



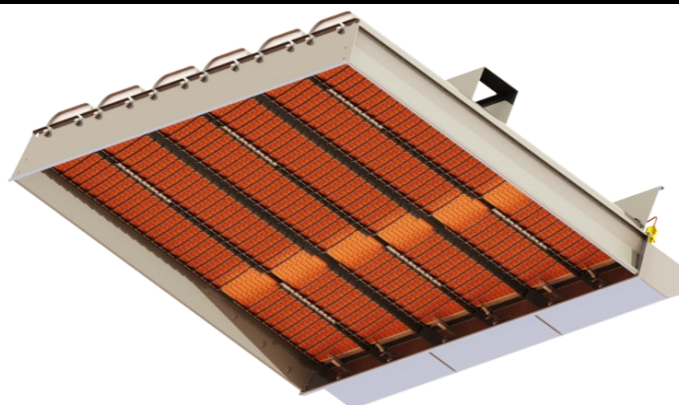
GAS INFRARED HEATERS



SX INSTALLER INSTRUCTIONS

N° 05000040/17

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Manufacturer :
SBM
3 cottages de la Norge
21490 CLENAY - FRANCE

Agent :




1. PRODUCT SPECIFICATION


1.1

Technical specifications :

GAS : G20 (Natural gas) - Category : I_{2H} GB/IE

MODEL	B6	B8	B10	B12	B16	B20	B20-2	B24	B24-2	B32	B32-2	B48-2	B64-2	B120-2
Certificat number 	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312
	AP230	AP230	AP231	AP231	AP232	AP232	AP233	AP232	AP233	AP232	AP233	AP249	AP249	AP249
Class NOx	5 (< 50 mg/kWh)													
Weight (kg)	2.5	2.9	3.1	3.4	4.1	5.0	5.0	5.5	5.5	6.7	6.7	9.4	12.2	22
Calorific values														
ΣQn (Hi) (kW) (Net)	2.50	3.30	3.80	5.10	6.75	7.60	7.60	10.20	10.20	13.50	13.50	20.25	27.00	52.23
ΣQn (Hs) (kW) (Gross)	2.80	3.65	4.25	5.65	7.50	8.45	8.45	11.35	11.35	15.00	15.00	22.50	30.00	58.00
GAS														
Inlet pressure <i>p</i> (mbar)	20													
Injection pressure <i>p_i</i> (mbar)	13.0	11.0	12.0	15.0	16.7	12.0	12.0	15.0	15.0	16.7	16.7	see B	16.7	21 to 25
Gas consumption (m ³ /h)	0.265	0.350	0.400	0.540	0.715	0.805	0.805	1.080	1.080	1.430	1.430	2.145	2.860	5.530
Ø secondary orifice (1/100 mm)	135	165	170	180	195	2x170	2x170	2x180	2x180	2x195	2x195	see A	4x195	6x205
Ø Primary orifice (1/100 mm)	170	180	195	240	320	260	2x195	380	2x240	-	2x320	see A	-	-
Gas input connection	Fitting G1/2" male (ISO 228-1)													
Exhaust gas system type	Type A ₁ (no need)													
ELECTRICITY														
Power supply	230V (+10% -15%) – 50Hz Neutral mandatory													
Consumption (A)	0.1						2x0.1	0.1	2x0.1	0.1	2x0.1			3x0.1
Capacity (VA)	28						2x28	28	2x28	28	2x28			3x28
Protection indice	IP64 (with our including connector)													
Externat fuse 5x20 (RP3/RP32)	0.25						2x0.25	0.25	2x0.25	0.25	2x0.25			2x0.25
Ignition cycle length	45 seconds													
VENTILATION														
Combustion air (m ³ /h)	2.60	3.40	3.90	5.30	7.00	7.90	7.90	10.50	10.50	13.90	13.90	21.00	27.80	52.00
Air renewal need (m ³ /h)	25.0	33.0	38.0	51.0	67.5	76.0	76.0	102.0	102.0	135.0	135.0	202.5	270	522

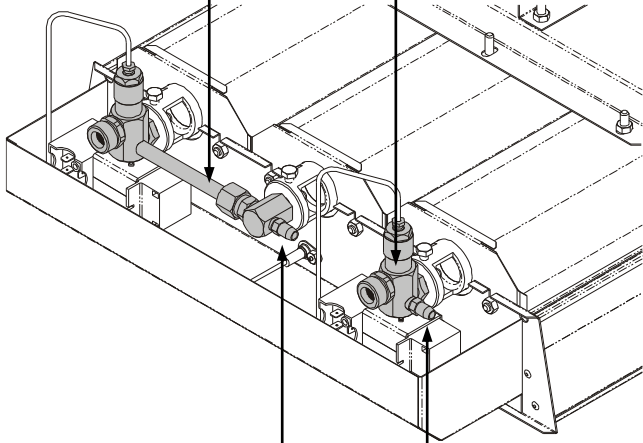
GAS : G31 (Propane) - Category : I_{3P} GB/IE

MODEL	B6 SX	B8 SX	B10 SX	B12 SX	B16 SX	B20 SX	B20 2SX	B24 SX	B24 2SX	B32 SX	B32 2SX	B48 2SX	B64 2SX
Certificat number 	1312 AP 230	1312 AP 230	1312 AP 231	1312 AP 231	1312 AP 232	1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 232	1312 AP 233	1312 AP 249	1312 AP 249
Class NOx	4												
Weight (kg)	2.5	2.9	3.1	3.4	4.1	5.0	5.0	5.5	5.5	6.7	6.7	9.4	12.2
Net calorific value ΣQn (kW) Hi	2.50	3.30	3.80	5.10	6.75	7.60	7.60	10.20	10.20	13.50	13.50	20.25	27.00
GAS													
Inlet pressure	37 mbar												
Injection pressure (mbar)	34	21	21	28	37	21	21	27,5	28	34	37	(See B)	34
Gas consumption (kg/h)	0.195	0.260	0.300	0.400	0.530	0.595	0.595	0.800	0.800	1.055	1.055	1.590	2.110
Ø prim. Inject. (1/100 mm)	155	140	130	180	-	185	2x130	240	2x180	370	-	(See A)	2x370
Ø sec. Inject. (1/100 mm)	82	105	110	125	135	2x110	2x110	2x125	2x125	2x135	2x135	(See A)	4x135
Gas input connection	Fitting G1/2" cylindrical (ISO 228-1)												
ELECTRICITY													
Power supply	230V (+10% -15%) – 50Hz Neutral mandatory												
Consumption	0.1A						2x0.1A	0.1A	2x0.1A	0.1A	2x0.1A		
Individual fuse	0.25A						2x0.25A	0.25A	2x0.25A	0.25A	2x0.25A		
Ignition cycle length	45 seconds												
VENTILATION													
Combustion air (m³/h)	2.30	3.10	3.60	4.80	6.30	7.10	7.10	9.60	9.60	12.60	12.60	18.90	25.20
Required air change (m³/h)	25	33	38	51	67.5	76	76	102	102	135	135	202.5	270

A

G20	prim : -	prim : 320
	sec : 2 x 195	sec : 195
G31	prim : 370	prim : -
	sec : 2 x 135	sec : 135

B48-2SX

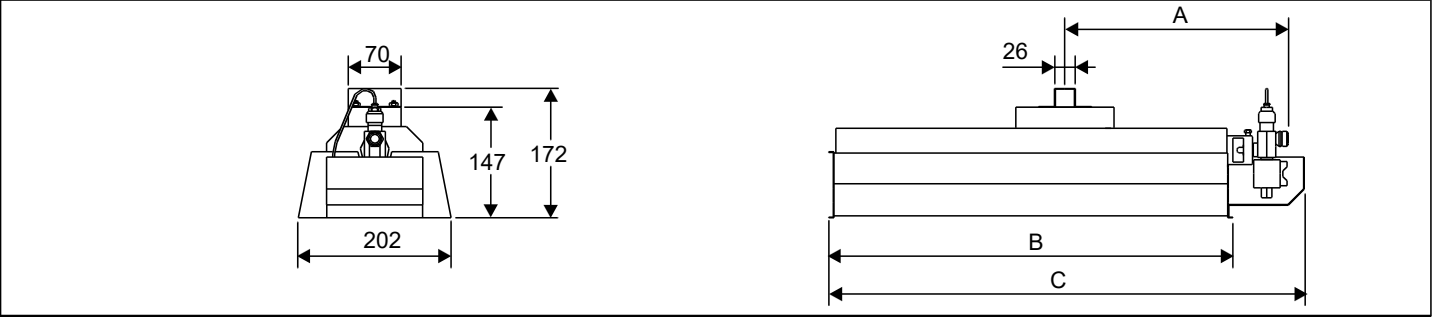


B

G20	16,7 mbar	16,7 mbar
G31	34,0 mbar	37,0 mbar

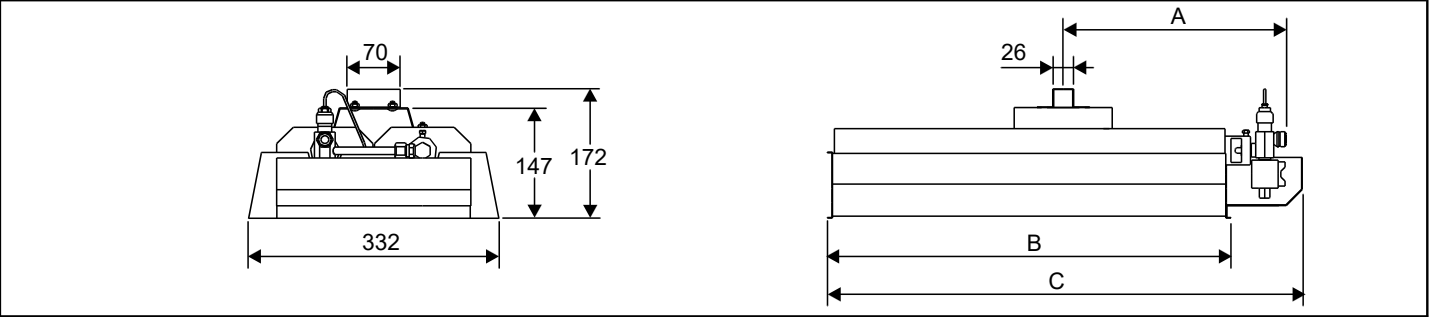
1.2 SX heater dimensions :

B6, B8, B10, B12 and B16 SX



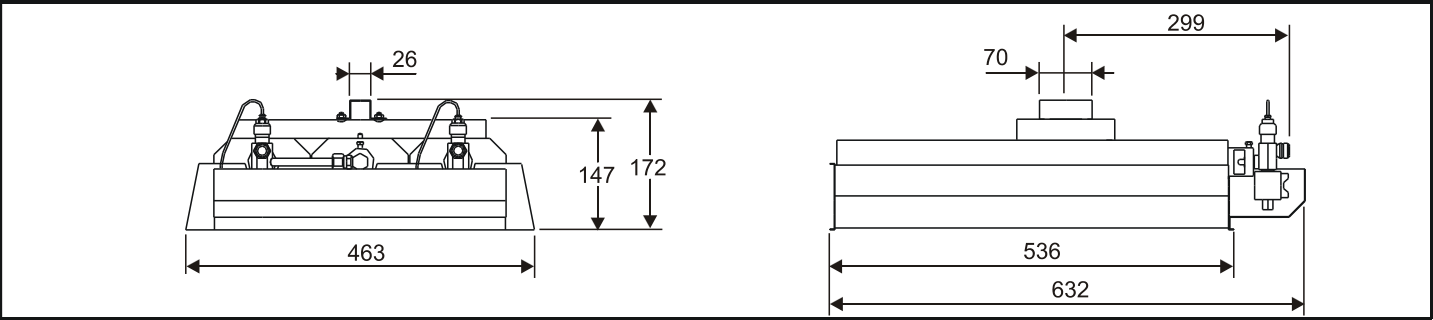
MODEL	B6-SX	B8-SX	B10-SX	B12-SX	B16-SX
A (mm)	186	218	243	281	299
B (mm)	222	285	334	411	536
C (mm)	318	382	431	508	632

