

XDI - XDI D HEATERS

INSTALLER INSTRUCTIONS

Nr. 05000372 / 11



***Double speed ceramic heaters
Stainless steel burner
Aluminium body
Electronic igniton and flame control
Built-in adjustable support for hanging bracket : 3 positions***

Manufacturer :
SBM
3 cottages de la Norge
21490 CLENAY
FRANCE
<http://www.sbm-international.net>

Agent :

CE 1312

SUMMARY

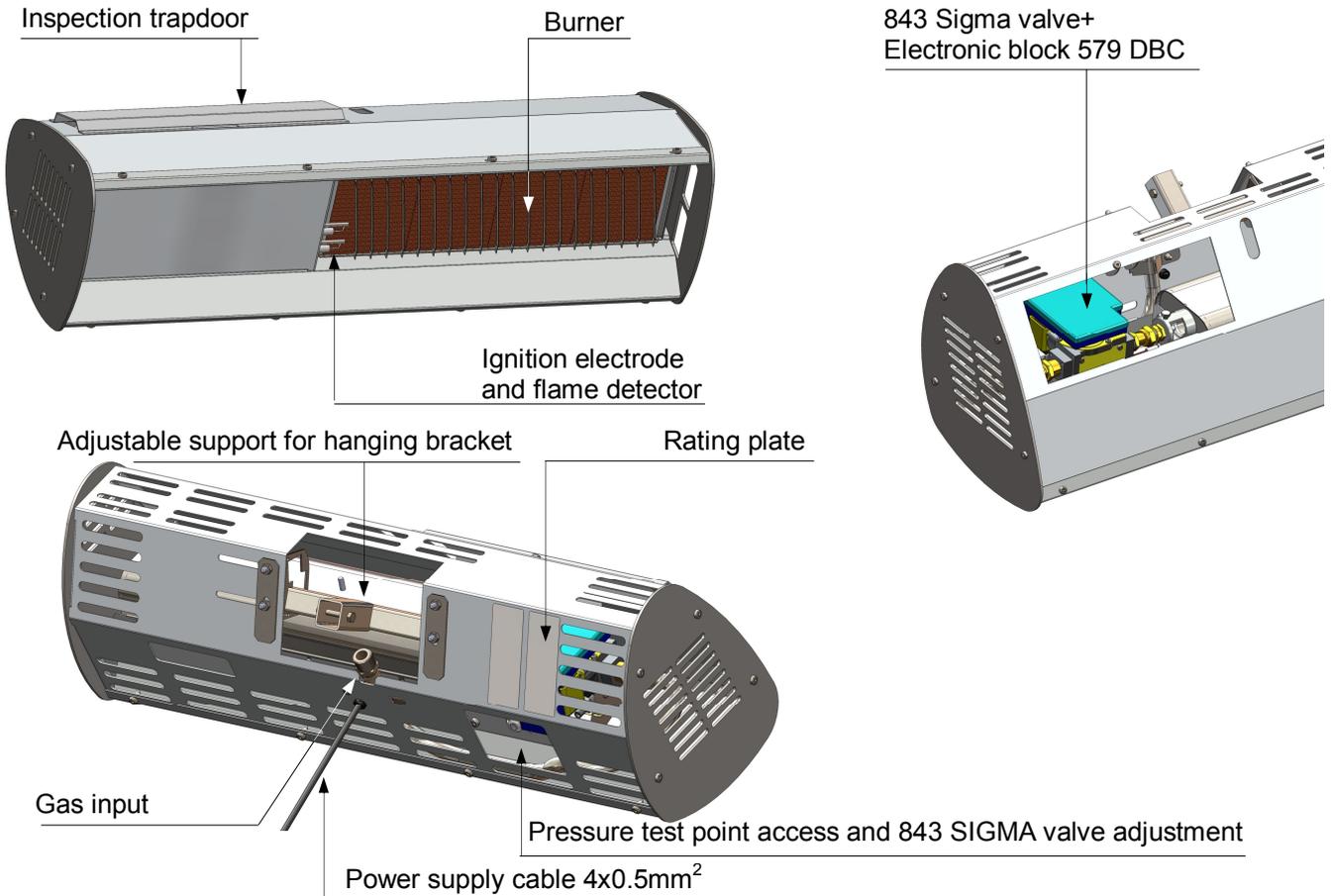
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GENERAL

- *In the process of continuous improvement, SBM products may be modified without notice*
- *The XDI are CE certified for non domestic use (indoor and outdoor).
XDI-D are CE certified for domestic use (ex: opened terrace heating) OUTDOOR ONLY.*

1. PRODUCT SPECIFICATION

1.1 Description



1.2 Technical specifications

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

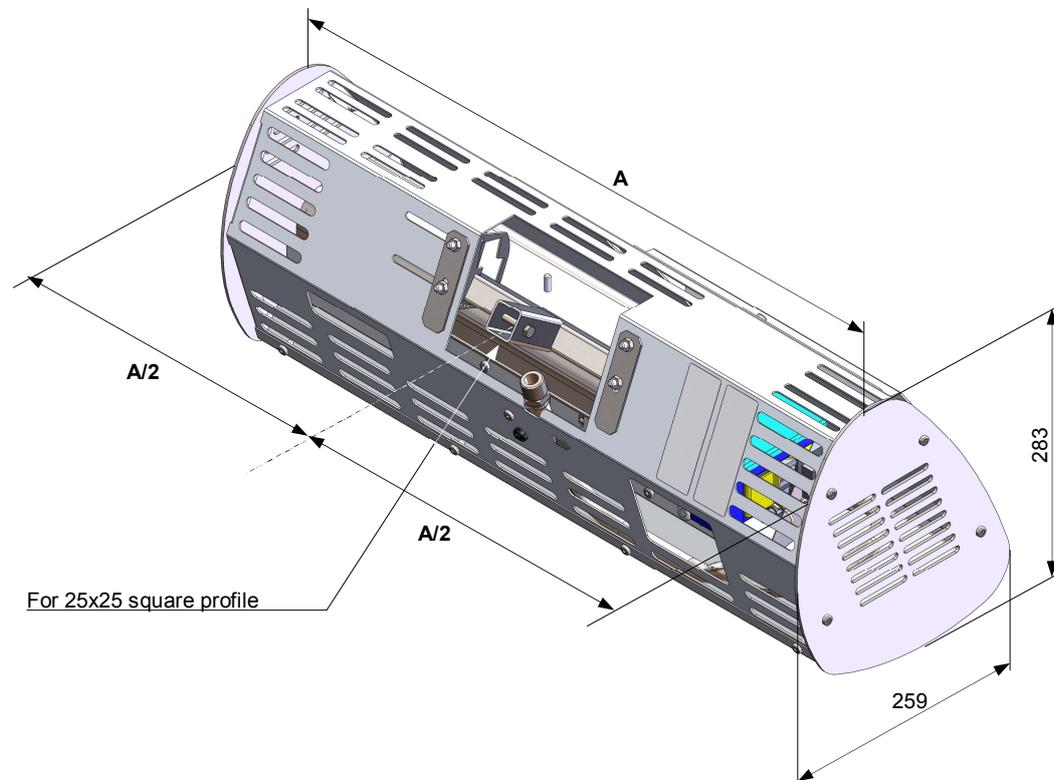
MODEL			XDI 8 XDI 8 D	XDI 10 XDI 10 D	XDI 12 XDI 12 D	XDI 16 XDI 16 D
P.I.N. €€			1312 CQ 6090			
Class NOx			4			
Weight	(kg)		5.75	6.25	7.00	8.25
Nominal heat input	Qn (Hi)	(kW)	3.30	3.80	5.10	6.80
Gross calorific value	Qn (Hs)	(kW)	3.65	4.25	5.65	7.55
GAS						
Nominal inlet pressure	(mbar)		20			
Minimal inlet pressure	(mbar)		17			
Maximal inlet pressure	(mbar)		25			
Maximal injection pres. (SIGMA valve output)	(mbar)		11	12	15	16
Minimal injection pres. (SIGMA valve output)	(mbar)		7	7	7	7
Volumetric flow rate	(m ³ /h)		0.350	0.400	0.540	0.715
Ø orifice (injector)	(1/100 mm)		165	170	180	205
Ø primary orifice (restrictor)	(1/100 mm)		-	-	-	-
Gas connection			G1/2" (ISO 228-1)			
ELECTRICITY						
Power supply			230V (+10% -15%) – 50Hz Neutral mandatory			
Consumption	(VA)		19			
Ignition cycle length			30 seconds maxi			
VENTILATION						
Combustion air	(m ³ /h)		3.40	3.90	5.30	7.00
Required air renewal	(m ³ /h)		33	38	51	68

