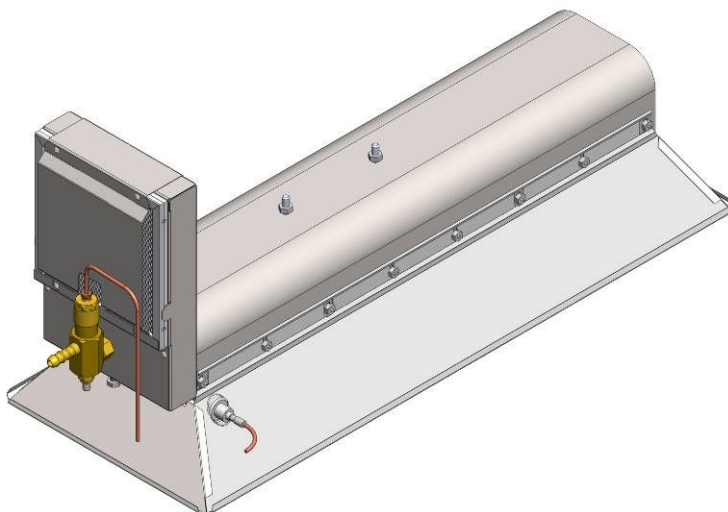


FS BROODERS

TECHNICAL INSTRUCTIONS

N° 05000593/2

GAS HEATING FOR POULTRY AND LIVESTOCK



-
- 1. TECHNICAL SPECIFICATIONS**
 - 2. INSTALLATION**
 - 3. IGNITING THE BROODERS**
 - 4. SHUT-OFF**
 - 5. MAINTENANCE**
 - 6. GAS CONVERSION**
 - 7. SPARE PARTS**
-

Manufacturer :

SBM
3, cottages de la Norge
21490 CLENAY
FRANCE

Service Commercial France
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<http://www.sbm-international.net>



1. TECHNICAL SPECIFICATIONS

Refer to the rating plate on the filter box holder
(see example opposite)

SBM 3, cottages de la Norge
21490 Clénay - France

Type/serial: **6 ZRFS / 1117-0001**

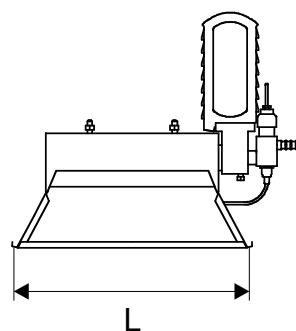
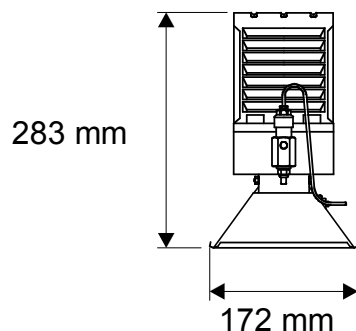
I_{3P} GB/IE/TR G31 148 mbar

ΣQn : 2,800 kW (Hi)

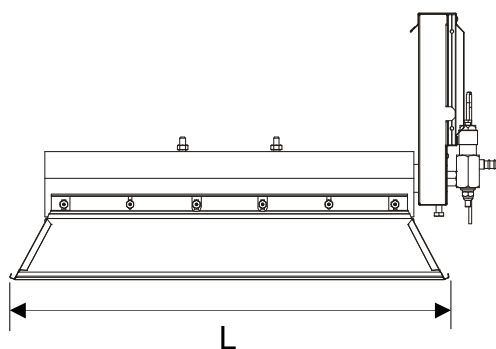
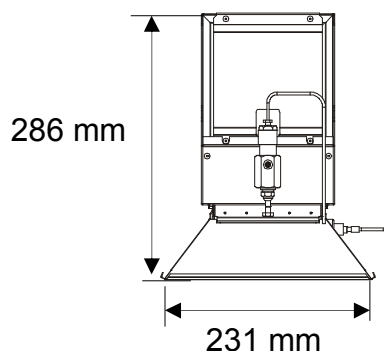
CE 1312 - 1312 AR 1200