B20, B20-2, B24, B24-2, B32 and B32-2SX

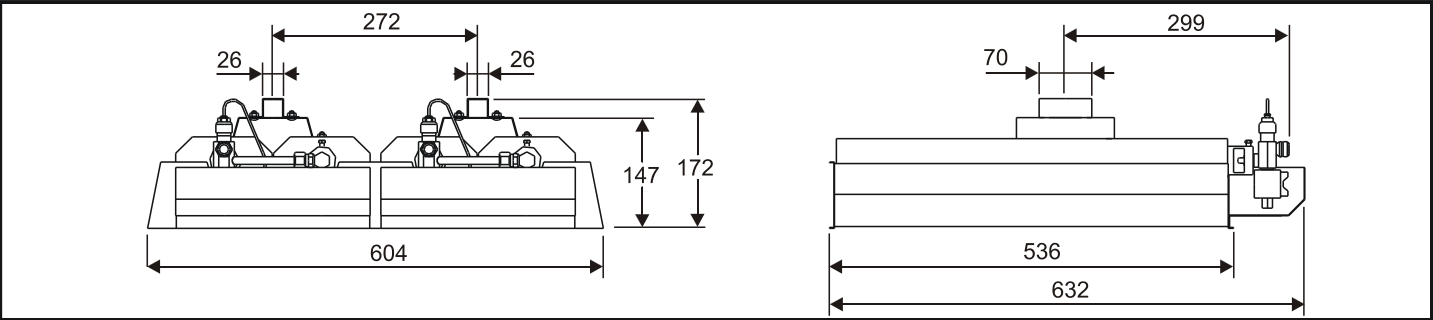


MODEL	B20-SX	B20-2SX	B24-SX	B24-2SX	B32-SX	B32-2SX
A (mm)	243	243	281	281	299	299
B (mm)	334	334	411	411	536	536
C (mm)	431	431	508	508	632	632

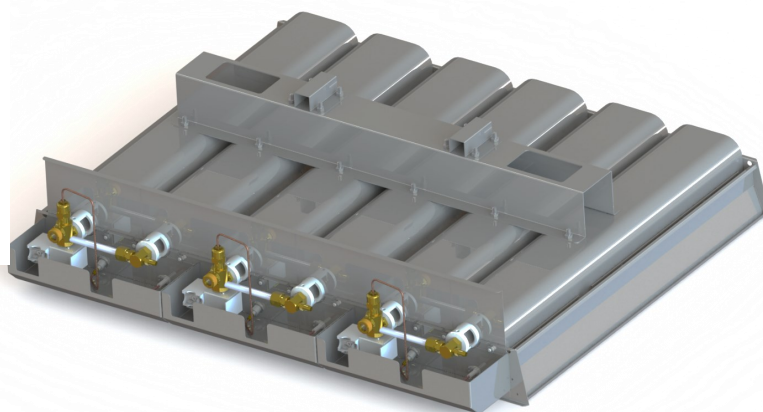
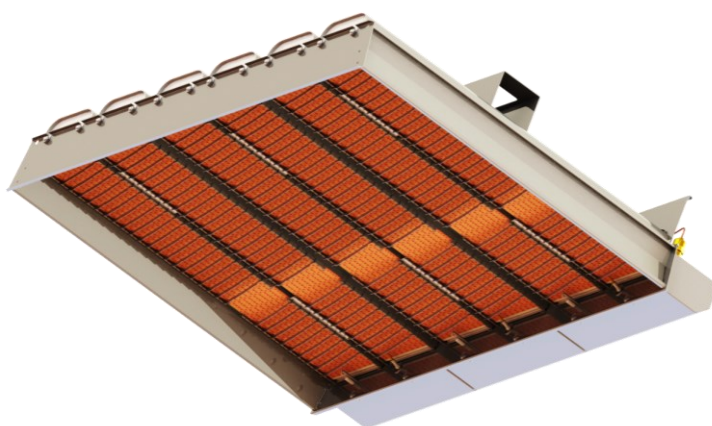
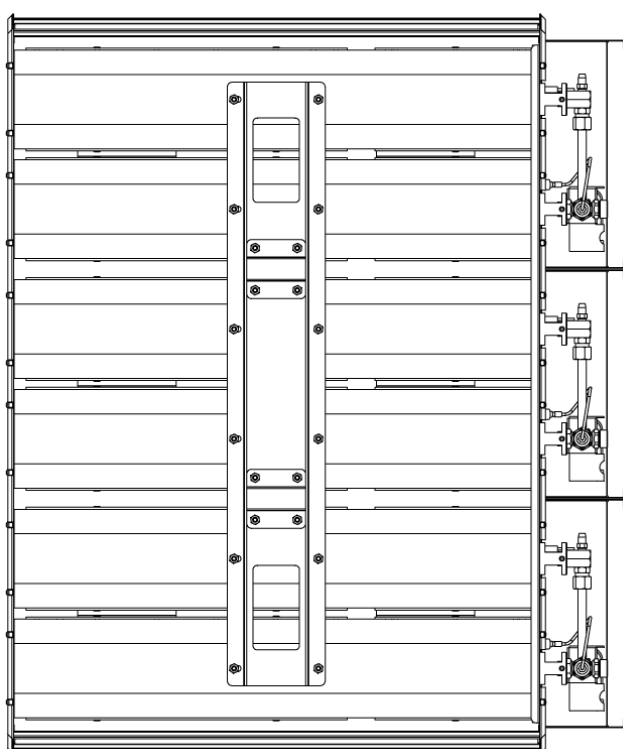
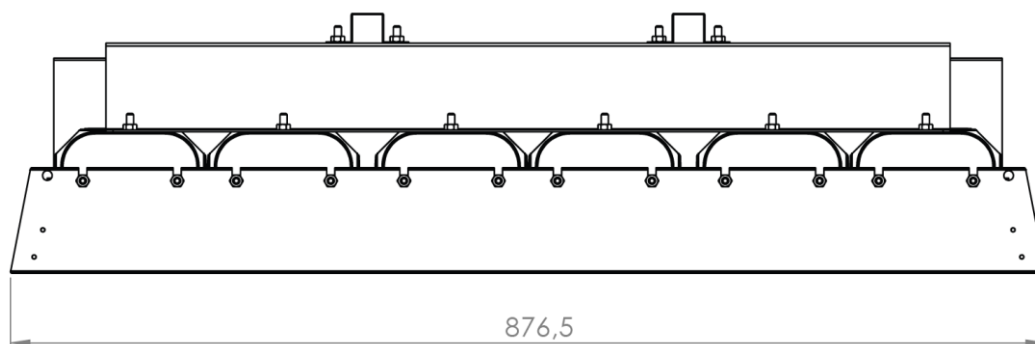
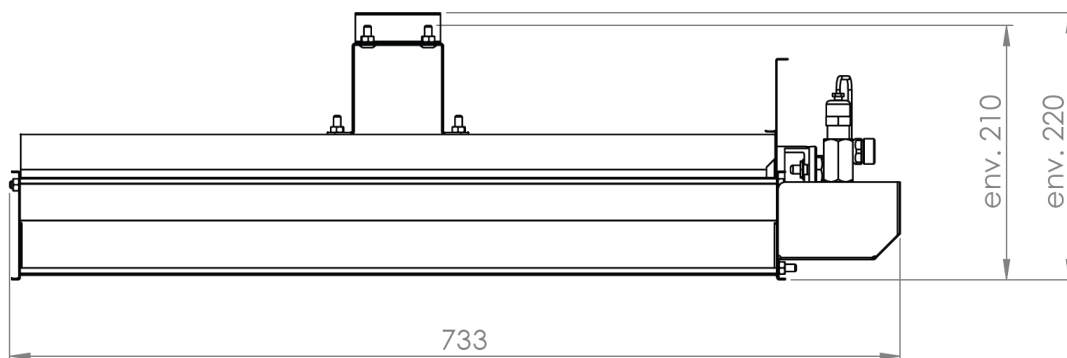
B48-2 SX



B64-2 SX



B120-2 SX



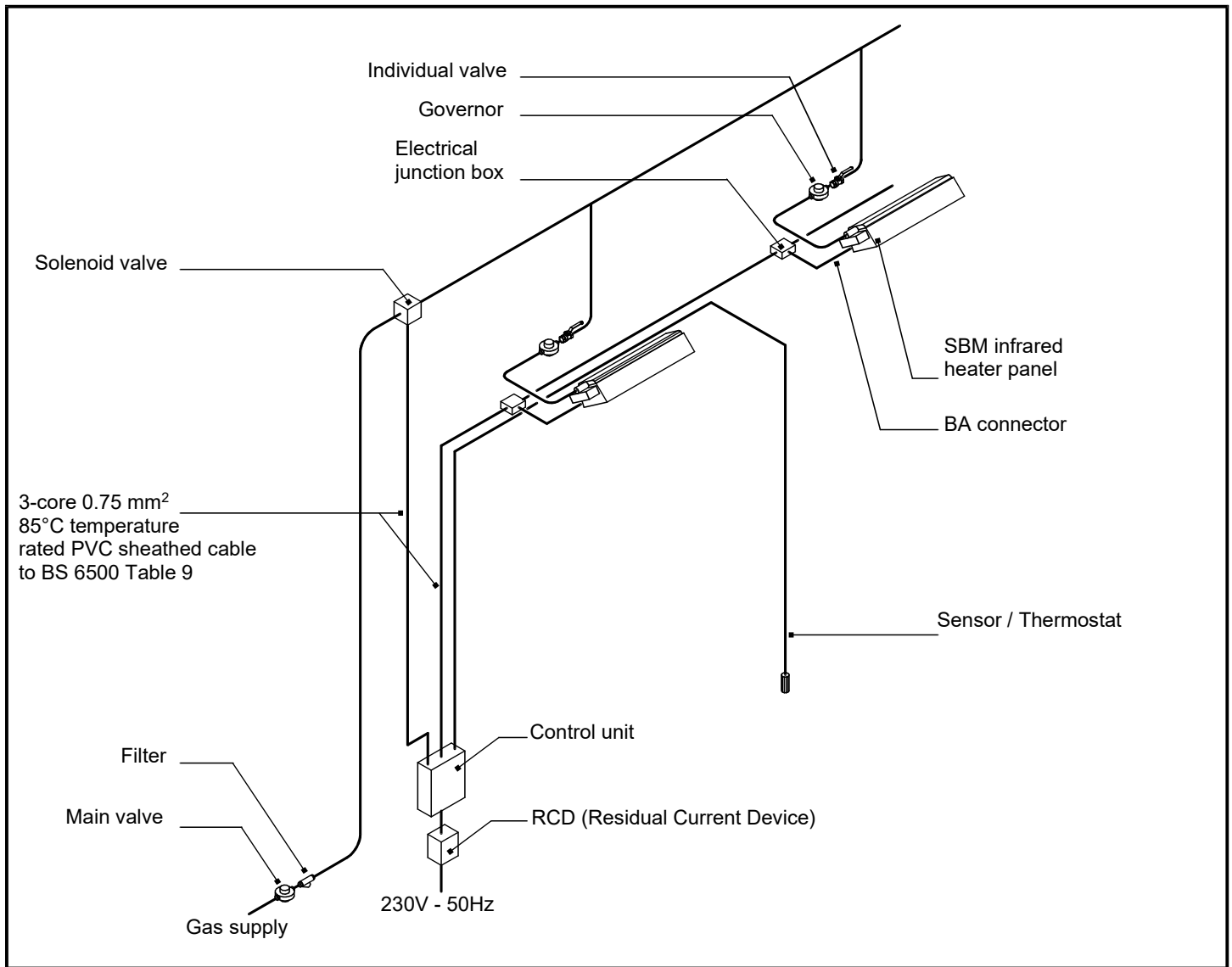
2. INSTALLATION

THESE HEATERS MUST BE INSTALLED IN ACCORDANCE WITH APPLICABLE REGULATIONS AND IN WELL VENTILATED PREMISES.

