HOSE G1/2F ERP 750mm	GAS FITTING TEE
		A	B	C	D				E		F
9805044	GAS KIT 2x0.7m G20 0.3b	1	2	1	-	1	-	-	2	-	1
9805048	GAS KIT 2x0.7m G31 1.5b	1	2	1	1	-	-	-	2	-	1
9805051	GAS KIT 2x0.7m G20 4b	1	2	1	-	-	-	1	2	-	1
9805054	GAS KIT 2x0.7m BP	1	2	1	-	-	-	-	2	-	1

Gas flexible hoses exist in ***1500 mm*** *length, please contact SBM.*

Assembling: see instructions **05000571**.

3.11 Electrical connections

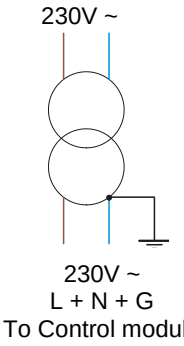
See diagram of a typical installation (3.2 and 3.3)

Electrical connections must be made in accordance with I.E.E regulations.

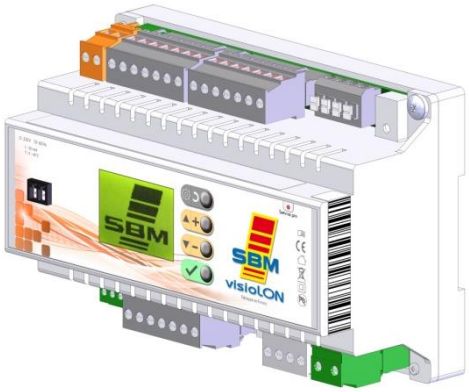
Connect all radiants to the EARTH.

Electrical cables and bypass boxes must not be placed in a radiant heating zone.
(see 3.7)

No tension, even temporary, between Neutre and Ground* is *allowed.
In case of installation without neutral (or poor quality neutral),
provide an insulation transformer to create an artificial neutral.
To do this, connect a terminal of the secondary of the transformer directly to the ground.



- ❑ Control: **RI** radiant heaters are controlled by **VisioLon Ind-I** programmable control module (SBM reference: **8050202**)
  See technical instructions **05000635**.



Each module can control **2 separated heating zones**.

This module shall be installed into a waterproof electrical box or a power distribution cabinet.

KIT ENCLOSURE 2 ZONES (SBM reference: **9704014**), including:
- Un watertight enclosure IP65 1 row 12 M with transparent door and ground terminal
- Residual current circuit breaker 16A - 30mA

Ce kit permet l'installation du module de contrôle pour piloter **40 radiants maximum** par zone.

KIT ENCLOSURE.REL. 2 ZONES (SBM reference: **9704015**), including:
- Un watertight enclosure IP65 1 row 12 M with transparent door and ground terminal
- Residual current circuit breaker 16A - 30mA
- 2 x power relays 230VAC 10A

This kit allows the installation of the VISIOLON Ind-I to control up to 100 radiant heaters per heating area.

- ❑ Temperature sensor location (1 per zone)

- Install the sensor at around 1,5 m from the ground between 2 heaters, in order to it receive an homogeneous radiation.
- Do not install the sensor in the direct sun radiation.
- Isolate the sensor from the wall where it is install to avoid the cold radiation of the wall, by an insulated material (glasswool, wood…).

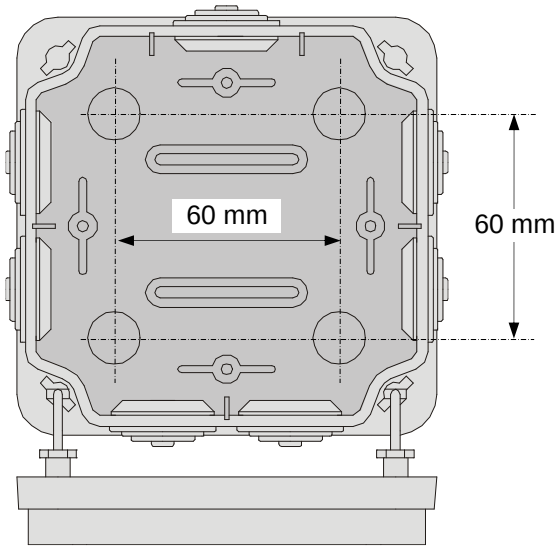
- The connection between the sensor and the module shall be done with the SBM shield cable:
  ROLL SENSOR CABLE 20M/66FT (SBM reference: **8791000**)
  ROLL SENSOR CABLE 60M/197FT (SBM reference: **8791001**)
  ROLL SENSOR CABLE 300M/984FT (SBM reference: **8791002**)
- In every case, do not install this cable into cables path with power cables.