GAS : G31 (Propane) - Category : I₃P GB/IE

MODEL			XDI 8 XDI 8 D	XDI 10 XDI 10 D	XDI 12 XDI 12 D	XDI 16 XDI 16 D
P.I.N. C€			1312 CQ 6090			
Class NOx			4			
Weight	(kg)		5.75	6.25	7.00	8.25
Nominal heat input	Qn (Hi)	(kW)	3.30	3.80	5.10	6.80
Gross calorific value	Qn (Hs)	(kW)	3.65	4.25	5.65	7.55
GAS						
Nominal inlet pressure		(mbar)	37			
Maximal injection pres. (SIGMA valve output)		(mbar)	36 : blocked regulator (see page 20)			
Minimal injection pres. (SIGMA valve output)		(mbar)	12	12	12	12
Mass flow rate		(kg/h)	0.260	0.300	0.400	0.530
Ø orifice (injector)		(1/100 mm)	105	110	125	135
Ø primary orifice (restrictor)		(1/100 mm)	140	130	180	-
Gas connection			G1/2" (ISO 228-1)			
ELECTRICITY						
Power supply			230V (+10% -15%) – 50Hz Neutral mandatory			
Consumption		(VA)	19			
Ignition cycle length			30 seconds maxi			
VENTILATION						
Combustion air		(m ³ /h)	3.10	3.60	4.80	6.30
Required air renewal		(m ³ /h)	33	38	51	68

1.3 Heaters dimensions

XDI 8 (D), XDI 10 (D), XDI 12 (D) and XDI 16 (D)



MODEL	XDI 8 (D)	XDI 10 (D)	XDI 12 (D)	XDI 16 (D)
A (mm)	576	625	702	826

2. INSTALLATION

**THESE HEATERS MUST BE INSTALLED IN ACCORDANCE WITH APPLICABLE REGULATIONS AND IN WELL VENTILATED PREMISES.
THE XDI-D HEATERS MUST BE INSTALLED ONLY IN A TERRACE (OUTSIDE) AND THE TERRACE MUST BE SUFFICIENTLY OPEN.**

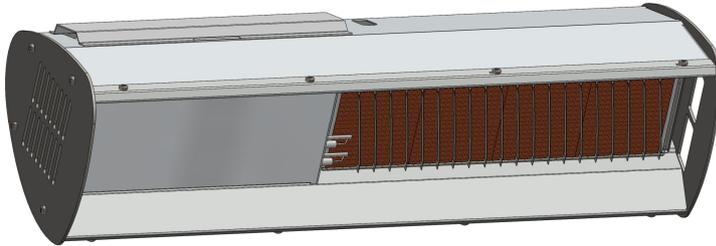
2.1 Rules and Regulations

- SBM ceramic heaters are **CE** approved.
- The premises must be ventilated in accordance with the European standard EN 13410.
- Local and European Regulations, Standards and Laws apply, in particular the ones related to :
 - Building
 - Heating
 - Gas
 - Health and Safety
 - Hygiene

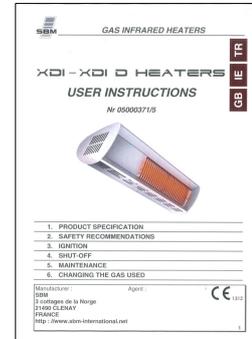
- For domestic use, only OUTDOOR use and opened terrace.*

2.2 Unpacking and checking of equipment

- Check the type and quantities against your order.
- Check packing and equipment condition.
In case of damage, file a complaint with the carrier.
- Check gas type and pressure.
- Check box content.