2.1 Rules and regulations

- ☐ SBM infrared heaters are **CE** approved.
- ☐ The premises must be ventilated in accordance with the norm EN13410.
- ☐ 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.

2.2 Diagram of a standard installation.



2.3 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, register a complaint to this effect with the carrier.
- ☐ Check gas type and pressure to be used on heaters.

2.4 Fixing of heaters

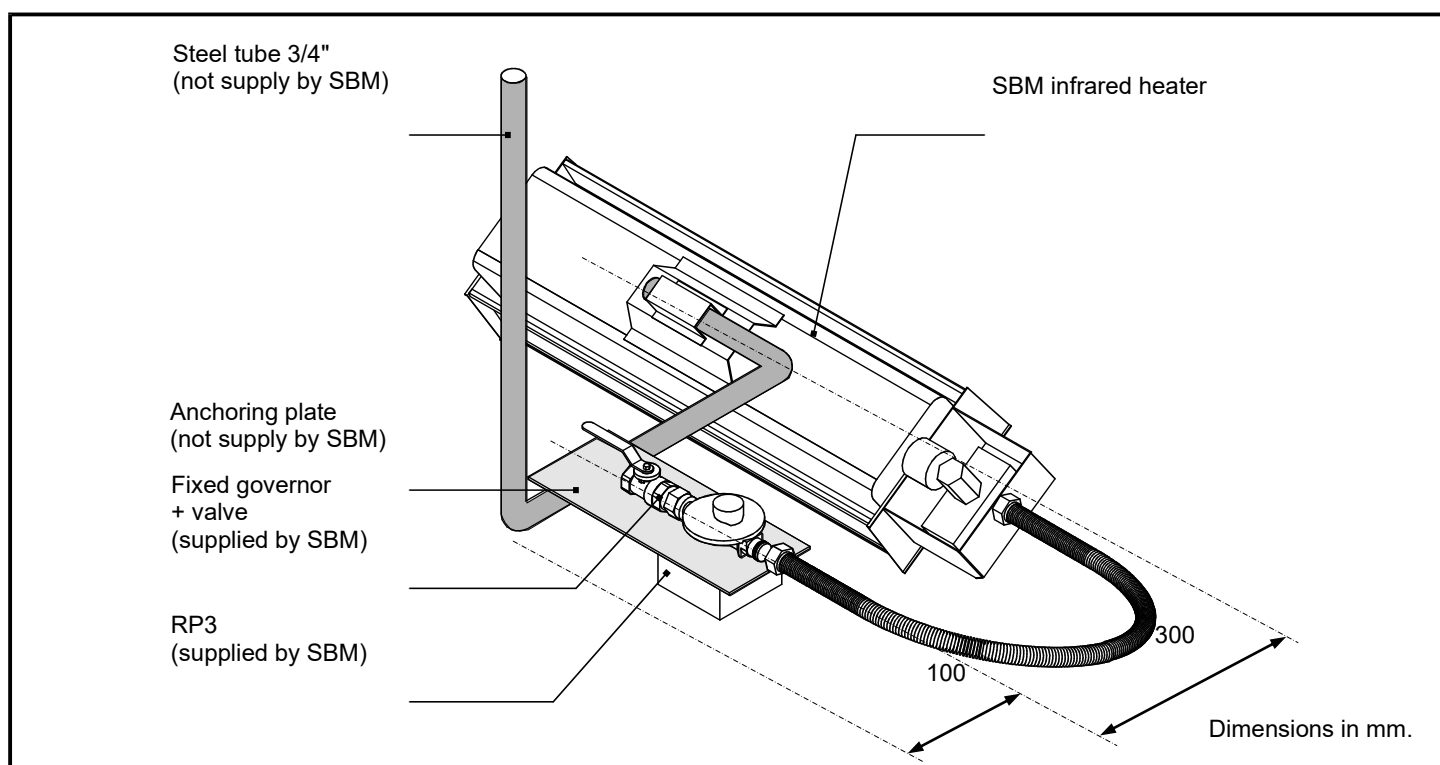
- Minimum recommended safety heights:

MODEL	MIN HEIGHT (m)
B6-SX	3.00
B8-SX	3.10
B10-SX	3.20
B12-SX	3.40
B16-SX	3.60
B20-SX / B20-2SX	3.80
B24-SX / B24-2SX	4.10
B32-SX / B32-2SX	4.50
B48-2SX	5.00
B64-2SX	5.50
B120-2SX	8.00

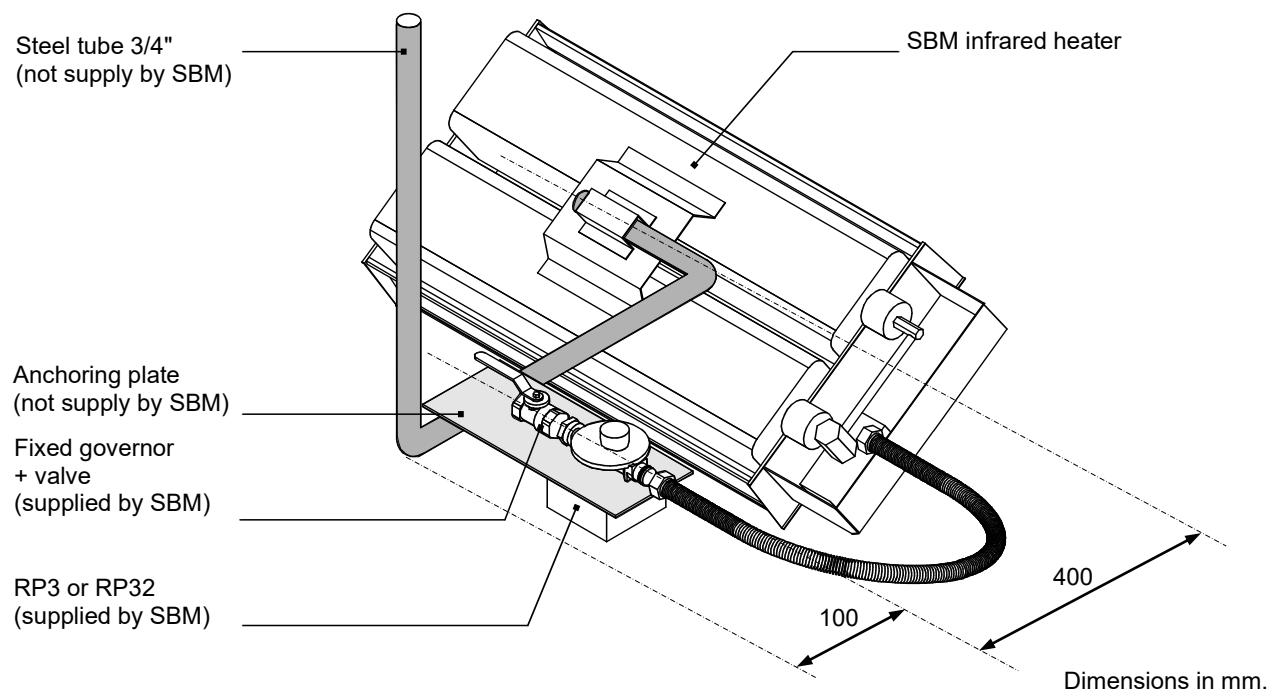
MINIMUM COMFORT HEIGHTS: refer to the specific SBM case study for each project.

- Examples of fixtures to be supplied by the installer:

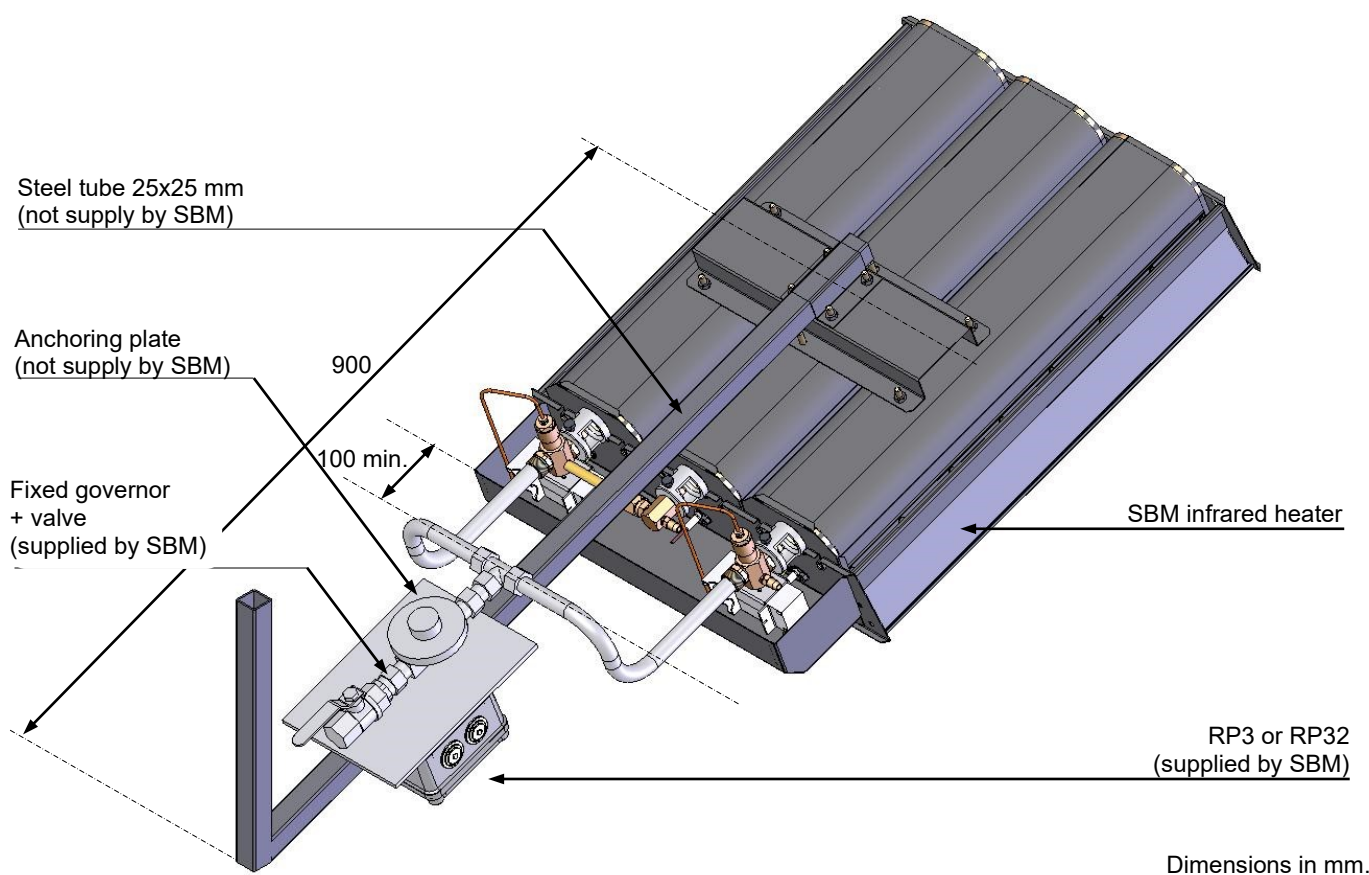
FOR TYPE B6, B8, B10, B12 and B16 SX HEATER