05010569

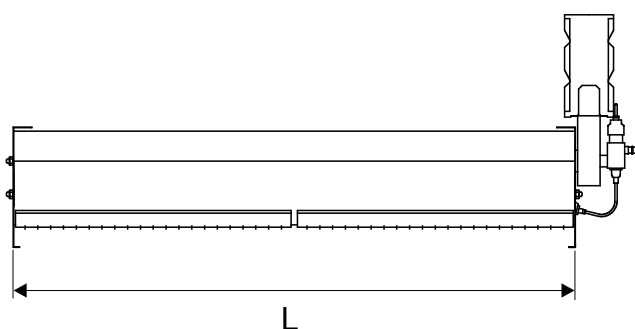
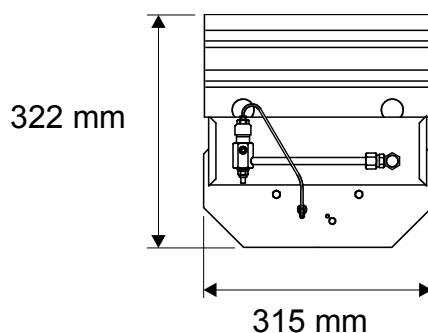
	L (mm)	Weight (kg)
1 ZRFS	154	1.10
2 ZRFS	218	1.25
3 ZRFS	283	1.40



	L (mm)	Weight (kg)
6 ZRFS	283	1.80
8 ZRFS	345	2.20
12 ZRFS	470	2.70
16 ZRFS	597	3.20



	L (mm)	Weight (kg)
212 FS	777	6.20
216 FS	1030	7.50



G31 (Propane) - Inlet pressure 60 to 180 mbar (nominal 148 mbar)									
	1	2	3	6	8	12	16	212	216
	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	FS	FS
CE certificate number	1312 AR 1200								
Nominal capacity (kW) (inlet pressure = 148 mbar)									
ΣQn (Hs)	0.433	0.867	1.355	3.034	3.576	5.418	7.044	10.295	13.546
ΣQn (Hi)	0.400	0.800	1.250	2.800	3.300	5.000	6.500	9.500	12.500
Maximum capacity (kW) (inlet pressure = 180 mbar)									
ΣQm (Hs)	0.477	0.954	1.496	3.349	3.901	5.960	7.759	11.357	14.933
ΣQm (Hi)	0.440	0.880	1.380	3.090	3.600	5.500	7.160	10.480	13.780
Gas consumption (kg/h) (inlet pressure = 148 mbar)	0.031	0.062	0.098	0.220	0.260	0.390	0.510	0.740	0.980
(inlet pressure = 180 mbar)	0.034	0.068	0.108	0.242	0.286	0.430	0.562	0.816	1.080
Ø orifices (1/100e mm)	-	-	-	-	-	-	-	-	-
Primary orifice (restrictor)	-	-	-	-	-	-	-	-	-
Secondary orifice (injector)	27	35	40	58	65	78	95	2x76	2x90
Combustion air (m ³ /h)	0.400	0.800	1.250	2.800	3.300	5.000	6.500	9.500	12.500

G20 (Natural gas) - Inlet pressure 60 to 180 mbar (nominal 148 mbar)									
	1	2	3	6	8	12	16	212	216
	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	ZRFS	FS	FS
CE certificate number	1312 AR 1200								
Nominal capacity (kW) (inlet pressure = 148 mbar)									
ΣQn (Hs)	0.444	0.888	1.388	3.109	3.665	5.552	7.218	10.550	13.881
ΣQn (Hi)	0.400	0.800	1.250	2.800	3.300	5.000	6.500	9.500	12.500
Maximum capacity (kW) (inlet pressure = 180 mbar)									
ΣQm (Hs)	0.489	0.977	1.532	3.349	3.998	6.108	7.951	11.638	15.303
ΣQm (Hi)	0.440	0.880	1.380	3.090	3.600	5.500	7.160	10.480	13.780
Gas consumption (m ³ /h) (inlet pressure = 148 mbar)	0.042	0.086	0.133	0.296	0.350	0.530	0.688	1.005	1.323
(inlet pressure = 180 mbar)	0.047	0.095	0.145	0.326	0.386	0.585	0.759	1.108	1.459
Ø orifices (1/100e mm)									
Primary orifice (restrictor)	33	48	-	80	95	110	125	2x110	2x132
Secondary orifice (injector)	42	57	54	95	100	135	150	2x120	2x132
Combustion air (m ³ /h)	0.400	0.800	1.250	2.800	3.300	5.000	6.500	9.500	12.500