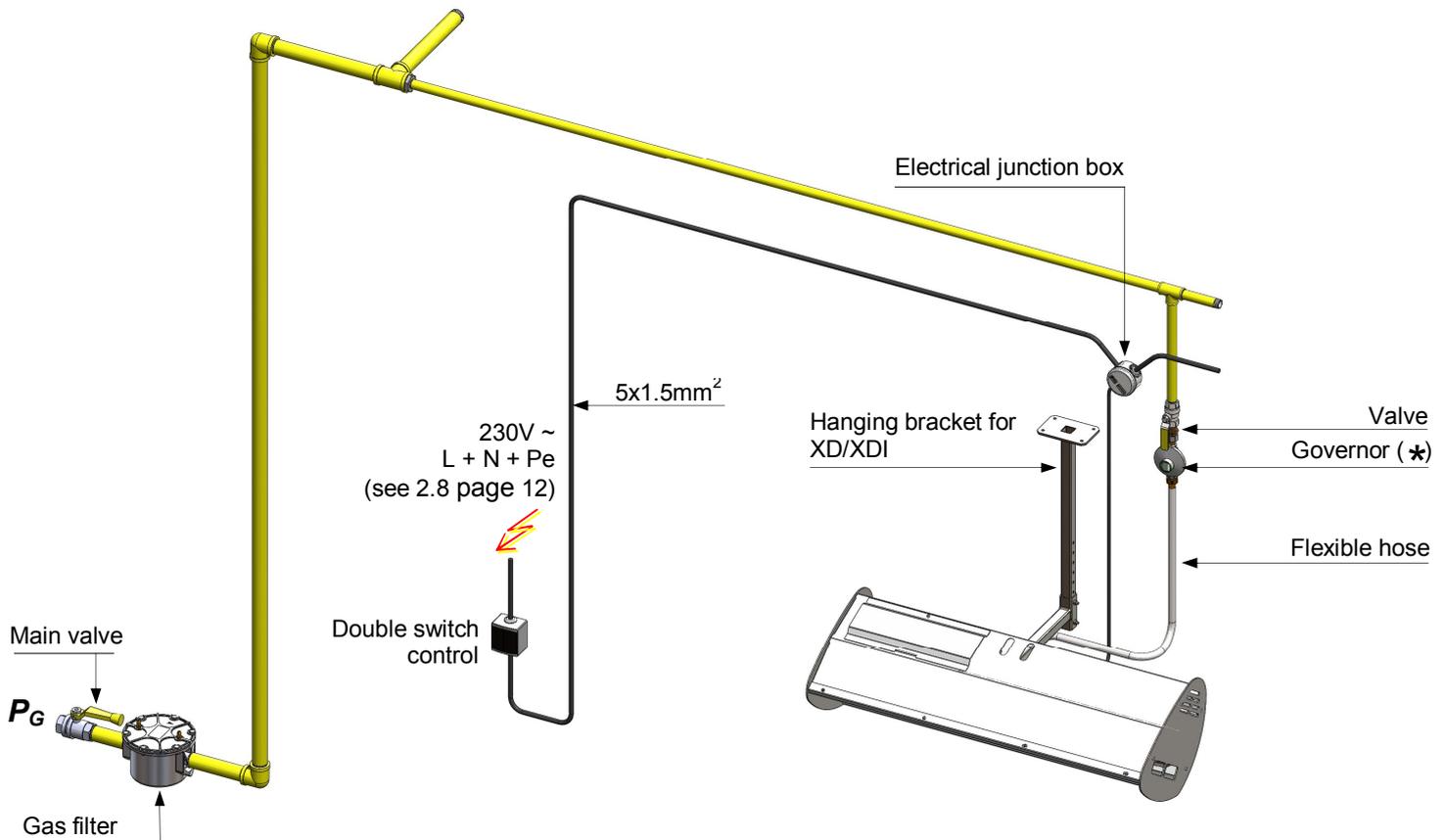


XDI heater



XDI GB/IE/TR User instructions

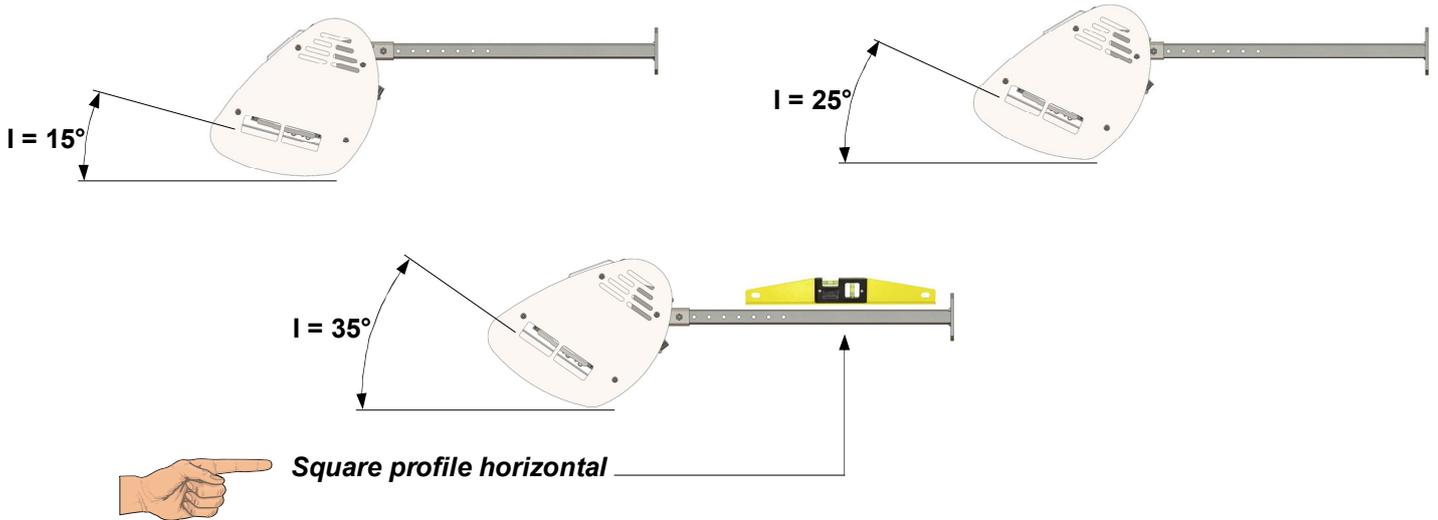
2.3 Diagram of a standard installation (control of several heaters)



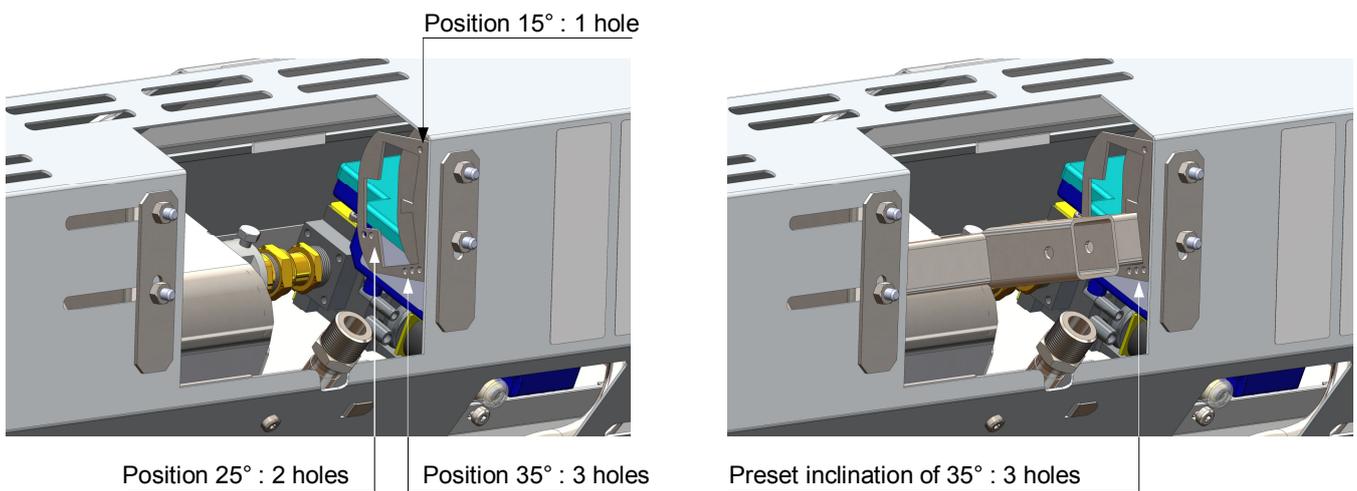
* Use appropriate gas governor if P_G is greater than the maximal inlet pressure (G20) or than the nominal pressure (G31) of the heaters (see 1.2)

2.4 Inclination of heaters

- Inclination "I" = **at least 15°** (check SBM survey)

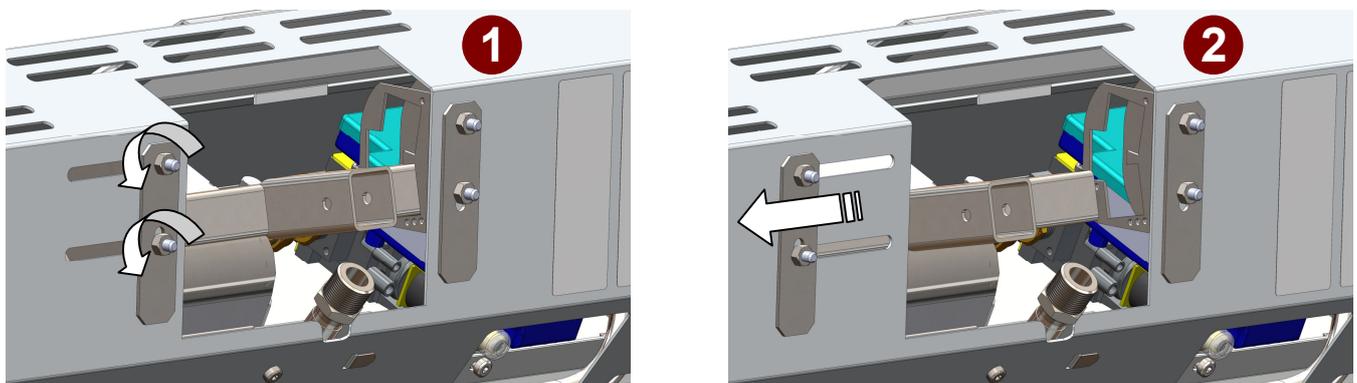


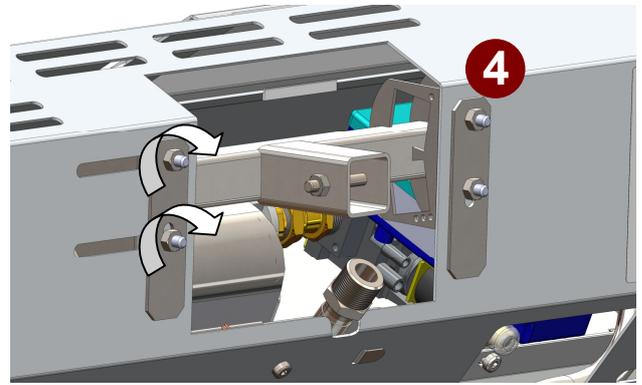
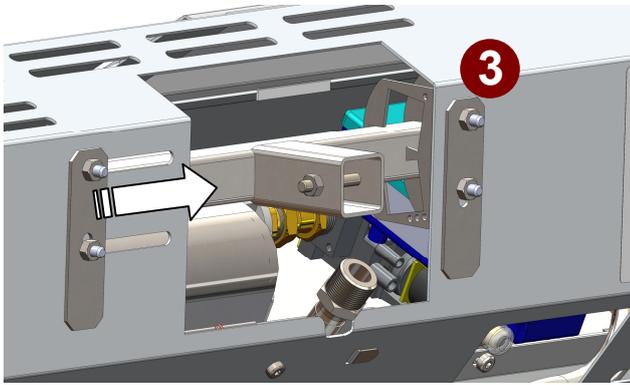
- The support allows a fixed heater inclination of 15°, 25° or 35° from the horizontal according to the SBM survey.
The inclination is preset to 35°.



- Changing the inclination

 **To be done before fixing the heater on its hanging bracket.**





2.5 Fixing of heaters

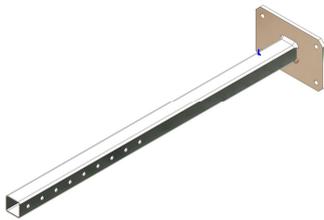
- Fixing heights

MODEL	Indicative comfort heights (m) Indoor use (*)	Indicative comfort heights (m) Outdoor use (*)
XDI 8 (D)	3.60	2.20
XDI 10 (D)	3.80	2.40
XDI 12 (D)	4.10	2.80
XDI 16 (D)	4.40	3.20

(*) : Indicative comfort heights based on 35° inclination, to be confirmed by specific SBM survey.