FOR TYPE B20, B20-2, B24, B24-2, B32 and B32-2SX HEATERS



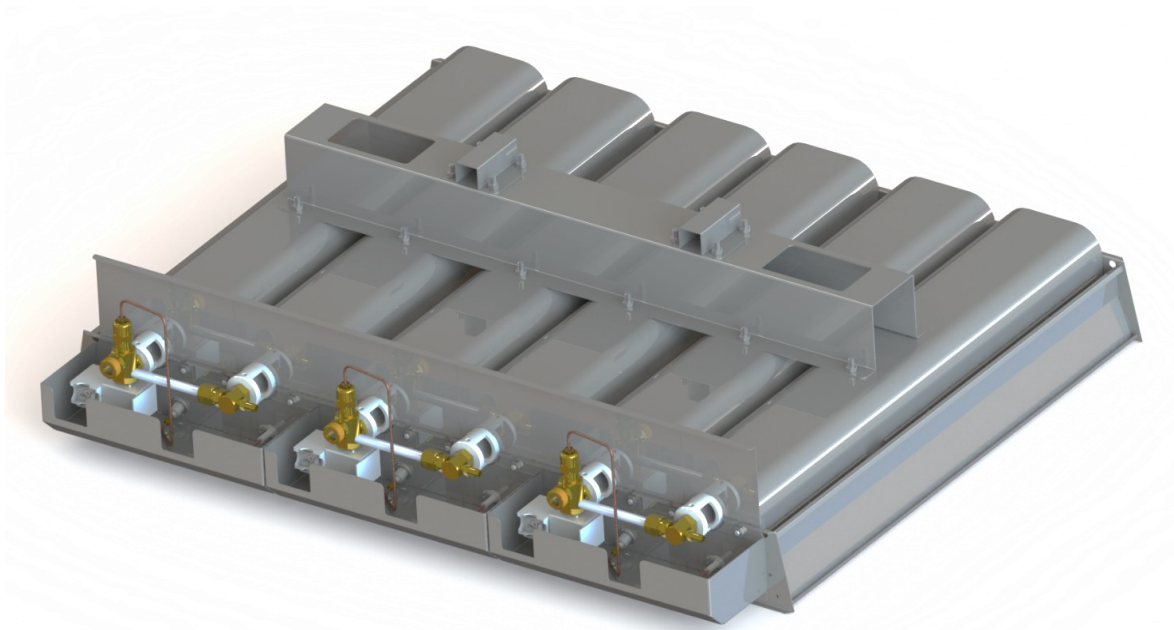
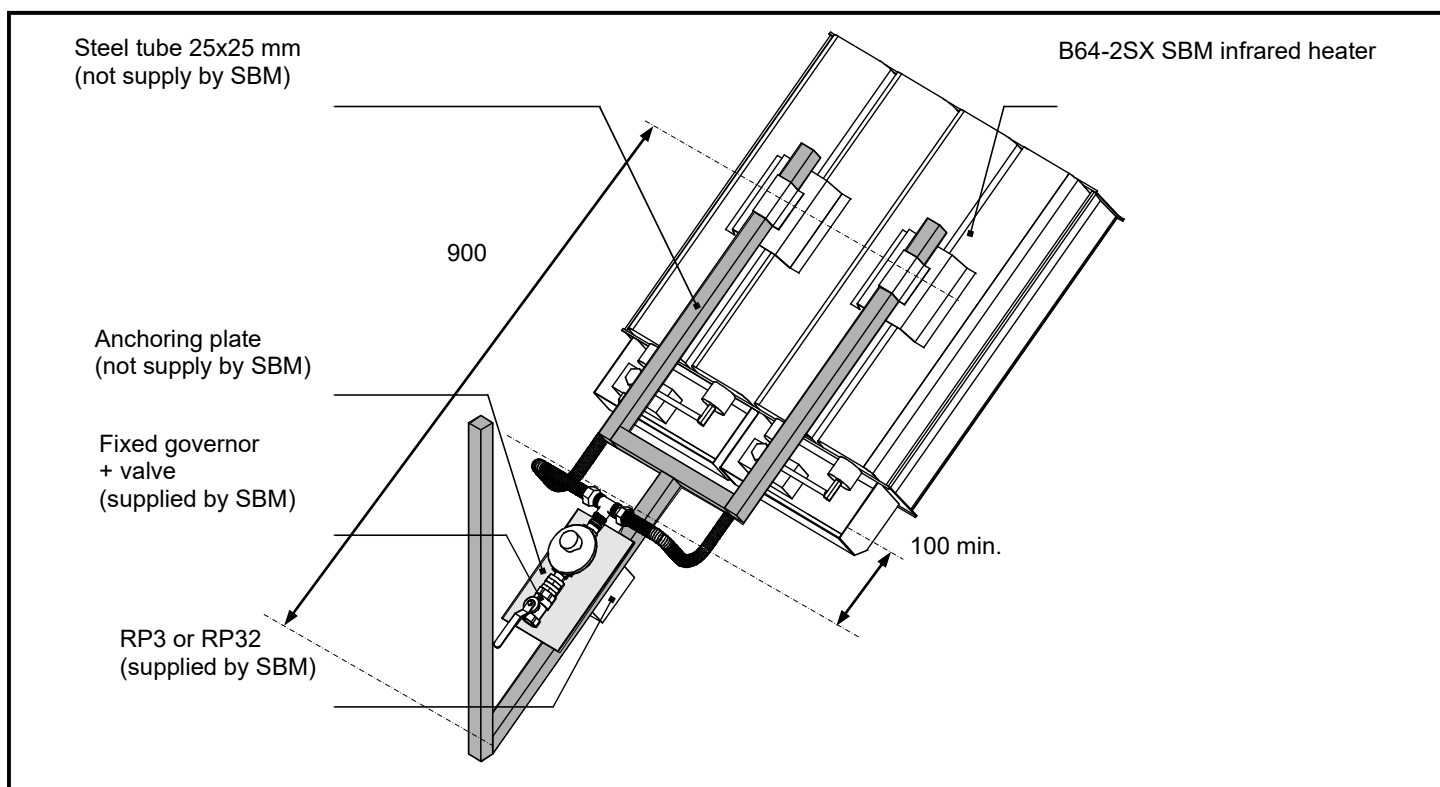
FOR TYPE B48-2SX HEATERS



FOR TYPES

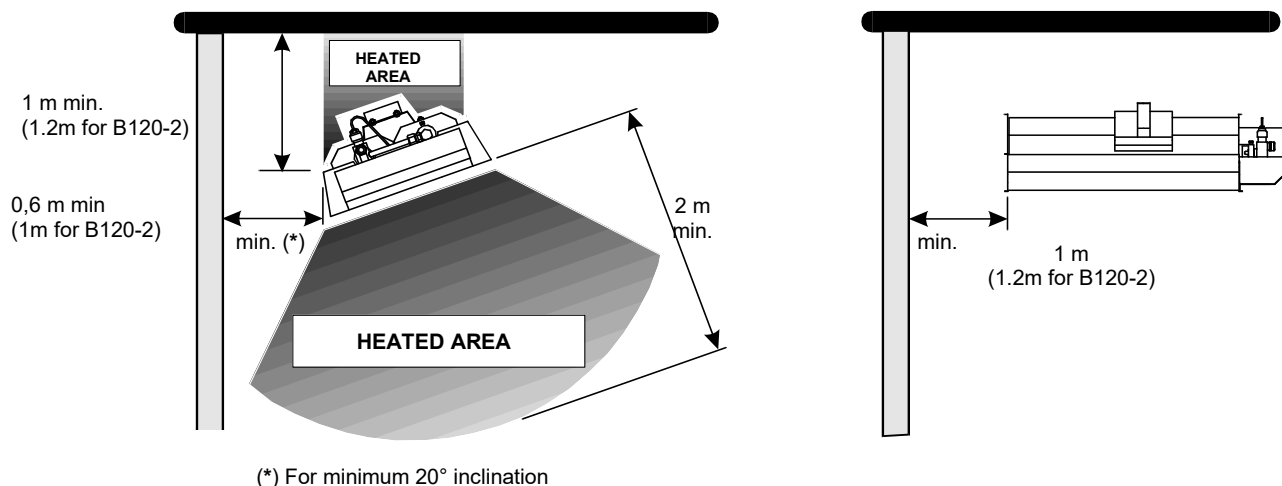
B64-2SX HEATERS (1 RP32 : 2 burners together 0.25A + 2 burners together 0.25A)

B120-2SX (1 RP32 : 4 burners together 0.25A + 2 burners together 0.25A)



B120-2 SX

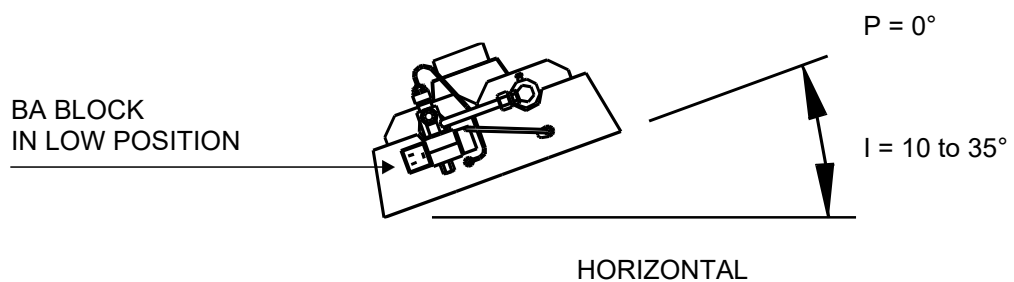
2.5 Minimum safety clearances (Inflammable materials: $\theta_{\max} = 70^{\circ}\text{C}$)



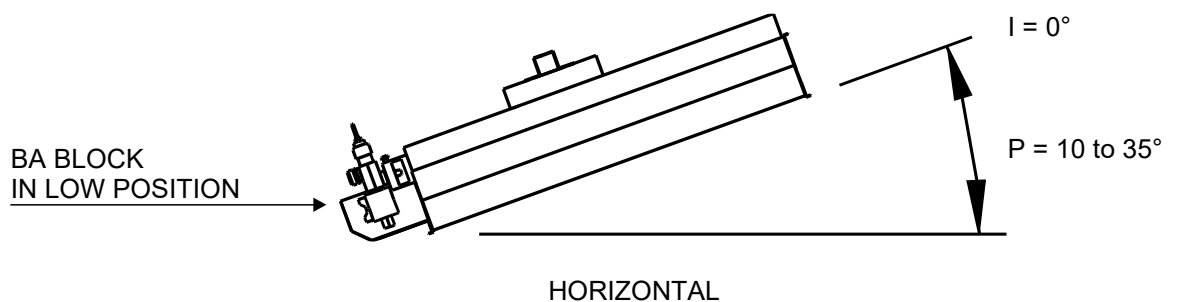
- ❑ Where safety clearances cannot be respected, **heat-protection** must be provided above heater.