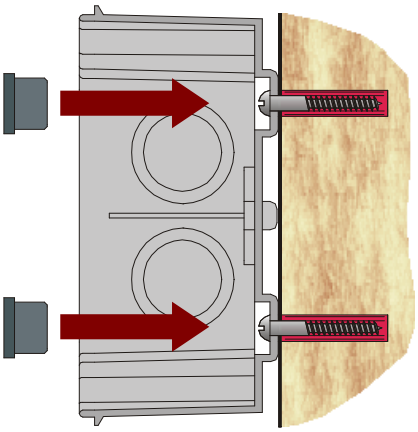
❑ Types of connection cables

LINK	TYPE OF CABLE
Control unit to RP3 (and RP3 to RP3)	3-core 0.75mm^2 85°C temperature rated PVC sheathed cable to BS6500 Table 9.
RP3 to heater	Use the connector supplied with the heater. Green/Yellow wire : EARTH / GROUND Blue wire : NEUTRAL Brown wire : LIVE
Control unit to sensor	Use the coaxial cable supplied by SBM (see above).

❑ RP3 quantity: 1 **RP3** per radiant heater from **RI 6** to **RI 16**.

❑ Fixing RP3 units: see instructions supplied in the box.



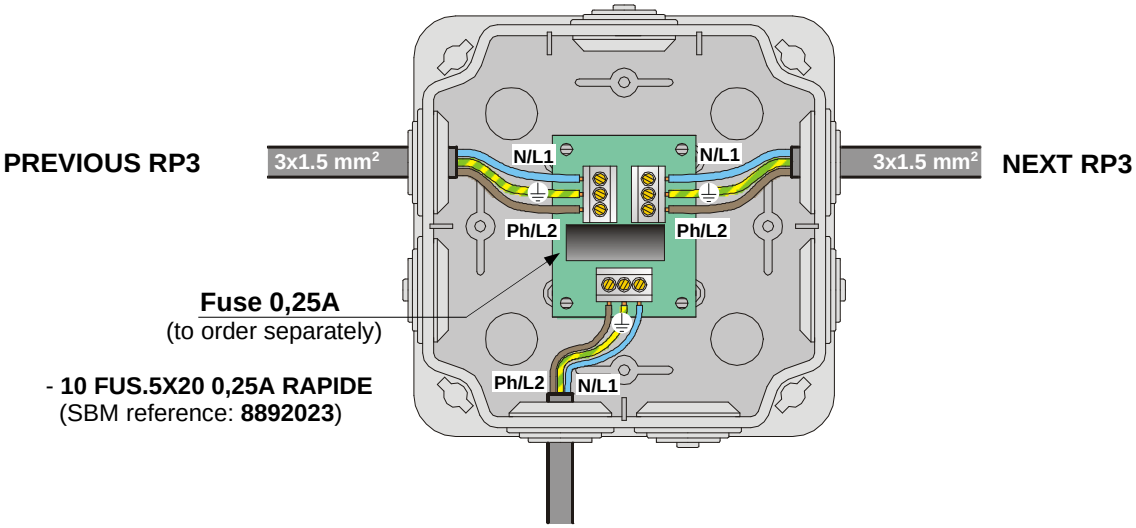


Always set the plastic protective plastic cap if the box is fasten form inside.

Install the RP3 box at less than 1 meter from the 579 DBC burner control of the heater, because the prewired plug are 1 meter length.

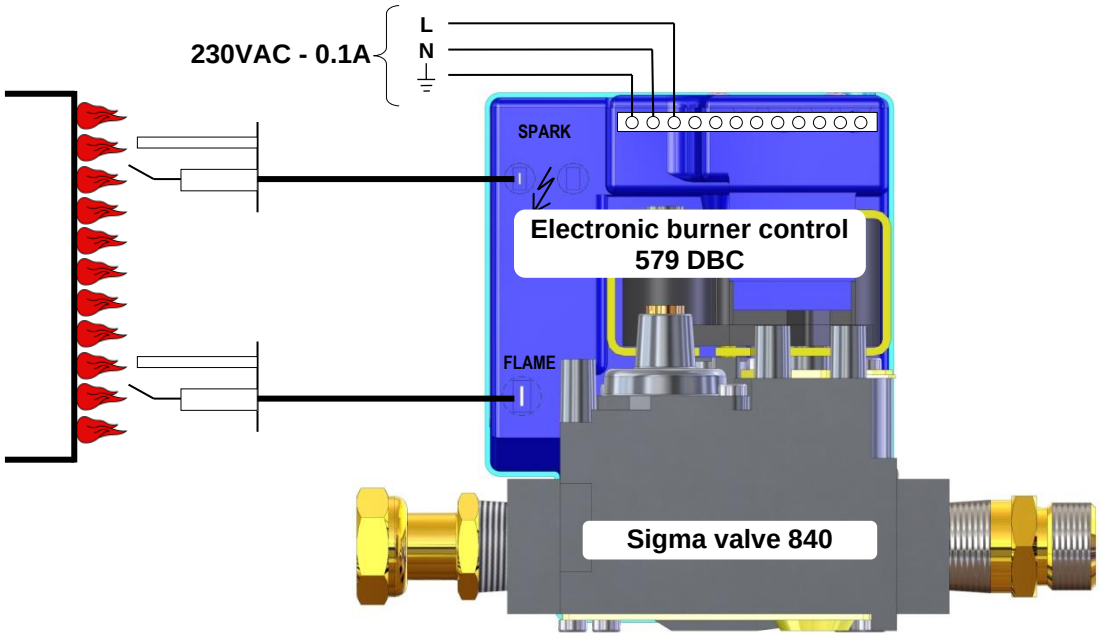
The box shall not be located into the heated area around the heater **(see 3.7)**