- Using of the HANGING BRACKET FOR XD/XDI (supplied by SBM) : see instructions 05000396.

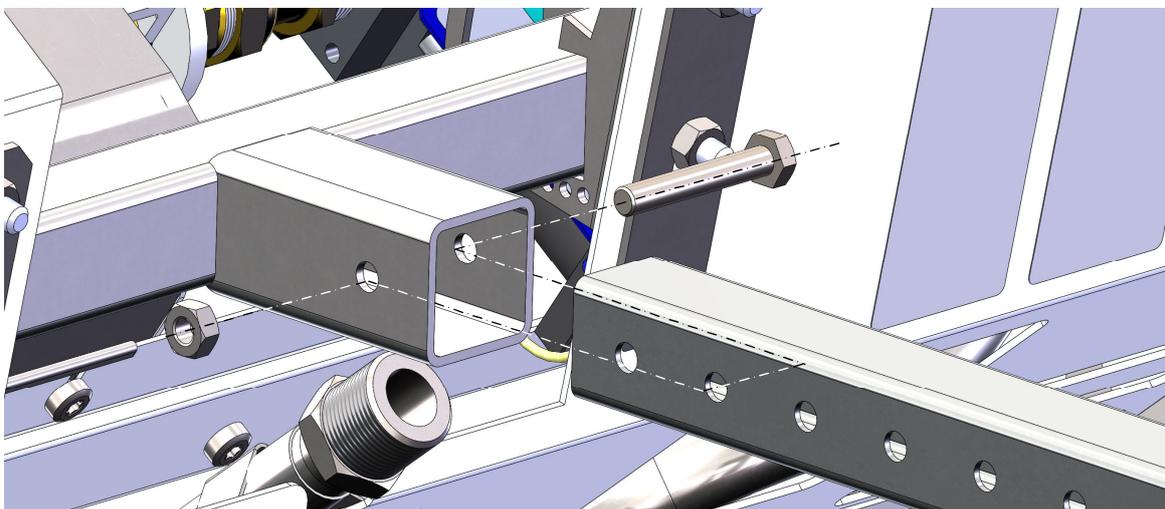
Wall mounting



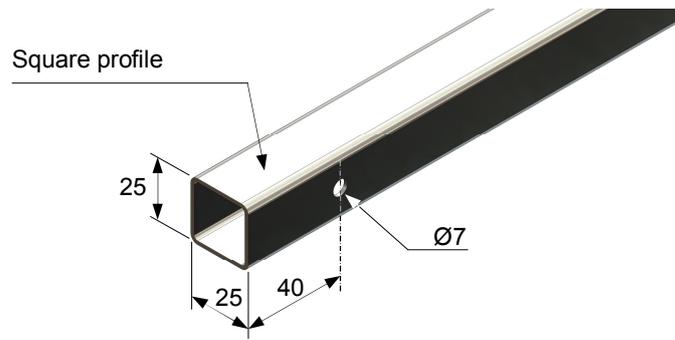
Ceiling mounting



In both cases, fix the heater to the hanging bracket :

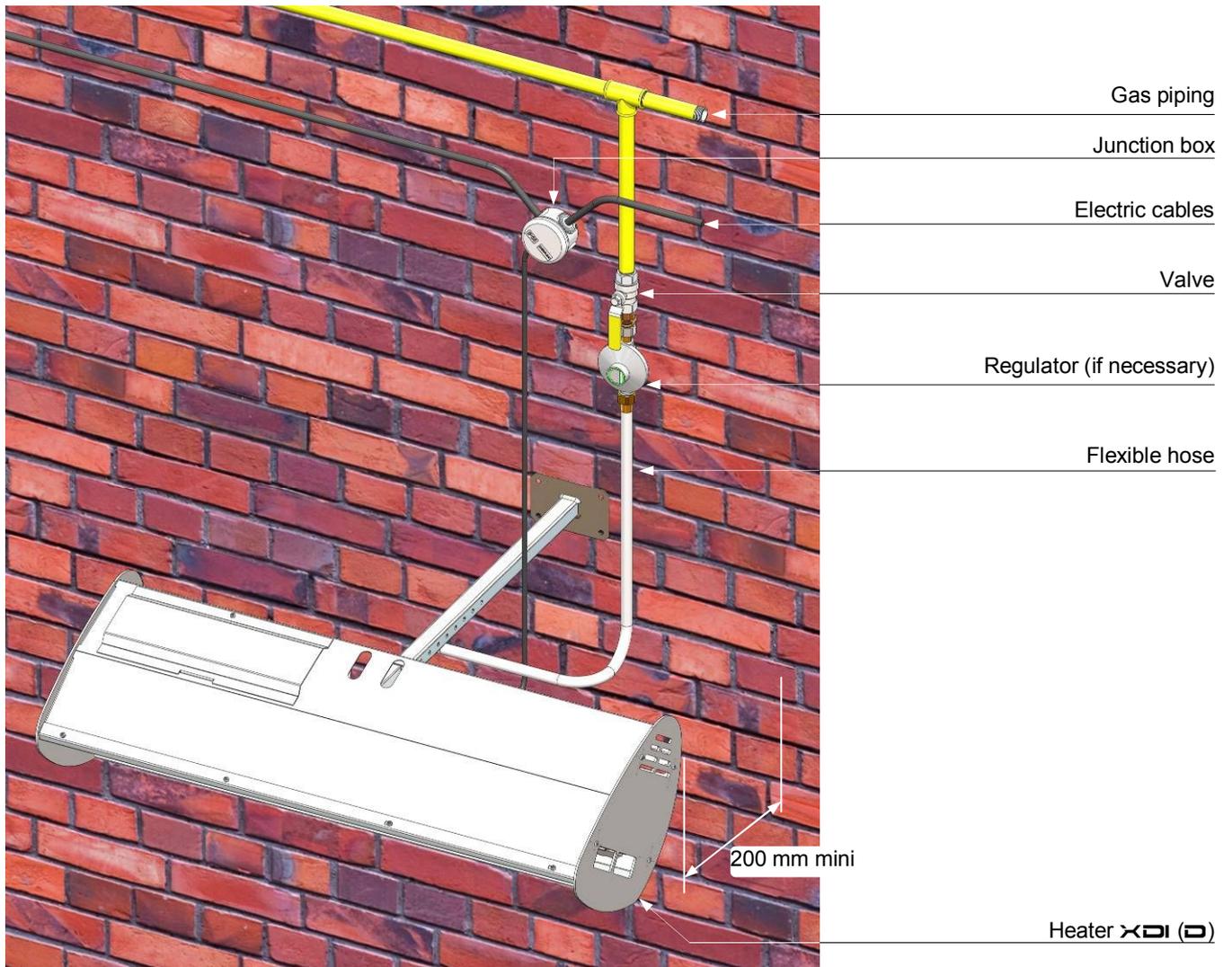


- ❑ Hanging bracket supplied by installer.



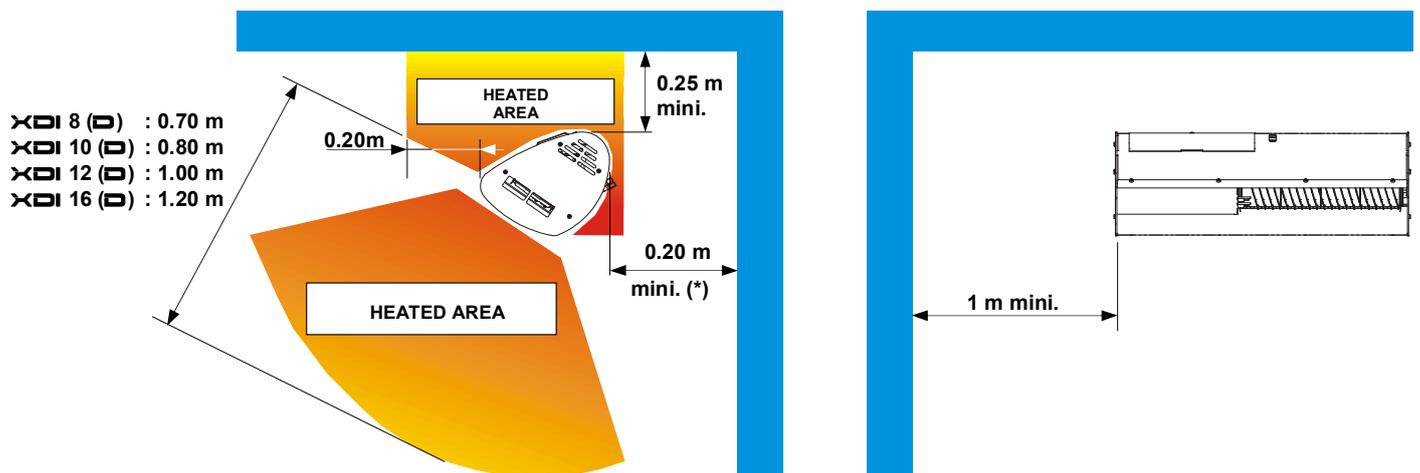
Fixing the heater to the hanging bracket : see page 8.