2.6 Inclination of heaters

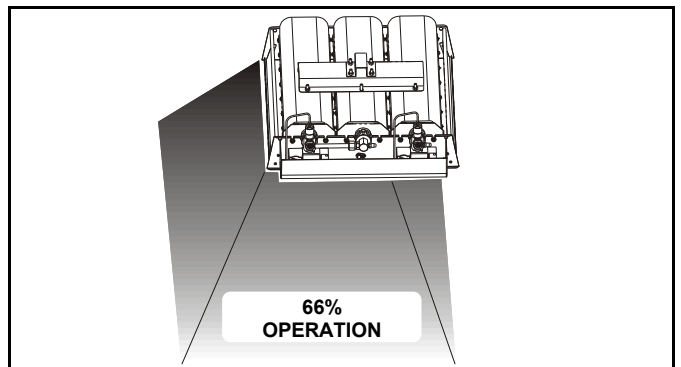
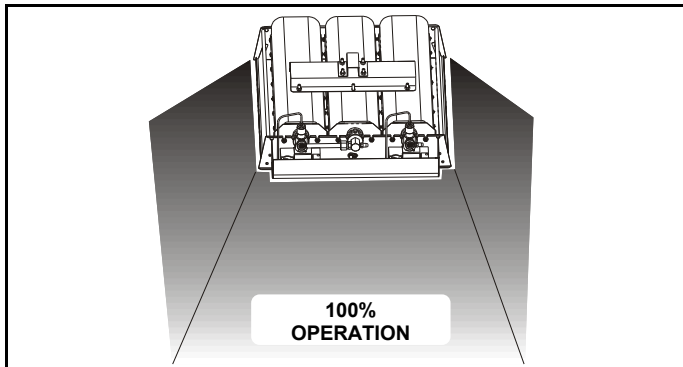
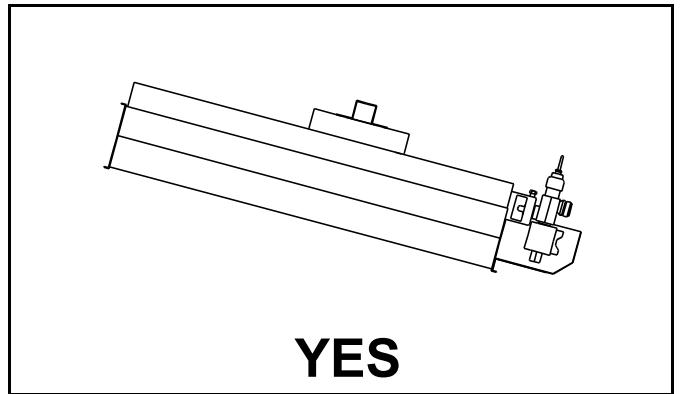
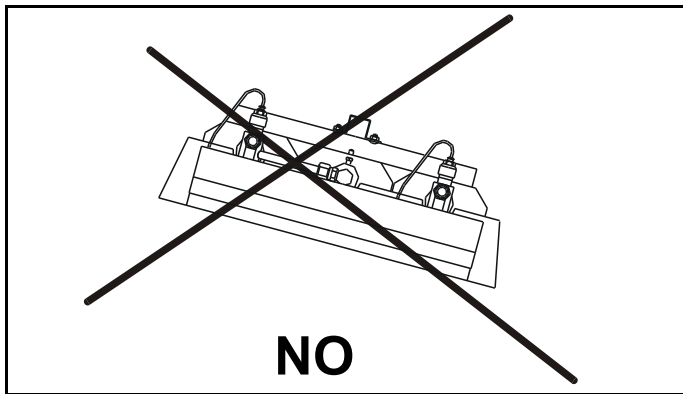
- ❑ In all cases, slope "P" or inclination "I" must be at least **10°**.
- ❑ The "P" and "I" values recommended for your installation are indicated on the SBM plan attached to the case study (if one has been carried out).
- ❑ **Always** position the automatic ignition block (**BA block**) in **low position**.
- ❑ Lateral inclination "I".



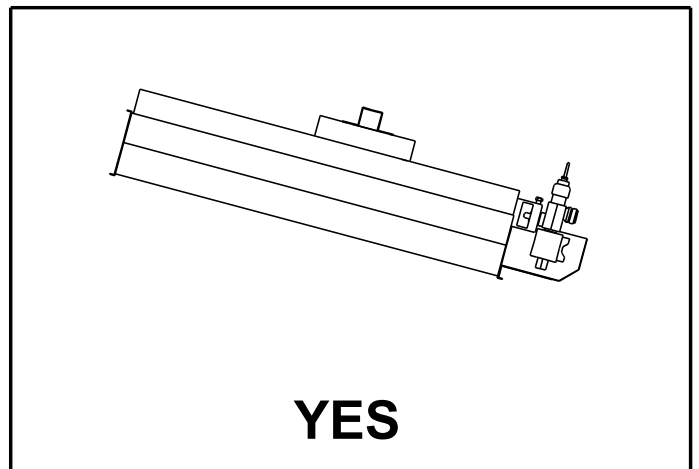
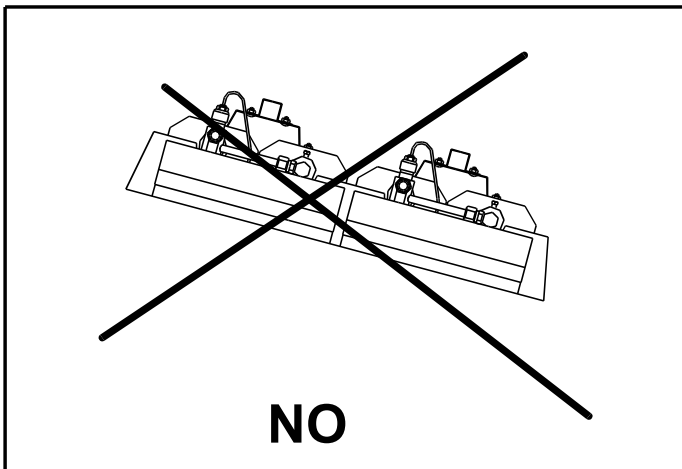
- ❑ Longitudinal inclination "P".



❑ For **B48-2SX**

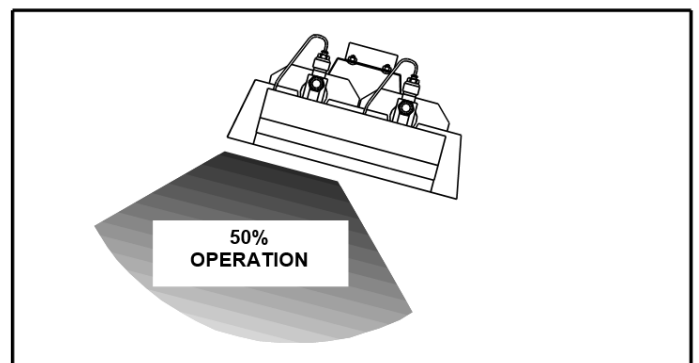
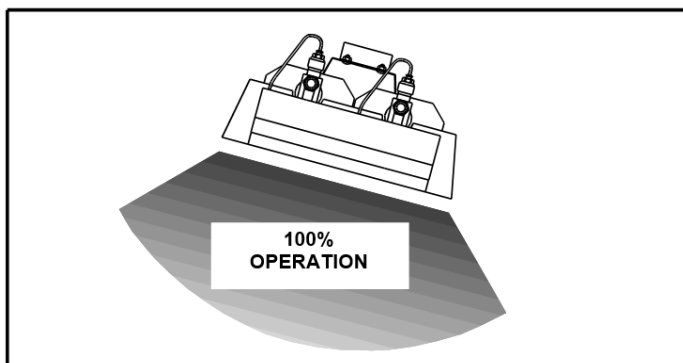


❑ For **B64-2SX**

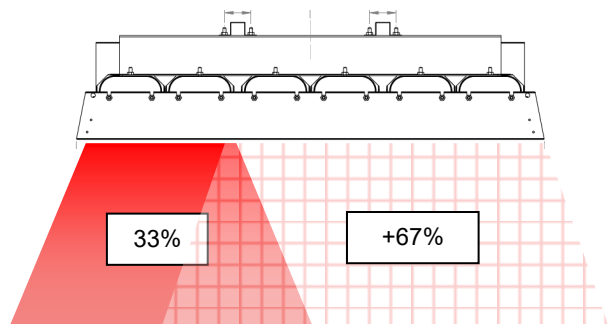
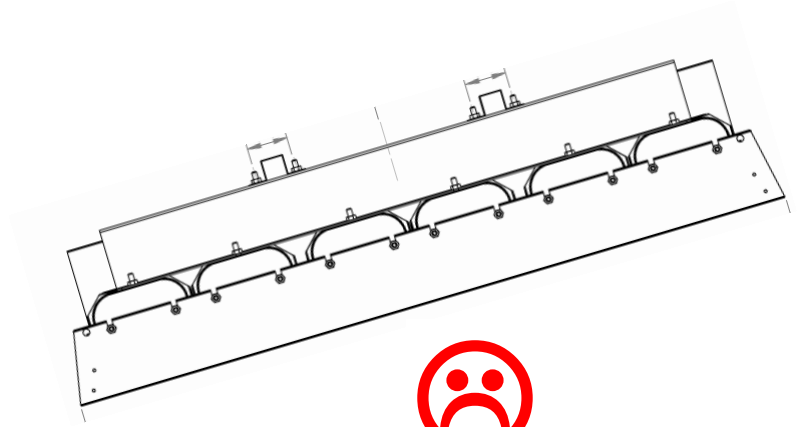
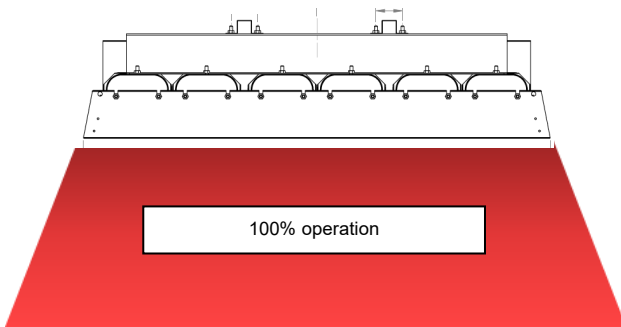
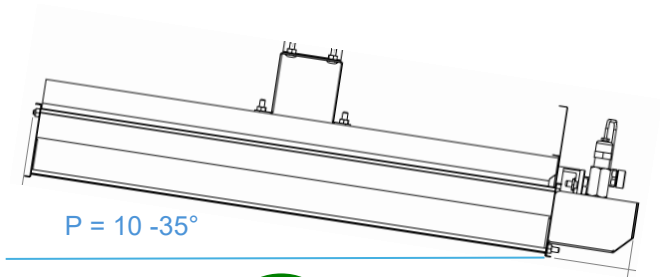


❑ For **B20-2SX, B24-2SX and B32-2SX** with lateral inclination.