❑ Connect the heater to the RP3 according to the following diagram:



RI HEATER

❑ Internal electrical diagram of the heater



3.12 Start Up

- ❑ Clean out

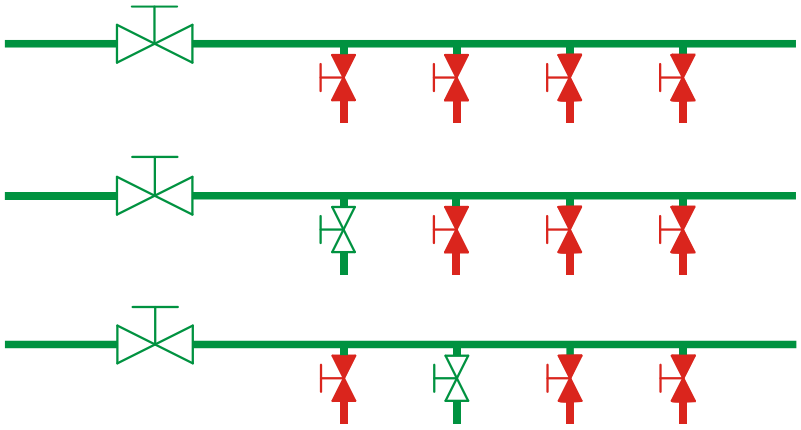
  Goal: flush out impurities in the gas piping

  Principe: clean out gas piping with dry air, or even better with nitrogen, **AFTER DISCONNECTING ALL ACCESSORIES.**

1 Pressure on

2 Flush out outlet Nr. 1

3 Flush out outlet Nr. 2



= OPEN VALVE

= CLOSED VALVE

- ❑ Gas-tightness test for industrial installations (see diagram below)

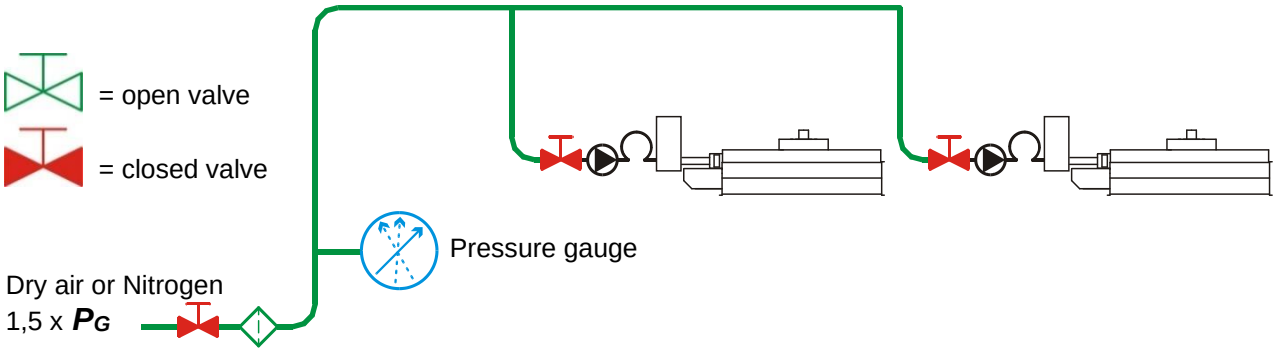
  a) Ensure that the installation is at a pressure (nitrogen or dry air) equals to 1.5 times the gas operating pressure P_G

  b) Turn off the nitrogen or dry air supply and wait 15 minutes for the pressure to stabilise.

  c) Check the pressure gauge.

  d) After two hours, the pressure gauge need must still show **the same pressure.**

  e) If pressure has dropped, detect leaks with a foaming product, fix them and repeat the operation.



This principle in only a guideline.
Local regulations may apply.

❒ First start up:

a) Preliminary checks:

***** calibration of control unit fuses

***** ground fault breaker operation ("TEST" button)

b) Initial settings:

***** main valve closed

***** individual valves open

***** ground-fault breaker set to "ON"

***** thermostat or programmable controller set to correct temperature setting

c) Ignition

- Open the main gas valve

- Check the settings (temperature, time)

- Change the module programming if required

- Check the operating cycle:

. Ignition with a set of sparks

. If after 3 attempts of 30 seconds, the flame is not detected, it is go in safety state.

. The sequence of ignition can begin again only after switching the power off. After 5 seconds, switch the power on.