- ❑ Example :



**Gas piping and accessories, electrical equipment and cables must be located behind the heater.
Do not place them above the heater ! (see 2.6)**

2.6 Minimum safety clearances



Do not locate in heated areas, inflammable materials ($\theta_{max} = 70^{\circ}\text{C}$), gas piping and electrical wiring.



Where safety clearances cannot be respected, heat-protection must be provided above the heaters.

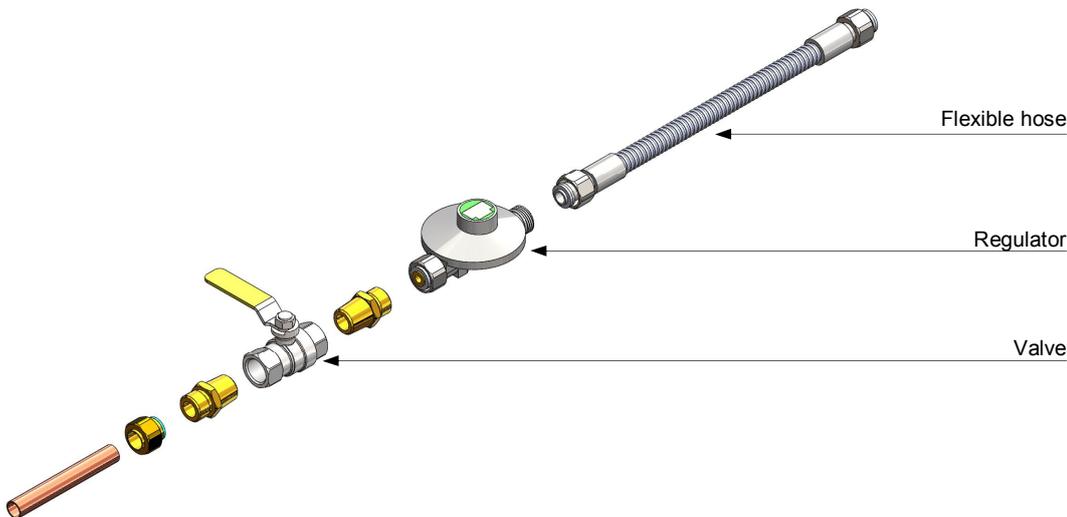
2.7 Gas connection

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

- Gas supply piping must not apply any stress on the 843 SIGMA valve (use preferably a metallic hose)
- MEDIUM PRESSURE** gas supply

Gas supply pressure P_G greater than heater nominal inlet pressure (see tables pages 3 and 4).

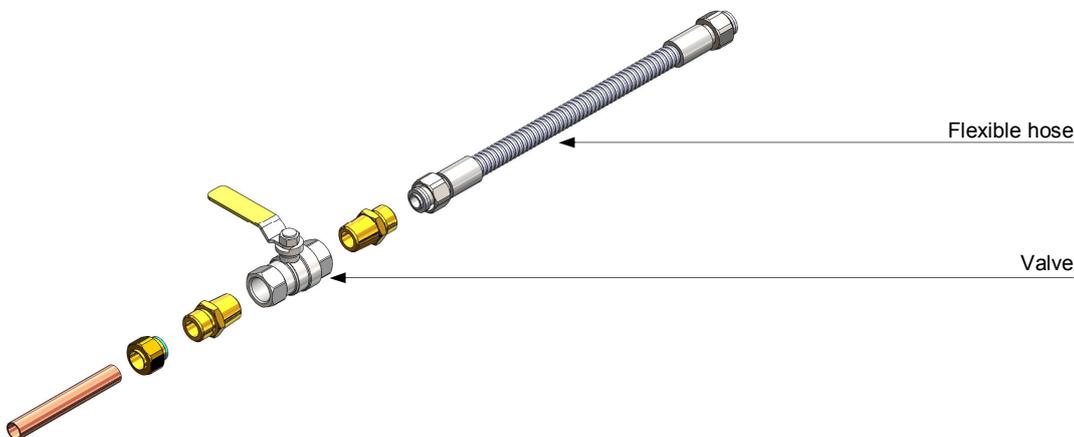
GAS	GAS SUPPLY PRESSURE
G20	200 mbar to 1.5 bar maxi
G31	200 mbar to 1.5 bar maxi



- LOW PRESSURE** gas supply

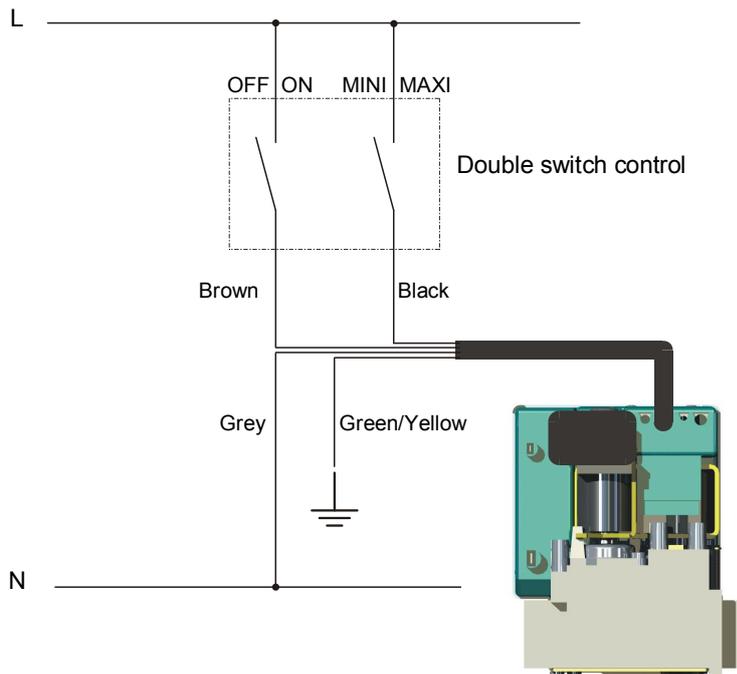
Gas supply pressure P_G range

GAS	GAS SUPPLY PRESSURE
G20	17 => 60 mbar
G31	37 mbar



2.8 Electrical connections

□ General diagram



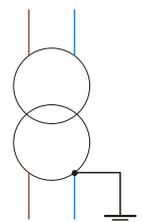
- Control :
1 switch ON / OFF (Ignition / Stop)
1 switch MAXI / MINI (Heating level)

MANUAL DOUBLE SPEED CONTROL



- Electrical connections must comply with I.E.E. Regulations.
- **No tension, even momentary between NEUTRAL conductor and GROUNDED CONDUCTOR**
In case of installation without Neutral (or neutral of bad quality), use an isolation transformer in order to create an artificial neutral. For that, connect one outlet socket to the ground.
- All heaters must be **GROUNDED**.
- Connection cables