ALWAYS LIGHT THE TOP BURNER FIRST.



❑ B120-2SX inclination.

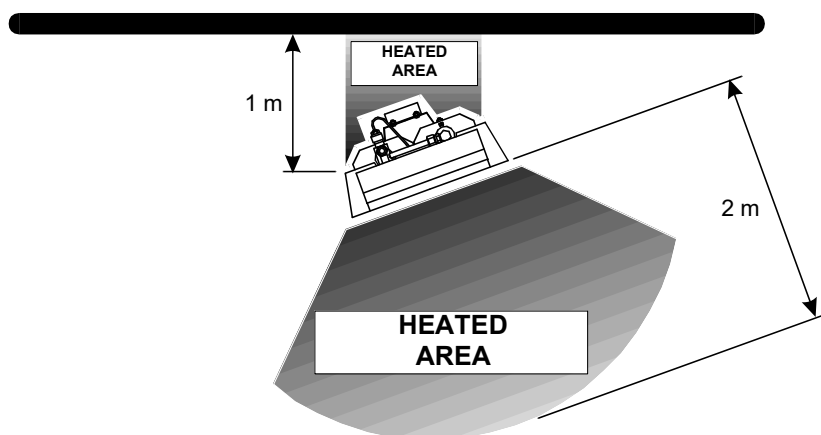


2.7 Gas connection

BEFORE INSTALLATION, CHECK THAT LOCAL CONDITIONS OF SUPPLY, GAS TYPE / PRESSURE AND EQUIPMENT SETTINGS ARE COMPATIBLE.

❑ Gas supply piping must not:

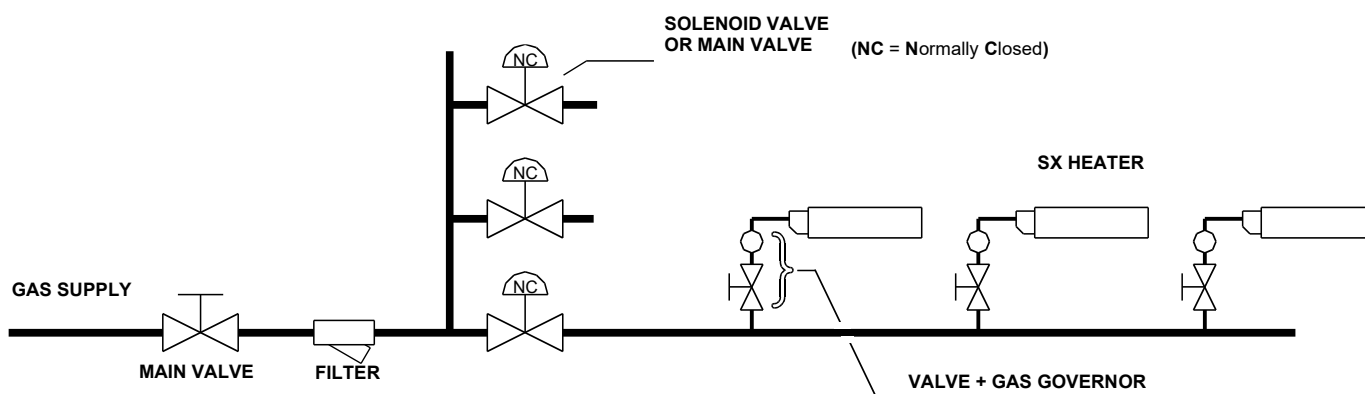
- be located in the heated area around a heater (see diagram below).
- produce any stress on the injector block. (Use preferably a metallic flex 12 Gf)



❑ **MEDIUM PRESSURE GAS SUPPLY**

Gas supply pressure greater than the heater operating pressure (see tables on pages 2 and 3).

GAS	GAS SUPPLY PRESSURE
G20 (Natural gas)	200 mbar at 1.5 bar max.
G31(Propane)	500 mbar at 1.5 bar max.

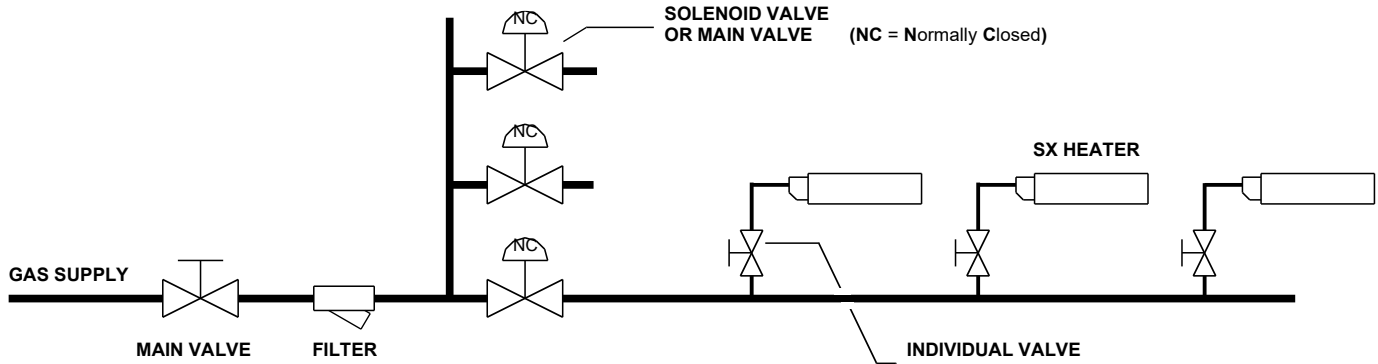


❑ LOW PRESSURE GAS SUPPLY

The gas supply pressure is identical to the heater operating pressure (see tables on pages 2 and 3).

GAS	GAS SUPPLY PRESSURE
G20 (Natural gas)	20 mbar (*) 25 mbar for B120-2SX

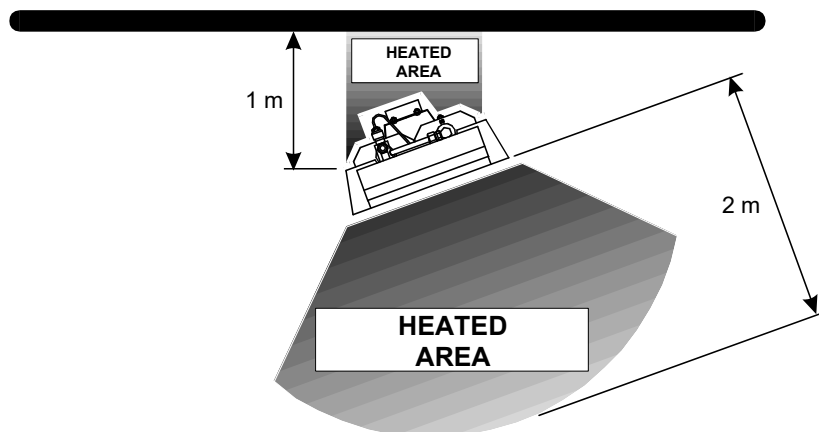
* acceptable total pressure loss: approx. 1 mbar.



2.8 Electrical connections

See diagram of a standard installation. (§2.2, page 6)

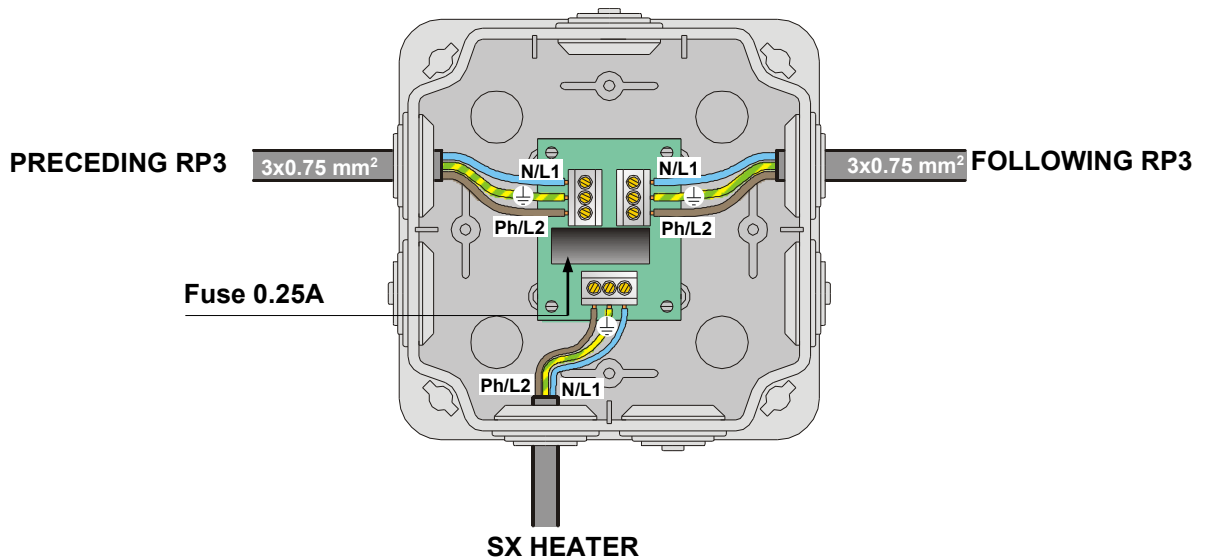
- ❑ Electrical connections must comply with I.E.E. Regulations.
- ❑ Use a **NEUTRAL** conductor or provide an **ISOLATION TRANSFORMER**.
- ❑ All heaters must be **EARTHED**.
- ❑ Control : **SX** heaters are controlled by **VisioLon Ind-T** programmable controllers. Refer to the technical instructions.
- ❑ Electric cables must not be positioned in the heated area around a heater. (see diagram below)



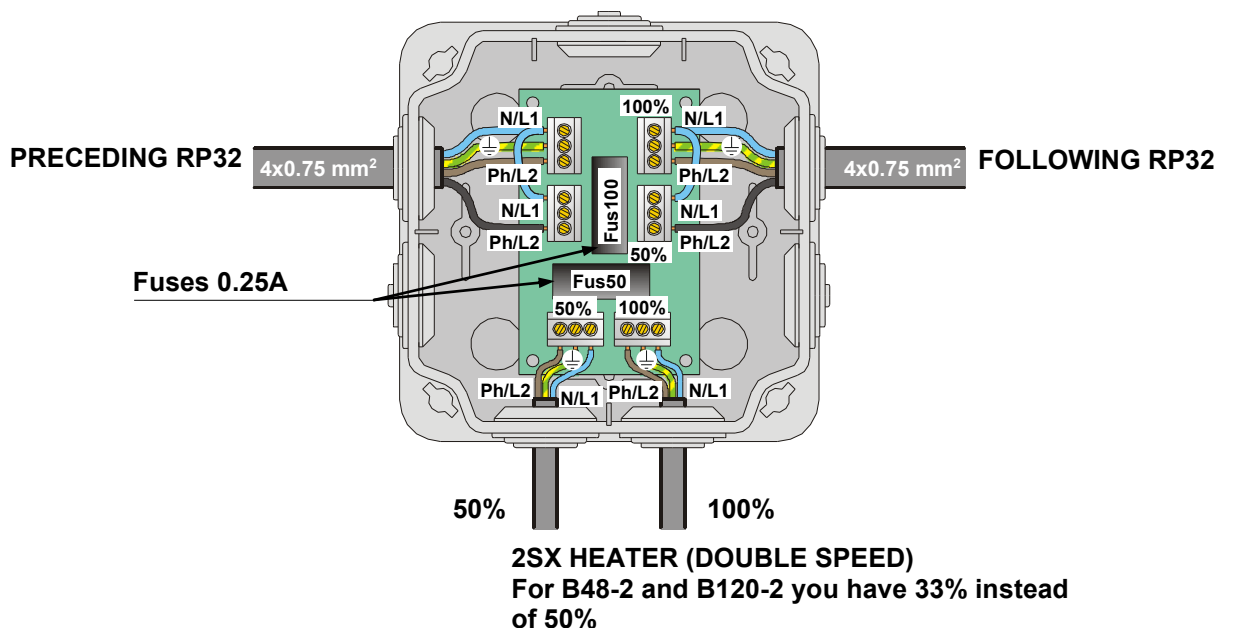
❑ Types of connection cable

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.
Control unit to RP32 (and RP32 to RP32)	4-core 0.75mm ² 85°C temperature rated PVC sheathed cable to BS6500 Table 9.
RP3 and RP32 to heater	Use the BA connector supplied with the heater green/yellow wire: EARTH blue wire: NEUTRAL brown wire: LIVE
Control unit to sensor	Use the coaxial cable supplied by SBM. (in 20m, 60m or 300m roles)

- ❑ Number of RP3 and RP32 units :
1 RP3 per type B6, B8, B10, B12, B16, B20, B24 and B32 heater.
1 RP32 per type B20-2, B24-2, B32-2, B48-2, B64-2 heater and B120-2.
- ❑ Fixing RP3 and RP32 units : see instructions supplied in box.
- ❑ Wire RP3's as shown in the diagram below.