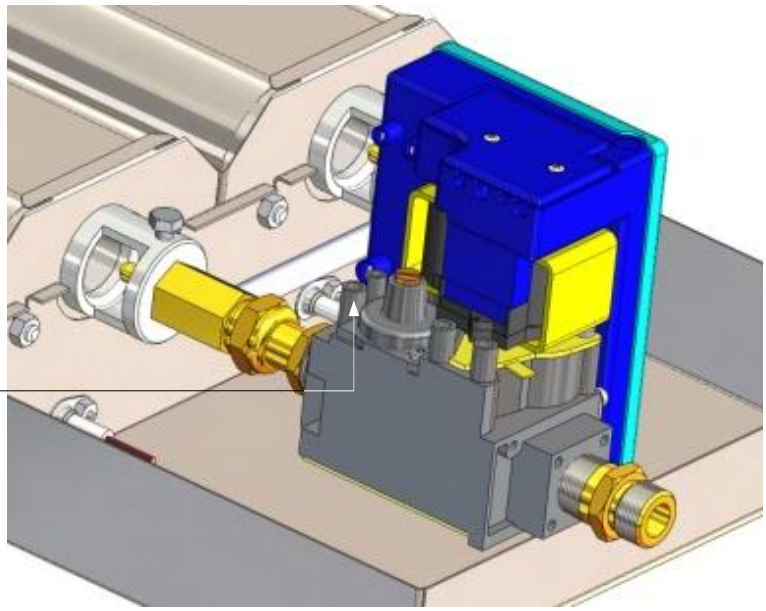
. The heater is on as long as : power supply is on and the valves are opened.

. If for any reason, the flame is no longer lit, the heater starts a new ignition cycle

d) Checking of injection gas pressure

***** The injection pressure of each heater p_i shall be equal to the indicated value into the table shown paragraph 2.2 pages 5 and 6.

Injection pressure p_i
(pression plug)



***** Proceed as following:

. Open the screw of pressure plug (2 or 3 turns)

. Connect a manometer (with adapted range) to the pressure plug

. If the read value is different from the theorical value shown into the table, check the gas supply pressure and check the property of gas filter

. Disconnect the manometer

. Tighten the screw of the pressure plug

Do not forget to tighten the screw of the pressure plug

Proceed to the injection pressure checking when all the heaters are operating.

e) Tightness of heater connection

***** for each heater, check gas tightness with a foaming product, from the outlet of the individual valve to the outlet fitting of the 840 SIGMA valve.

4. RECEIPT OF INSTALLATION

To be performed by the installer in the presence of the customer.

- ❑ Check that **the gas type and pressure comply with** the type of heater installed (see rating plate)

- ❑ Check that an **individual valve** is installed prior to each heater.

- ❑ Check that the "**RI 6 / 8 / 10 / 12 / 16 USER GUIDE**" (Manual operation or Automatic control) is displayed next to the control unit, after being **stamped by the installer**.

- ❑ Indicate to the customer the **locations** of:

  - Gas valves.

  - Electrical switches

  - Control units

- ❑ **Explain** to the customer how all **control units operate**.

- ❑ Plan the **initial maintenance visit** (**1 year** after start-up).

Give to the user an example of each instructions included into the box and the installer instructions.

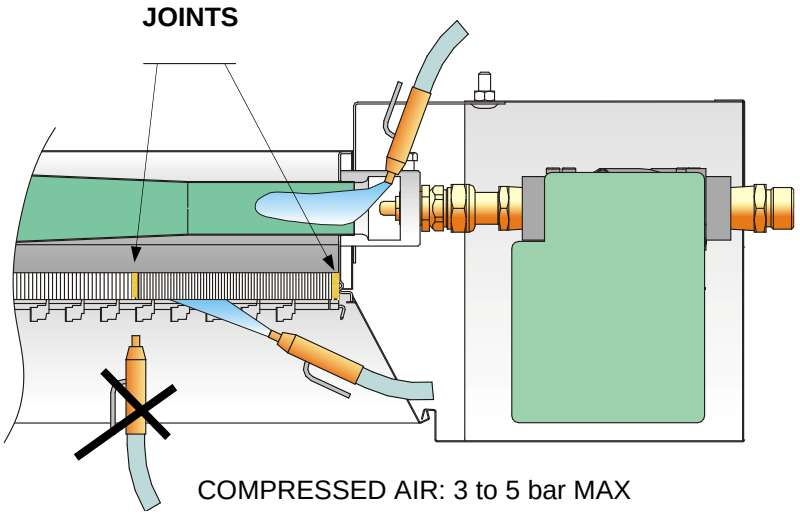
5. MAINTENANCE

Do not forget to turn off the concerned appliance and to close the gas valve before maintenance operation.

List of operation to realise during the yearly maintenance visit:

- ❒ Removal of dust from heaters

- On site, without disassembly, heaters off and cold.