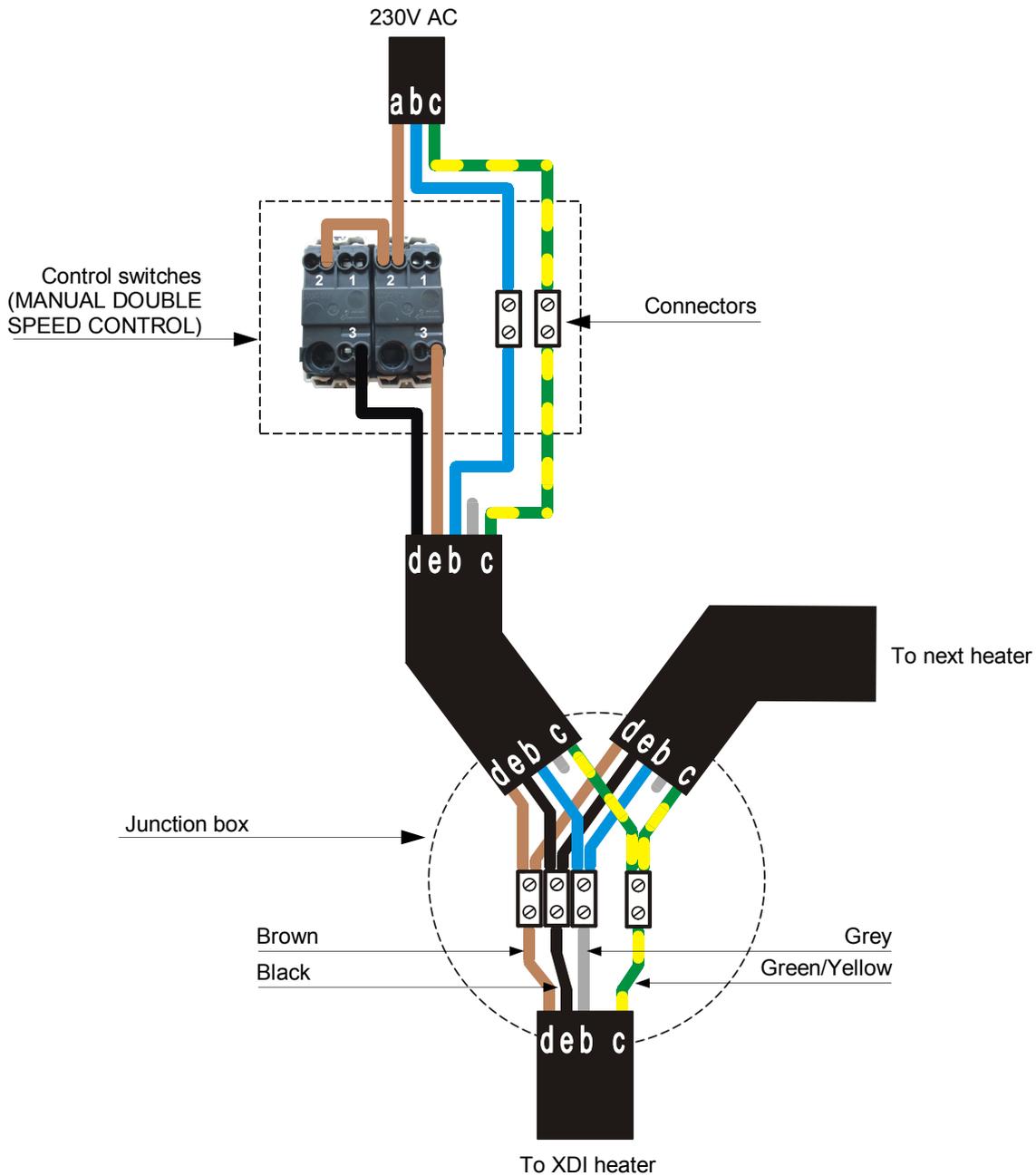
230V AC



230V AC
L + N + Pe
To control unit

CONNECTION	CABLES
Control switches to junction box (and between junction boxes)	5-core 0.75mm ² 85°C temperature rated PVC sheathed cable to BS6500 Table 9.
Junction box to heater	Use the connector supplied with the heater. Green/Yellow wire : EARTH / GROUND Grey wire : NEUTRAL Brown wire : LIVE "ON/OFF" Black wire : LIVE "MINI/MAXI"

- Connect switches and junction boxes according diagram below.



OPERATING BOARD

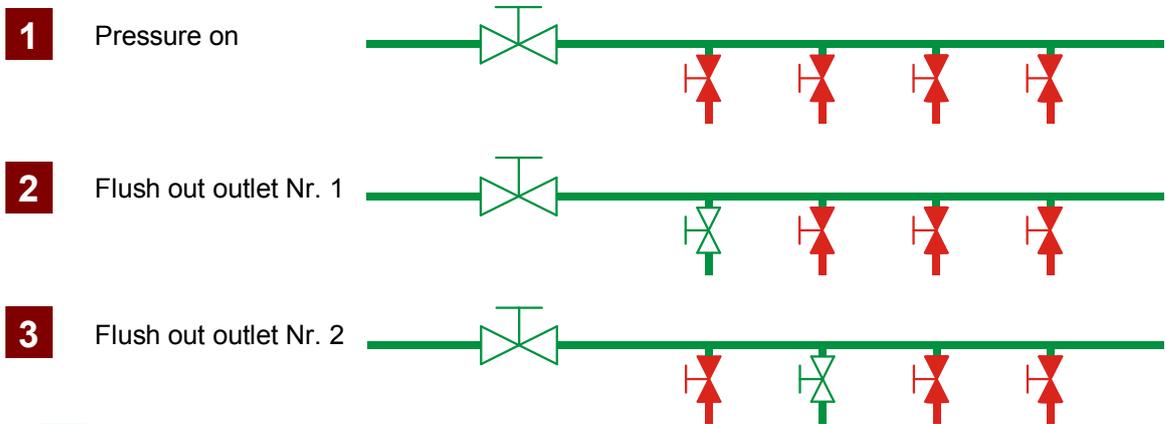
Voltage between d and b		Voltage between e and b		Heater
230 V	+	230V	=	ON (maxi)
230 V	+	0V	=	ON (mini)
0 V	+	0V	=	OFF
0 V	+	230V	=	OFF

2.9 Start Up

□ Clean out

Objective : flush out impurities in the gas piping

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

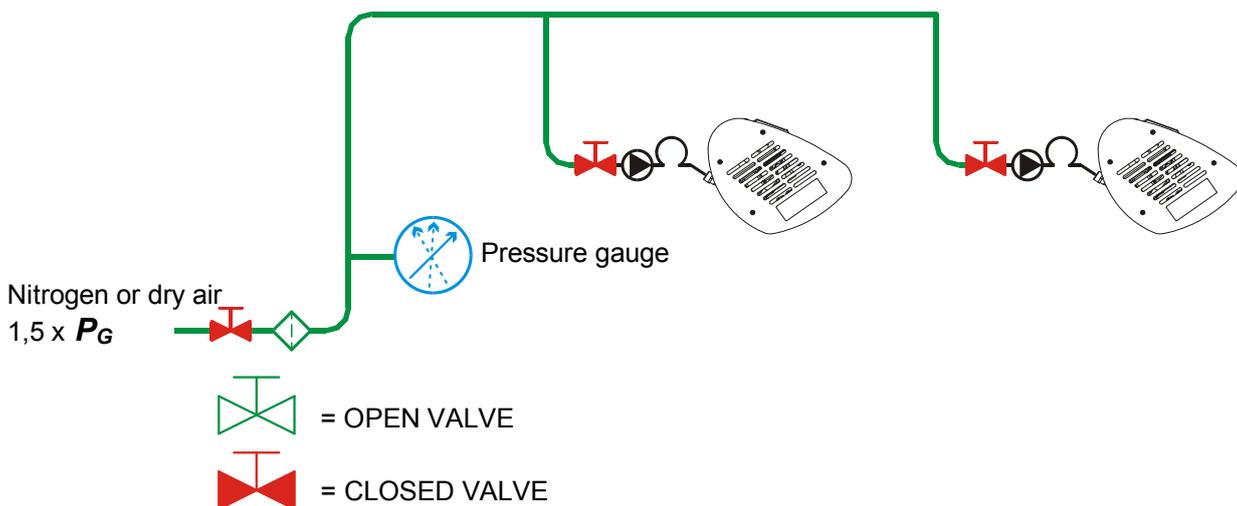


 = OPEN VALVE

 = CLOSED VALVE

□ Gas-tightness test :

- Nitrogen or dry air at 1.5 times more pressure than gas operating pressure P_G
- Turn off the nitrogen or dry air supply and wait 15 minutes.
- Check the pressure gauge after 2 hours (must stay fixed).
- If not, detect leaks with a foaming product, fix them and repeat the operation