Hi = Net calorific value - Hs = Gross calorific value

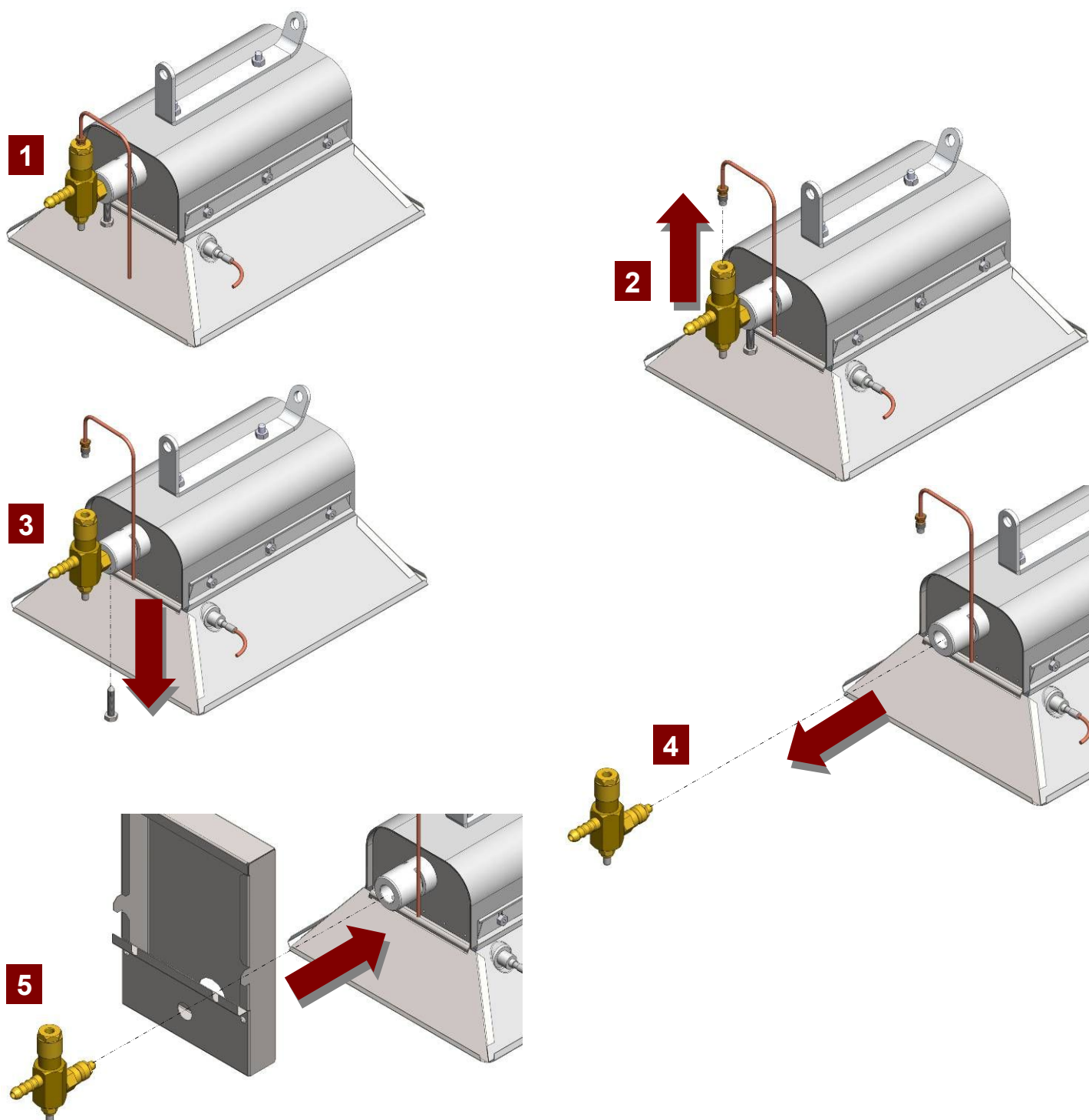
The proper operation of the heaters requires the renewal of 1 m³/h fresh air per kW of operating capacity.