DO NOT BLOW AIMING AT JOINTS BETWEEN CERAMIC PLATES (Risk of damaging the burner)

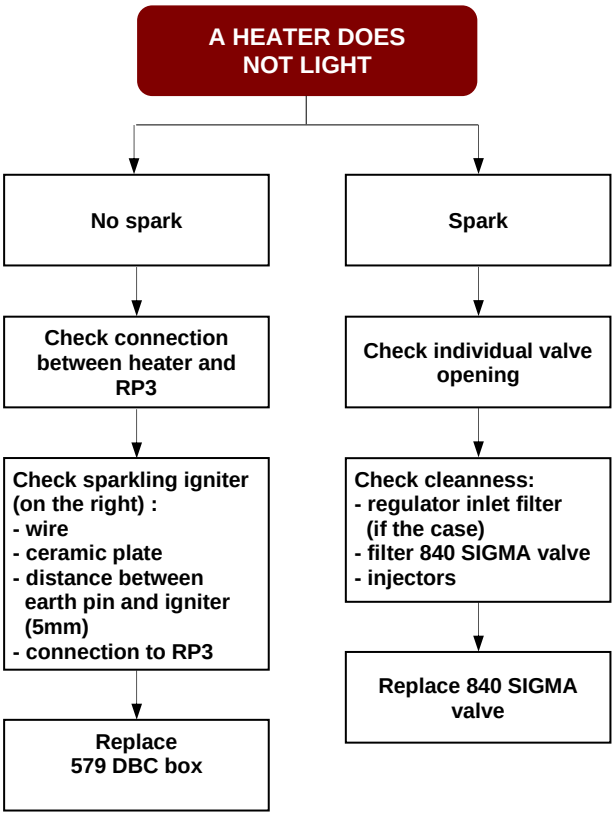
- ❑ Check condition of ceramic plates (**visual inspection**).
- ❑ Check heater fixing
- ❑ Check tightness of gas accessories
- ❑ Check heater operation:
  Switch on all heaters, check ignition and combustion. A combustion temperature of approximately 900°C (uniform orange red colour) ensures heater cleanliness and correct gas supply pressure.
- ❑ Check the good operation of control unit(s).
- ❑ Check all temperatures settings

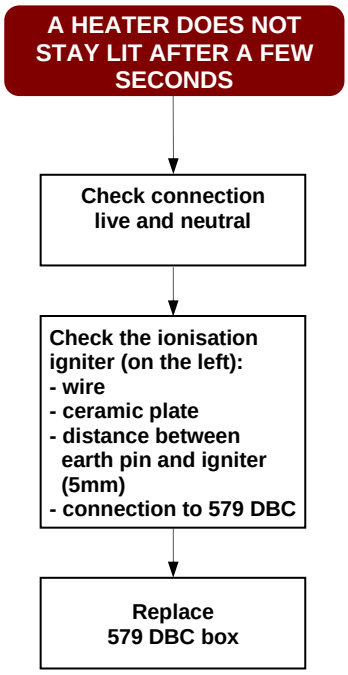
Once the maintenance done, reset the installation settings with initials.