 **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"
- * speed switch on the "MAXI" position.

c) Ignition

- Open the main gas valve
- Put the ignition switch on "I / ON"
- Check the operating cycle :
 - . Ignition with a set of sparks
 - . If the heater does not lit after 30 seconds, then it goes to the 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
- Put, if required, the speed switch on "MINI" position.
(wait 5 minutes heating on "MAXI" before to put the "MINI" position).

d) Tightness of heater connection

- * for each heater, check gas tightness with a foaming product, from the output of the individual valve to the injector

e) Close the inspection trapdoor



3. RECEIPT OF INSTALLATION

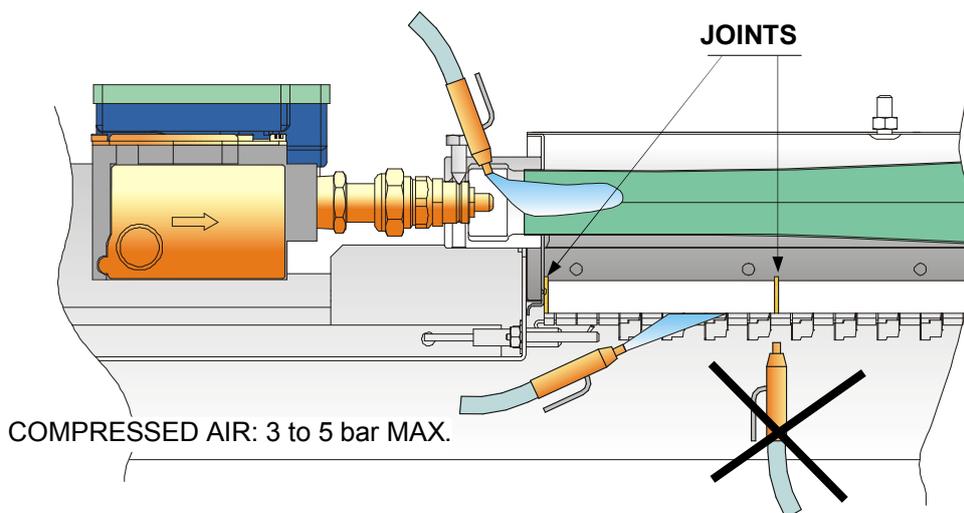
- To be performed by the installer in the presence of the customer.
- Schedule the **initial maintenance visit (1 year after start-up)**.

4. MAINTENANCE

ANNUAL MAINTENANCE VISIT

- Dust Removal

- On site, after opening the inspection trapdoor, heaters off and cold.



DO NOT AIM AT JOINTS BETWEEN CERAMIC PLATES
(risk of damaging the burner).

- Check condition of ceramic plates (**visual inspection**).
- Check tightness of gas accessories.
- Check heater operation. Switch on all heaters, check ignition and combustion.

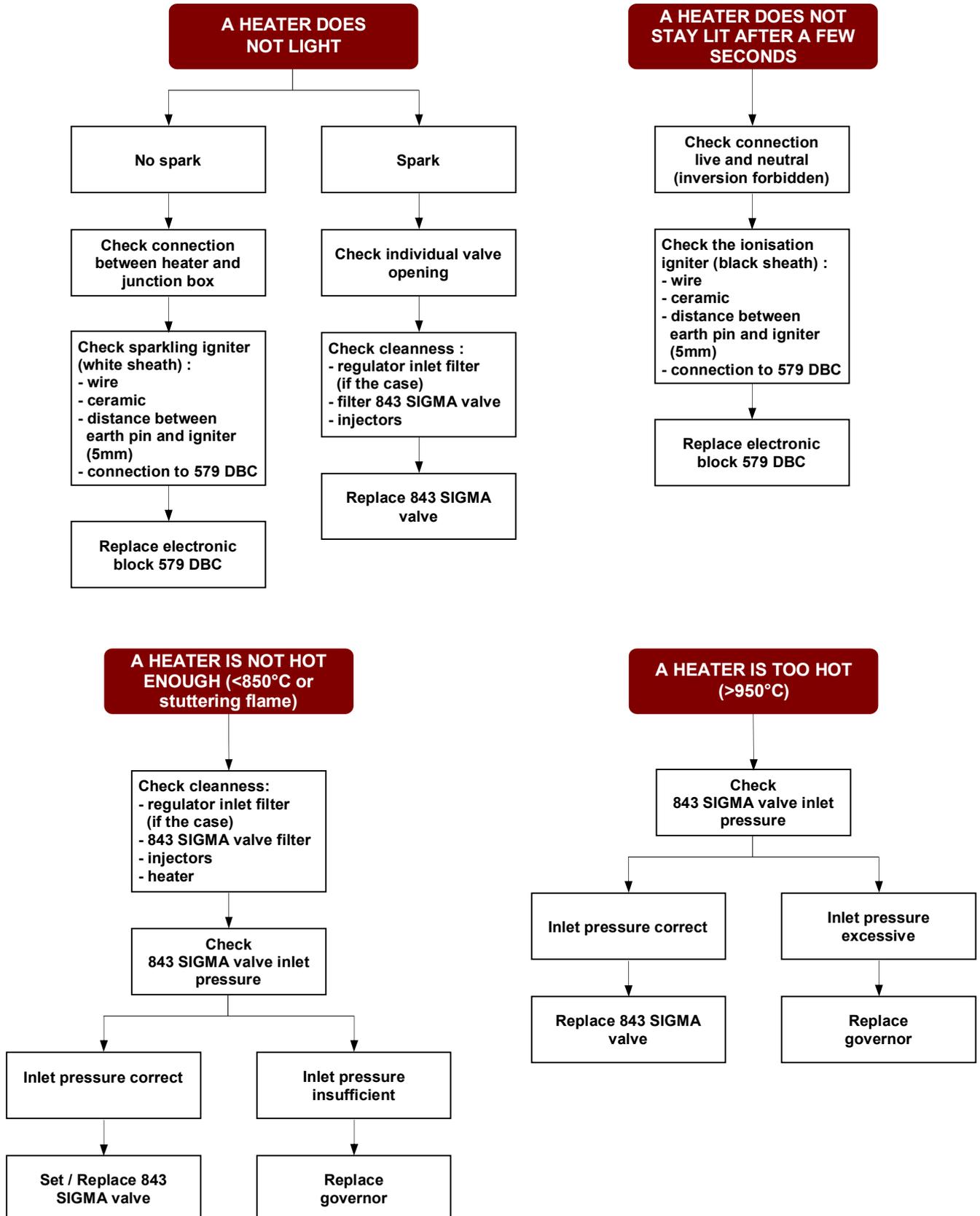
5. REPAIRS

- ❑ Problem on a single heater.



Always light the heaters on the "MAXI" speed.

Do not put the speed "MINI" before 5 minutes heating on the "MAXI" speed.