- ❑ Wire RP32's as shown in the diagram below.



2.9 Start-up

- ☐ Test for gas soundness in accordance with British Gas Publication IM/5.
- ☐ Purge the system in accordance with British Gas Publication IM/2.
- ☐ First start-up

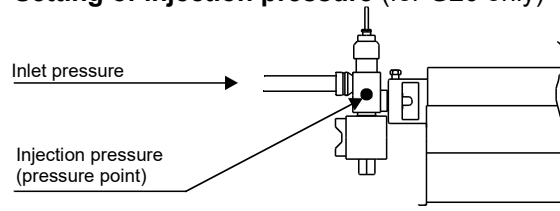
a) Preliminary checks:

- * calibration of control unit fuses.
- * differential switch operation ("TEST" button).

b) Initial settings:

- * main valve closed.
- * individual valves open.
- * differential switch set to "ON".
- * thermostat or programmable controller set to correct temperature setting.

c) **Setting of injection pressure** (for G20 only)



- * connect a pressure gauge to the pressure point.
- * adjust the injection pressure as per the values in the table pages 2 and 3 (acting on the individual gas governor)
- * **WARNING :** TIGHTEN THE SCREW INSIDE THE PRESSURE POINT AFTER DISCONNECTING THE PRESSURE GAUGE.

d) Ignition

* manual operation

- open the main gas valve.
- start the heater ignition cycle.
- if the flame is not lit after 45 seconds, start a second ignition cycle
- if the flame is still not lit or goes out, refer to chapter 5 (REPAIRS).

* automatic control

- open the general gas valve.
- check the settings (temperature, time).
- change module programming if required.
- run a full sensor heating and cooling cycle and check:
 - . ignition cycle length (45 seconds maximum).
 - . ignition and shut-down of heaters according to temperature settings.

3. RECEIPT OF INSTALLATION

TO BE PERFORMED BY THE FITTER IN THE PRESENCE OF THE CUSTOMER.

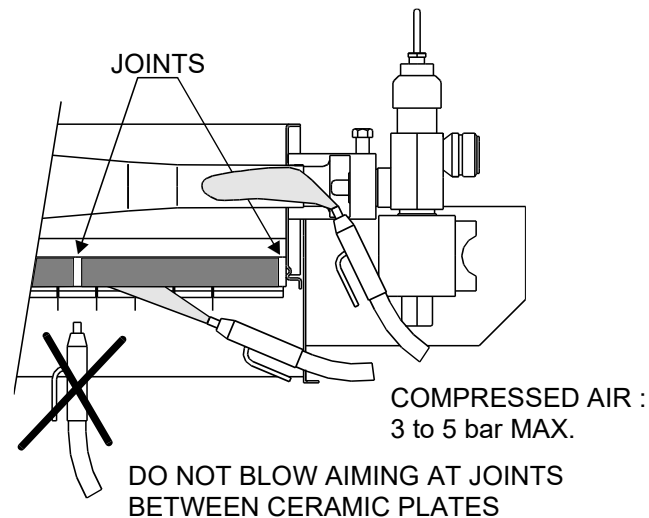
- ☐ Check that **the gas type and pressure comply with** the type of heater installed (see rating plate)
- ☐ Check that an **individual valve** is installed prior to each heater.
- ☐ Check that the "**SX USER GUIDE**" (Manual operation or Automatic control) is displayed next to the control unit, after being **stamped by the installer**.
- ☐ Provide the customer with **a copy of each SX USER INSTRUCTIONS** supplied in the product boxes.
- ☐ Indicate to the customer the **locations** of:
 - **valves.**
 - **electric switches.**
 - **control units.**
- ☐ **Explain** to the customer how all **control units operate**.
- ☐ Plan the **initial maintenance visit (1 year** after start-up).

4. MAINTENANCE

LIST OF OPERATIONS TO BE PERFORMED DURING THE ANNUAL MAINTENANCE VISIT.

- ☐ Removal of dust from heaters

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



- ☐ Check condition of ceramic plates (**visual** inspection).

- ☐ Check heater fixture.

- ☐ Check tightness of 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 operation of solenoid valves.

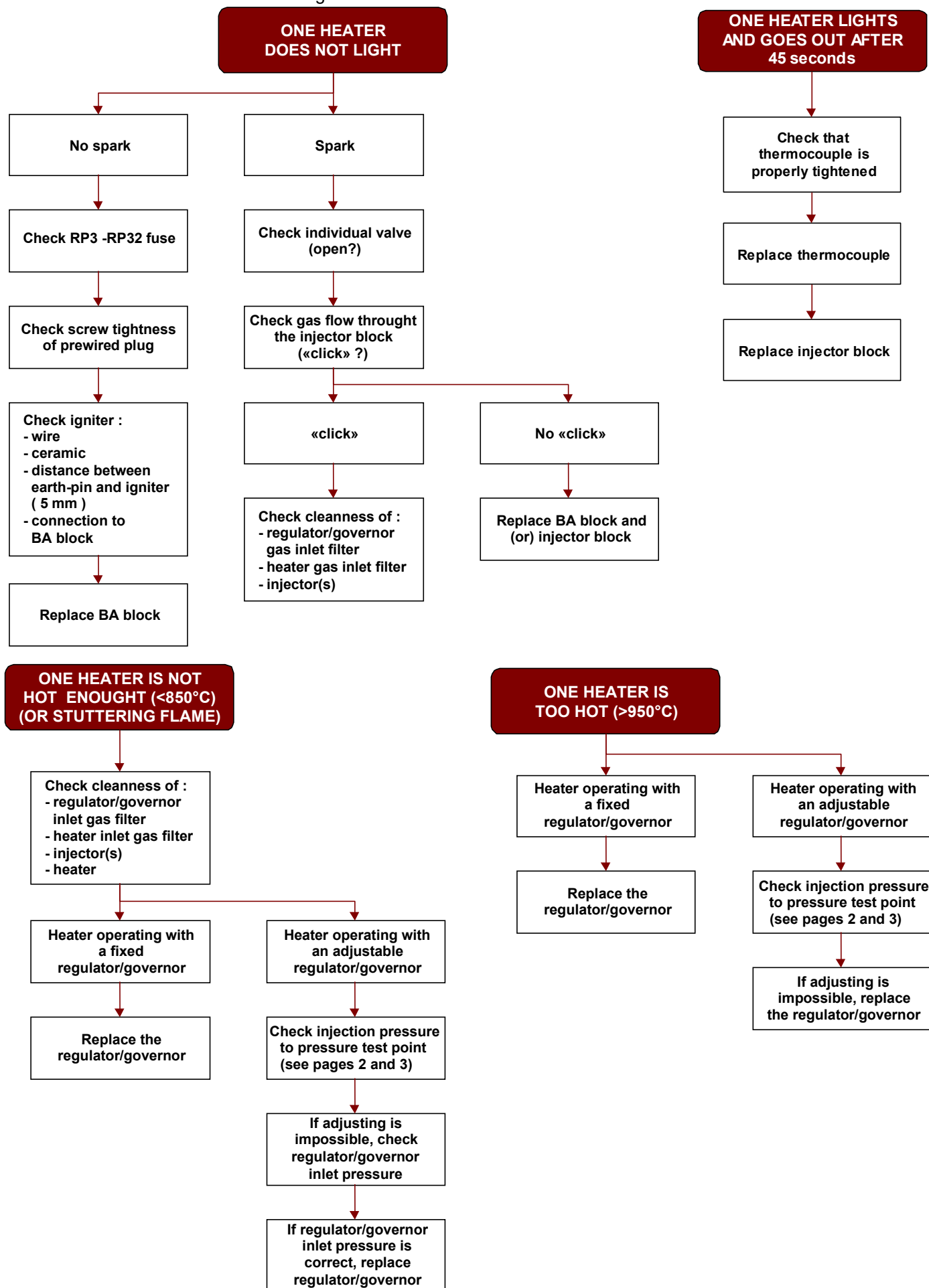
Check that all solenoid valves properly close (heaters switched off).

- ☐ Check controls.