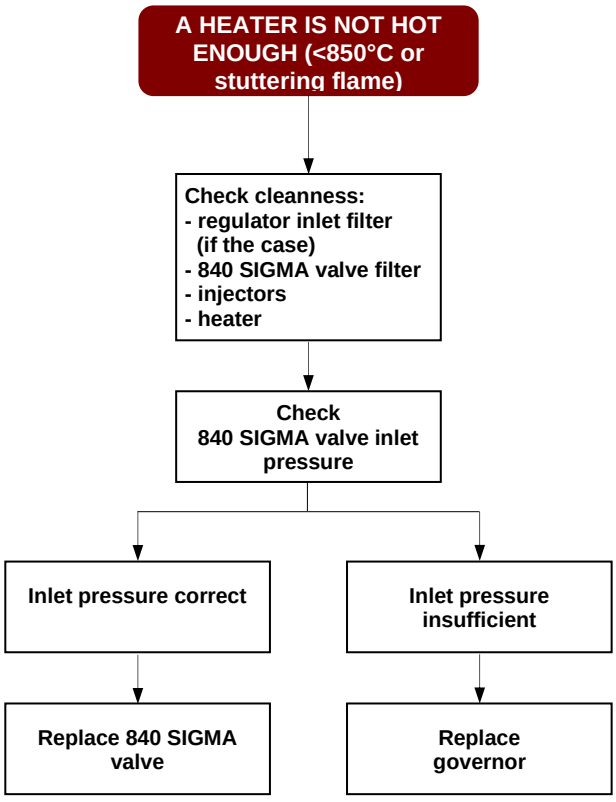
6. REPAIRS

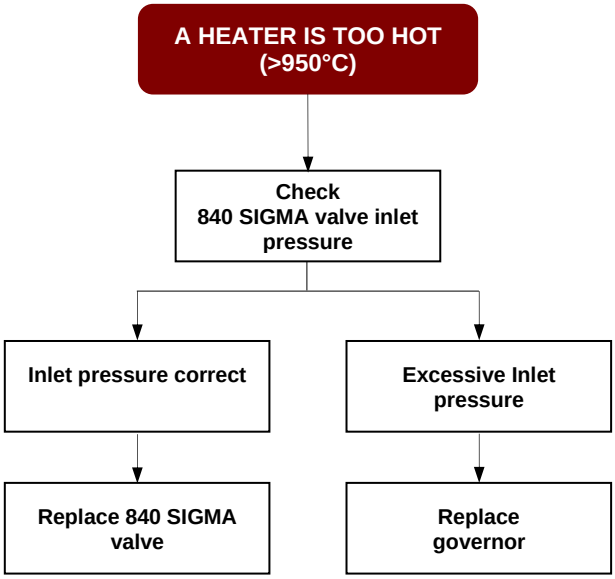
❒ Troubles on a single heater

First, *do not forget to check the compatibility of the heaters with the gas type and pressure.*