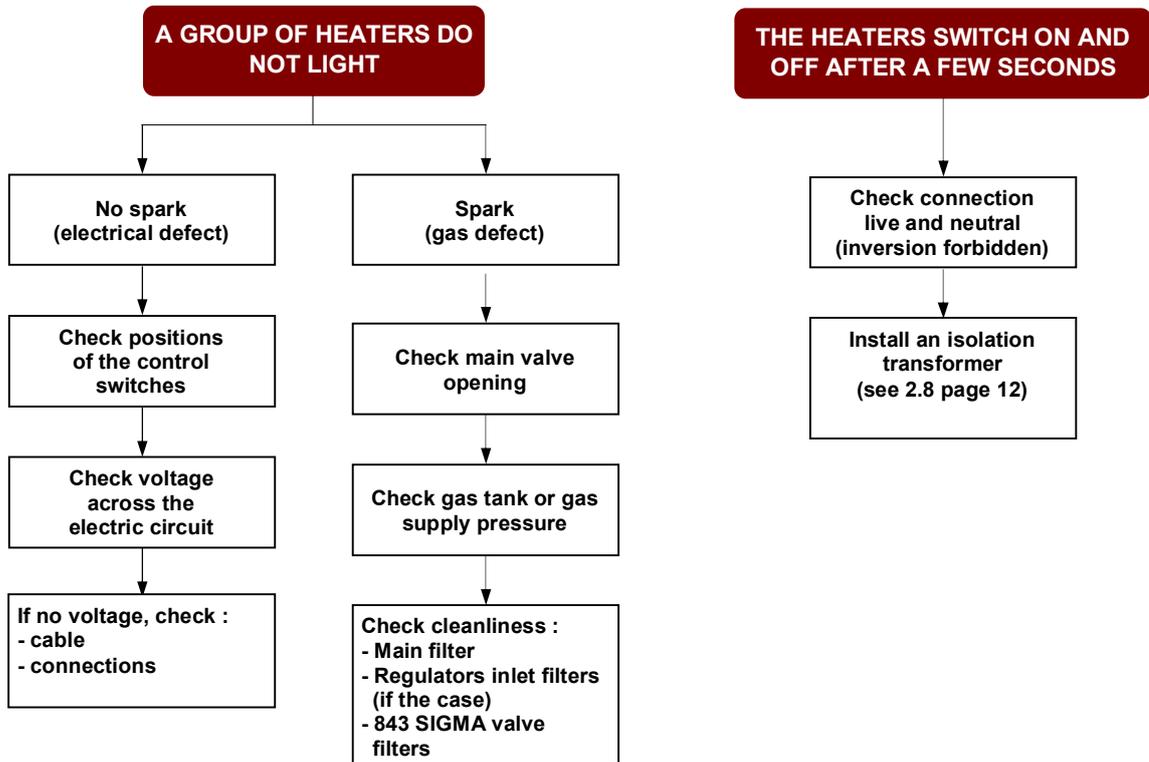


- ❑ Problem on a group of heaters



Light the heaters on the "MAXI" and wait 5 min.

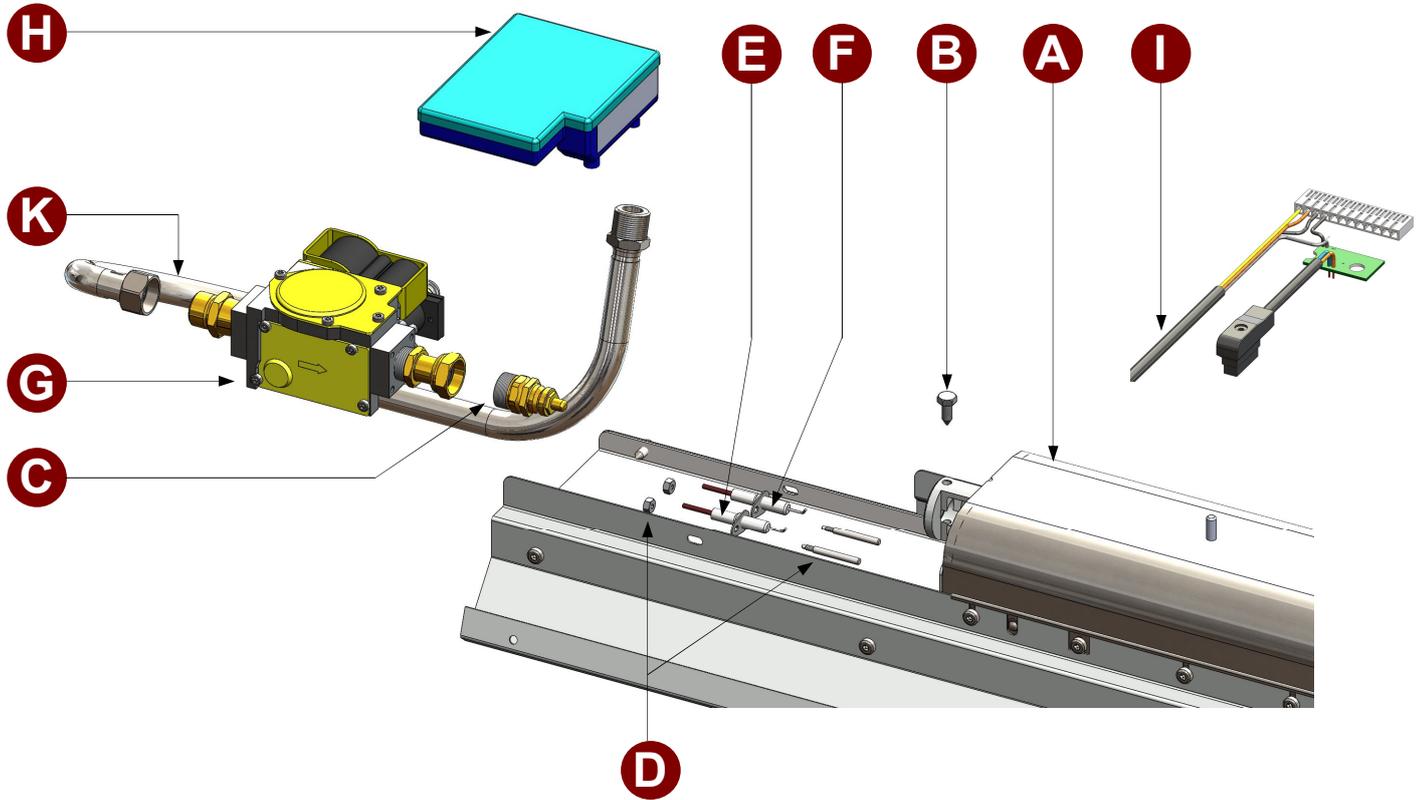
First, check compatibility of heaters with the gas type and pressure.



☐ XDI (D) heaters spare parts.

WITH ALL SPARE PARTS ORDERS, PLEASE INDICATE (see rating plate) :

- Type / serial number of the heater
- Gas type
- Operating pressure



REP.	SPARE PARTS	
A	BR 8 XD/XDI BR 10 XD/XDI BR 12 XD/XDI BR 16 XD/XDI	(burner with reflector for XDI 8 (D)) (burner with reflector for XDI 10 (D)) (burner with reflector for XDI 12 (D)) (burner with reflector for XDI 16 (D))
B	10 LOCKING SCREW 6X100/16	(supplied by 10)
C	BLOCK U-0-XXX-XXX-00-A-12G	(supplied with its injectors mounted)
D	EARTH PIN L3-NUT	
E	IGNITER 300 CLIP 4.8	(flame detector)
F	IGNITER 250 CLIP 2.8x0.5	(ignition electrode)
G	VALVE 843 SIGMA - FITTINGS	(supplied with 2 fittings mounted)
H	BLOCK 579 DBC	
I	XDI CONNECTOR 1.6M / 5 1/4'	
K	XD/XDI BUILT-IN FLEXIBLE HOSE	

6. GAS CONVERSION (by installer)

- Gas and pressures

FAMILY	GAS	OPERATING PRESSURE
I ₂ H	G20	20 mbar
I ₃ P	G31	37 mbar

- Principle

Replace the BLOCK U-0-XXX-XXX-00-A-12G (see page 19)
Set the VALVE 843 SIGMA.

SBM gas conversion kit :

- 1 BLOCK U-0-XXX-XXX-00-A-12G complete with orifices
- a gas conversion label.

For all order specify :

- type / serial number
- gas type
- operating pressure

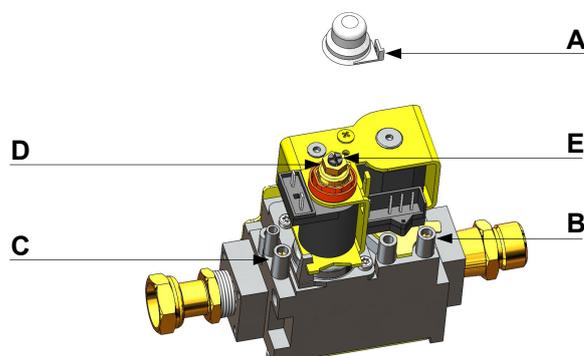
- Procedure :

- Replace BLOCK U-0-XXX-XXX-00-A-12G.
- Light the heater on the "MAXI" position.
- Remove the protection cap **A**.
- Check the inlet pressure of the heater at the pressure control socket **B**.
(see tables pages 3 and 4 for inlet minimal, nominal and maximal pressures)
- Check the maximal injecting pressure at pressure control socket **C**.
- Adjust this injecting pressure by means of setting nut **D** (spanner 10 mm)
(see tables pages 3 and 4 for maxi and mini injecting pressures)
When the regulator needs to be blocked, tight the nut **D** to maximum but without excessive force.
- Put the heater on the "MINI" position.
- By maintaining the nut **D** with the spanner, adjust the mini injection pressure with the screw **E** (screw driver thickness 1 mm)



Tighten the screws after removing the pressure gauge, and replace the protection cap.

- Apply the gas conversion label next to the rating plate.



- When replacing a 843 SIGMA valve, check all settings.
- For any further information please contact your SBM agent