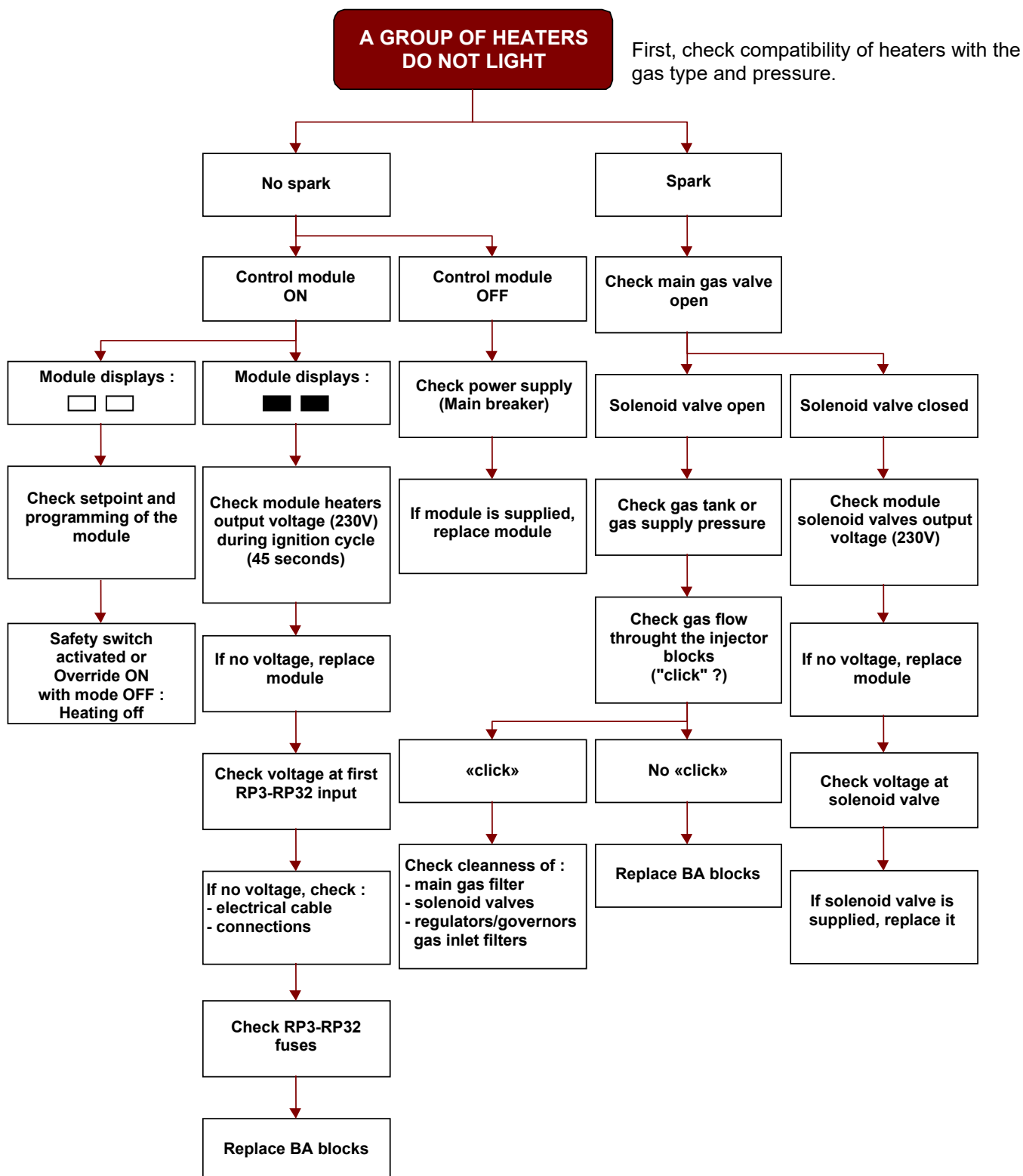
- ☐ Check all settings (do not forget anti-freeze setting).

5. REPAIRS

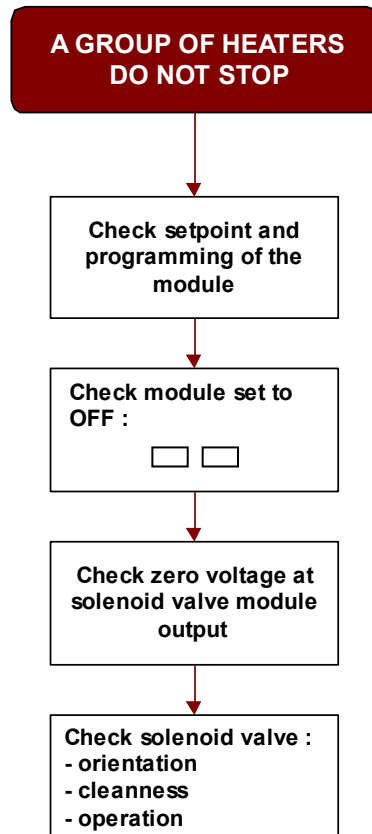
❑ Problems on a single heater.



- ❑ Problems on a group of heaters.



- ❑ Problems on a group of heaters (cont.).



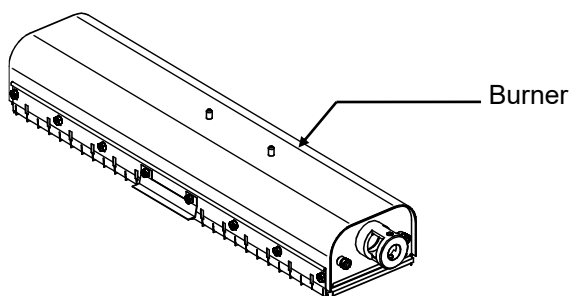
First, check that the temperature setting is lower than ambient temperature.

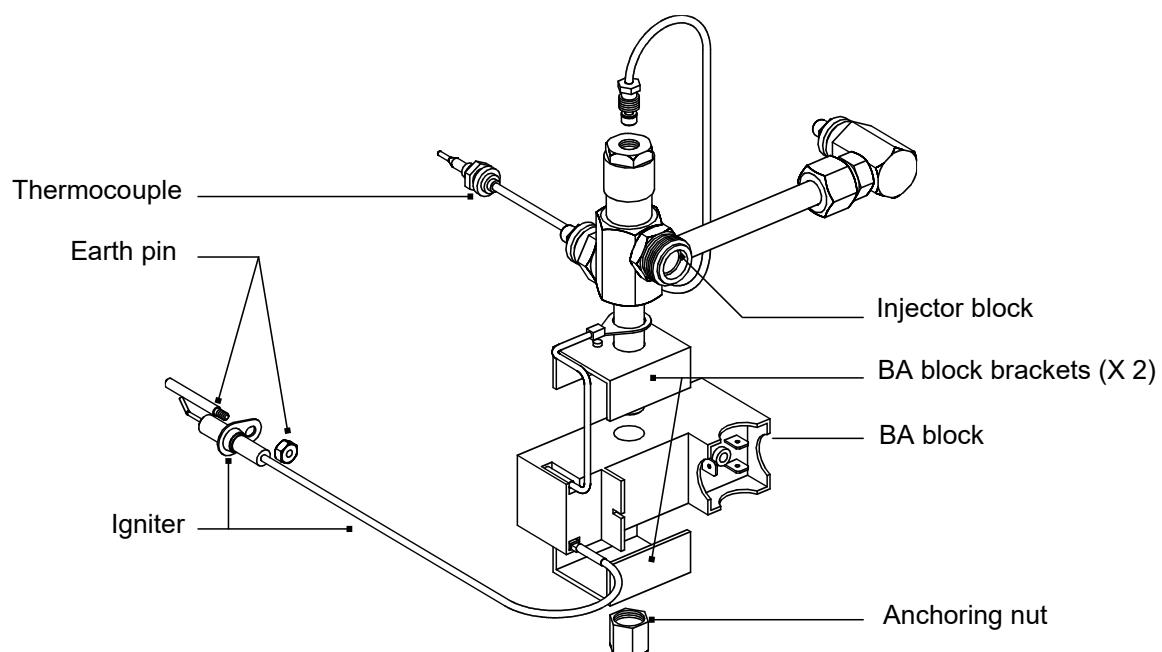
- ❑ SX heater spare parts.

WITH ALL SPARE PART ORDERS, 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.





6. CHANGING THE GAS USED

- ☐ Gas used with the SX heater range.

FAMILY	GAS	OPERATING PRESSURE
I ₂ H	G20 (Natural gas)	20 mbar
I ₃ P	G31 (Propane)	37 mbar

- ☐ For all changes in the gas used, contact your SBM agent.

7. COMMISSION REGULATION (EU) 2015/1188

Requirements for product information applicable to commercial local space heaters

Luminous heaters SX

Model identifier	B6 SX	B8 SX	B10 SX	B12 SX	B16 SX	B20 SX	B20 2SX	B24 SX	B24 2SX	B32 SX	B32 2SX	B48 2SX	B64 2SX	B12 0
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	58,0
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	52,2
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	66
Radiant factor														
Radiant factor at nominal heat output	0,64	0,64	0,63	0,62	0,62	0,64	0,64	0,64	0,64	0,65	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	0,65
Auxiliary electricity consumption														
At nominal heat input (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
At minimum heat input (kW)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In standby mode (kW)	0	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	No
Two stages	No	No	No	No	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Modulating	No	No	No	No	No	No	No	No	No	No	No	No	No	No
	Seasonnal efficiency													
Seasonnal space heating efficiency	86,0 %	86,0 %	85,5 %	85,0 %	85,0 %	86,0 %	88,5 %	86,0 %	88,5 %	86,5 %	89,0 %	89,0 %	89 %	89,0 %



DECLARATION UE DE CONFORMITE EU DECLARATION OF CONFORMITY

Le fabricant / the manufacturer : SBM International - 3 Cottages de la Norges - 21490 CLENAY – France déclare que les panneaux radiants lumineux gaz suivants /
Declares that the following luminous gas radiant heaters:

Certificat CE n°1312AP230:	B6SX, B8SX, B6M, B8M, B6, B8 KOMFORT, RI6, RI8
Certificat CE n° 1312AP231:	B10SX, B12SX, B10M, B12M, RI10, RI12, B10, B12 KOMFORT
Certificat CE n° 1312AP232:	B16SX, B20SX, B24SX, B32SX, B16 KOMFORT, B20 KOMFORT, B24 KOMFORT, B32 KOMFORT, B16M, RI 16, RI 20, RI 24, RI 32
Certificat CE n° 1312AP233:	B20-2 SX, B24-2 SX, B32-2 SX, B20-2 KOMFORT, B24-2 KOMFORT, B32-2 KOMFORT, RI 20-2, RI 24-2, RI 32-2
Certificat CE n° 1312AP249:	B48-2SX, B64-2SX, B128-2SX, B48-2 KOMFORT, B64-2 KOMFORT, B128-2 KOMFORT, RI 48-2, RI64-2, RI 128-2, B120-2 SX, RI 120-2
Certificat CE n° 1312CL5522:	XFR 16, XFR 20, XFR 20-2, XFR 24, XFR 24-2, XFR 32, XFR 32-2, XFR 48-2, XFR 60-2, XFR 64-2 XFR-I 16, XFR-I 20, XFR-I 20-2, XFR-I 24, XFR-I 24-2, XFR-I 32, XFR-I 32-2, XFR-I 48-2, XFR-I 60-2, XFR-I 64-2
Certificat CE n° 1312CM5615:	8 ZRS, 12ZRS, 16ZRS, chariot simple Brasilia (single cart Brasilia), chariot double Brasilia (Double cart Brasilia)
Certificat CE n° 1312 DN 6603:	212 XLA-T, 216 XLA-T, 212 XLA-I, 216 XLA-I
Certificat CE n° 1312CQ6090:	XD 8 (XD 8 D), XD 10 (XD 10 D), XD 12 (XD 12 D), XD 16 (XD 16 D) XDI 8 (XDI 8 D), XDI 10 (XDI 10 D), XDI 12 (XDI 12 D), XDI 16 (XDI 16 D)

Ont été fabriqués conformément aux exigences essentielles :

- du REGLEMENT (UE) 2016/426 « APPAREILS A GAZ »,
- de la norme « NF EN 419 :2019 : Appareils surélevés de chauffage à rayonnement lumineux au gaz à usage non domestique » et
- de la « DIRECTIVE basse tension 2014/35/UE »
- en suivant les process internes de fabrication et de contrôle certifiés par l'Organisme Notifié N°1312 CERTIGAZ (1 Rue du Général Leclerc, 92800 Puteaux, France).

Have been manufactured in conformity with essential requirements of:

- the "Gas appliances (EU) 2016/426 Regulation",
- the "European standard EN 419:2019 Gas-fired overhead luminous radiant heaters for non-domestic use" and
- the "Low voltage DIRECTIVE 2014/35/EU"
- by following internal manufacturing and control processes certified by the Notify Body N°1312 CERTIGAZ (1 Rue du Général Leclerc, 92800 Puteaux, France).

Signature :

Nom / Name : MIROY Frédéric

Product Manager

S.B.M.
3, Cottages de la Norges
21490 CLENAY
FRANCE

Date : 05/12/2024