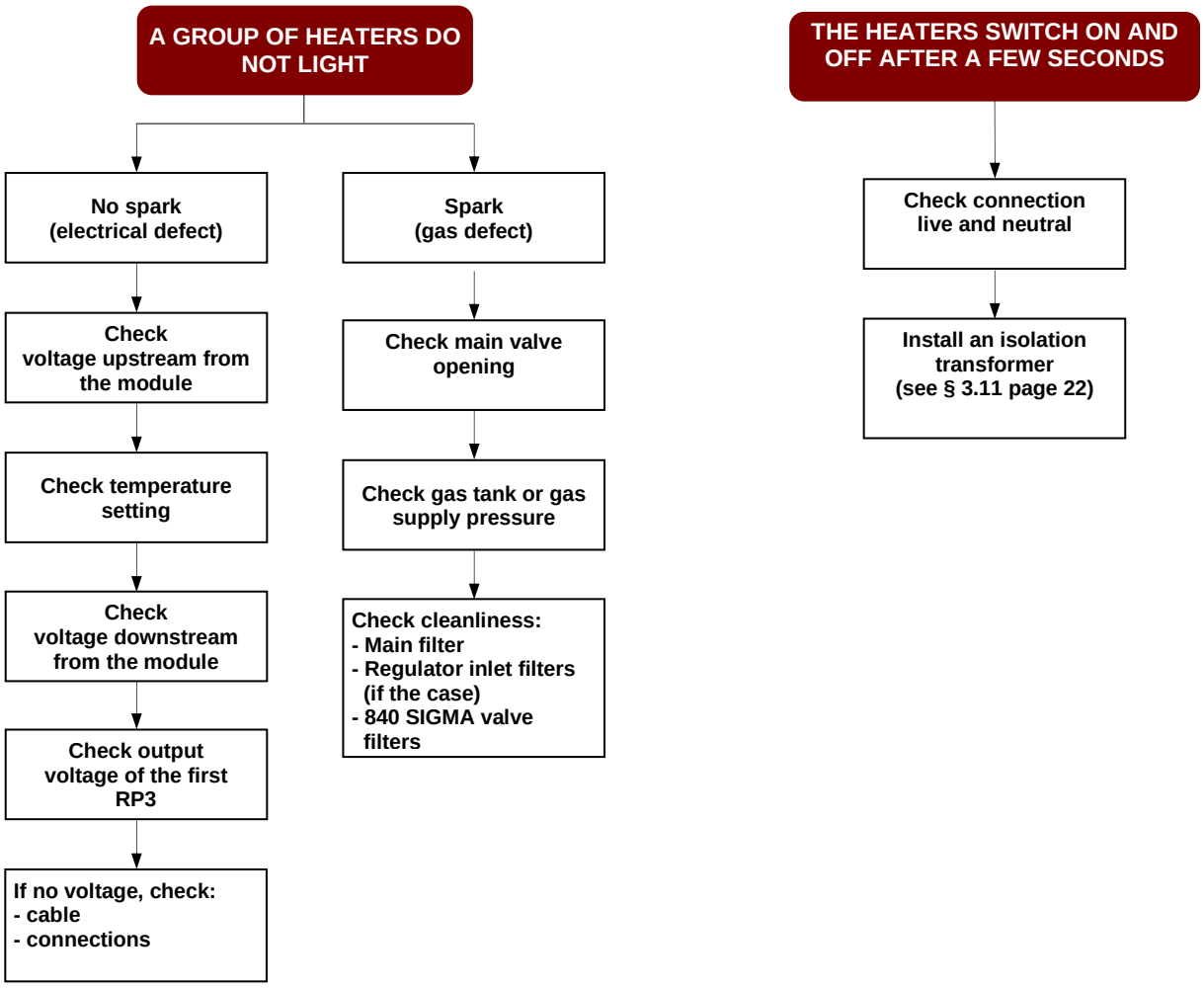






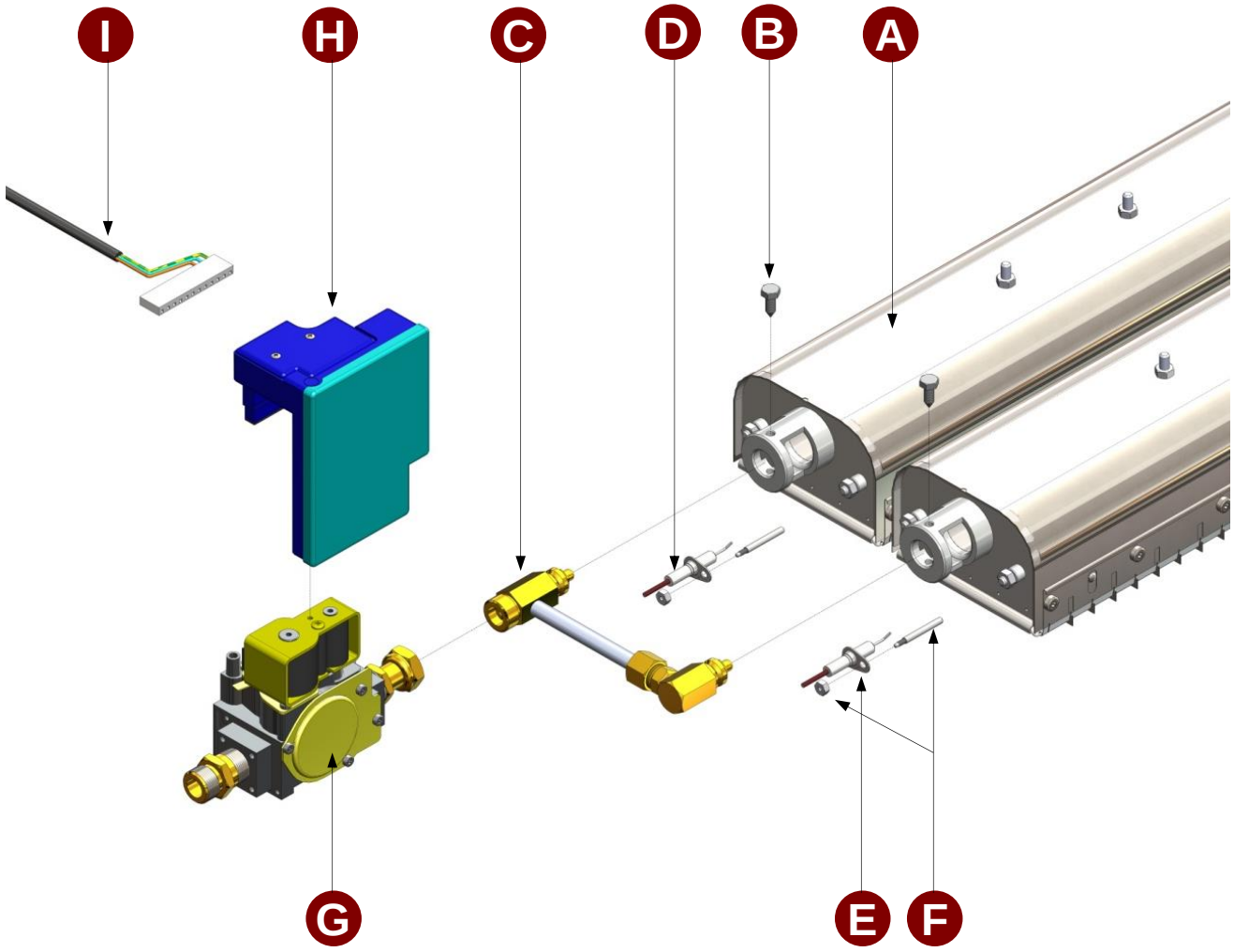
❒ Troubles on a group of heaters.

First, *do not forget to check the compatibility of the heaters with the gas type and pressure.*



❑ Spare parts for RI radiant heaters

For all order of spare parts, please specify:
- The radiant type and its serial number
- The gas type.
- The gas pressure.
All these information are shown on the data label stick on the heater.



REP	SPARE PARTS		
	Supply SBM		Comments
A	5010010 5012010 5016010	BR 10 SX 96 BR 12 SX 96 BR 16 SX 96	Burner for RI 20 and RI 20-2 Burner for RI 24 and RI 24-2 Burner for RI 32, RI 32-2, RI 48-2 and RI 64-2
B	9804000	10 LOCKING SCREW 6X100/16	Supplied by 10
C	5814603 5815603	BLOC U-0-XXX-XXX-00-A-12G BLOC D-0-XXX-XXX-00-A-12G	Supplied with mounted injectors for RI 20-2 RI 24-2, RI 32-2 and RI 48-2 Supplied with mounted injectors for RI 20, RI 24, RI 32, RI 48-2 and RI 64-2
D	9801019	IGNITER 300 CLIP 4.8	Flame detection. Cable of 300 mm length with cos 4.8x0.8
E	9801020	IGNITER 250 CLIP 2.8x0.5	Ignition. Cable of 250 mm length cos 2.8x0.5
F	9801016	EARTH PIN L3-NUT	Supplied with its nut
G	9803011	840 SOLENOID VALVE FITTING SET	Supplied with 2 gas fittings mounted and gasket
H	9803018	BLOCK 579 DBC 0579011	Supplied with 2 screws and gasket
I	9801021	RI CONNECTOR 1M/3FT	

7. CHANGING THE GAS USED

The gas conversion of the appliance shall be done by a qualified installer

❑ Gas used in Great Britain, Ireland and Turkey with the RI heater range

FAMILY	GAS	OPERATING PRESSURE
I_{2H}	G20	20 mbar
I_{3P}	G31	37 mbar

❑ Gas conversion:

To realise the gas conversion from one to another, please contact SBM.

❑ Principle

This operation must be down by a skilled technician.
It is composed of changing the BLOCK U-0-XXX-XXX-00-A-12G (see page 20) and setting the VALVE 840 SIGMA.

SBM can supply a conversion kit, composed of:
- one block: BLOCK U-0-XXX-XXX-00-A-12G with gas specific orifices.
- a gas changing label to stick near the rating plate.

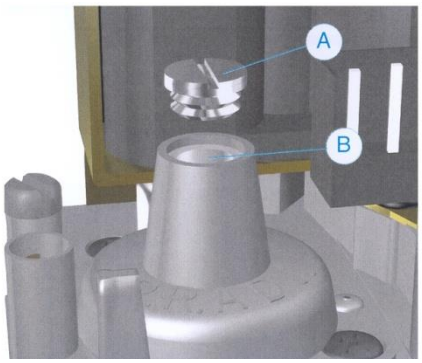
With all conversion kit order, please indicate:
- type / serial number of the heater.
- gas type.
- operating pressure.

All this information can be found on the rating plate on the heater.

❑ Successive operations:

- Replace BLOCK U-0-XXX-XXX-00-A-12G.
- Light the heater.
- Check the inlet pressure of the heater by means of an appropriate pressure gauge connected to the pressure control socket **C**. *(see table page 2 for inlet minimal, nominal and maximal pressures)*
- Check the injecting pressure at pressure control socket **D**.
- Adjust this injecting pressure by means of setting screw **B** after removing the cap **A**. *(see table page 2 for injecting pressures)*
  When the regulator needs to be blocked, tight the screw **B** to maximum but without excessive force.

Do not forget to tight again the screws when removing gauge hose.



- Stick the new gas changing label near the rating plate.

When replacing a 840 SIGMA valve, check all settings as described above.

8. COMMISSION REGULATION (EU) 2015/1188

Requirements for product information applicable to commercial local space heaters

Luminous heaters RI

Model identifier	**RI 6**	**RI 8**	**RI 10**	**RI 12**	**RI 16**	**RI 20**	**RI 20-2**	**RI 24**	**RI 24-2**	**RI 32**	**RI 32-2**	**RI 48-2**	**RI 64-2**
Type of heating	Luminous heaters												
Fuel	Gaseous												
Space heating emissions													
NO_x emissions (mg/kWh $_{PCS}$)	< 50												
Heat input													
Nominal heat input (kW $_{PCS}$)	2,8	3,7	4,2	5,7	7,5	8,4	8,4	11,4	11,4	15,0	15,0	22,5	30,0
Minimum heat input e (kW $_{PCS}$)	n.d	n.d	n.d	n.d	n.d	n.d	4,2	n.d	5,7	n.d	7,5	15,0	15,0
Minimum heat input e (% of P_{nom})	n.d	n.d	n.d	n.d	n.d	n.d	50	n.d	50	n.d	50	66	50
Radiant factor													
Radiant factor at nominal heat output	0,65	0,65	0,64	0,64	0,63	0,64	0,64	0,64	0,64	0,65	0,65	0,65	0,65
Radiant factor at minimum heat output	n.d	n.d	n.d	n.d	n.d	n.d	0,64	n.d	0,64	n.d	0,65	0,65	0,65
Auxiliary electricity consumption													
At nominal heat input (kW)	0,019	0,019	0,019	0,019	0,019	0,019	0,038	0,019	0,038	0,019	0,038	0,038	0,038
At minimum heat input (kW)	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019	0,019
In standby mode (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0
Heat output control type													
Single stage	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No
Two stages	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes
Modulating	No	No	No	No	No	No	No	No	No	No	No	No	No
Seasonnal efficiency													
Seasonnal space heating efficiency	85,9 %	85,9 %	85,4 %	85,4 %	85,0 %	85,4 %	87,8 %	85,4 %	87,8 %	85,9 %	88,3 %	88,3 %	88,3 %

End of life :
SBM radiant heaters includes electronic elements (gas valve and electronic block) which must be brought to a collection point for waste electrical equipment and electronics (WEEE). Comply with the waste disposal regulations in force when decommissioning.