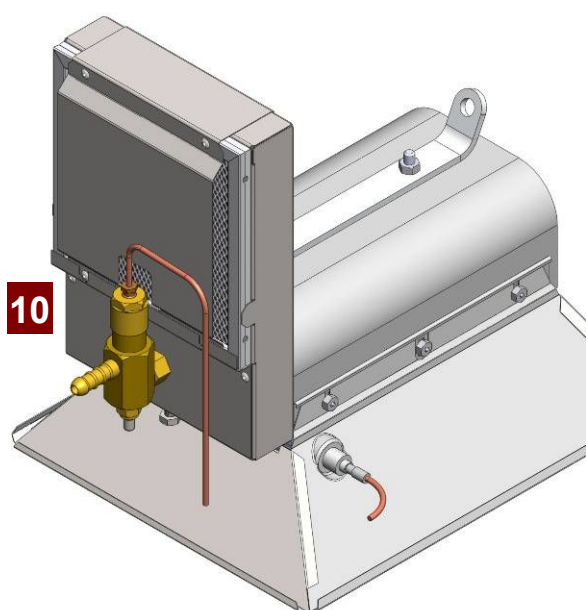
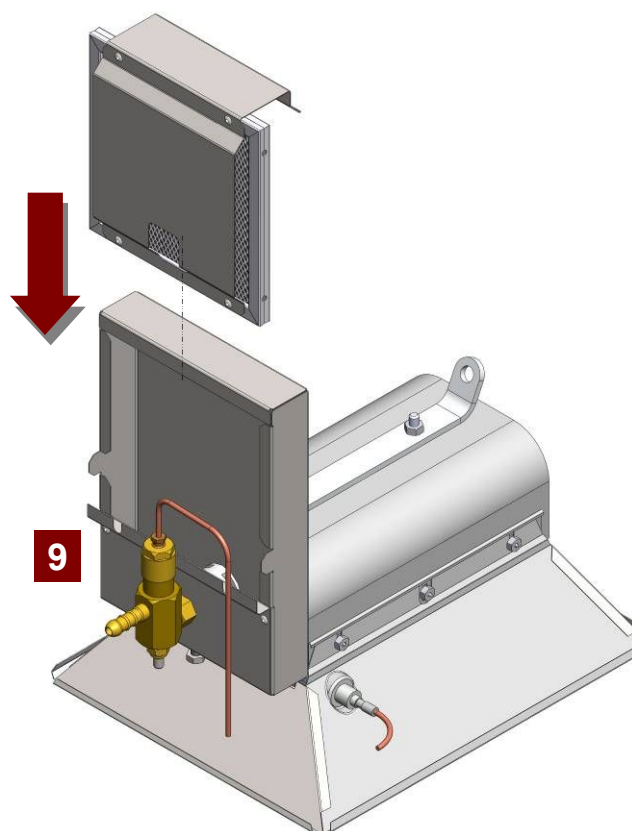
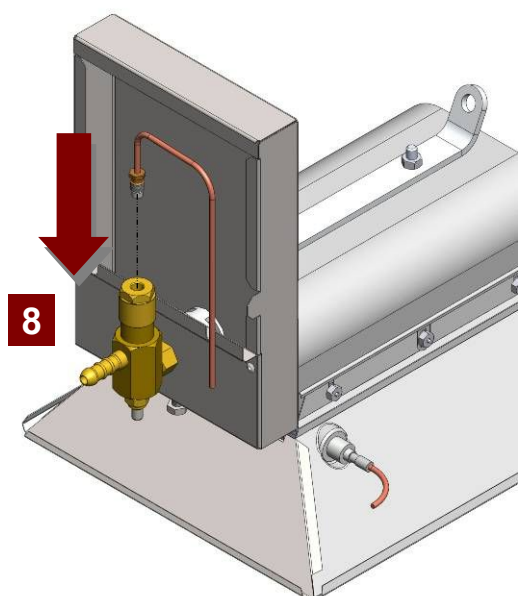
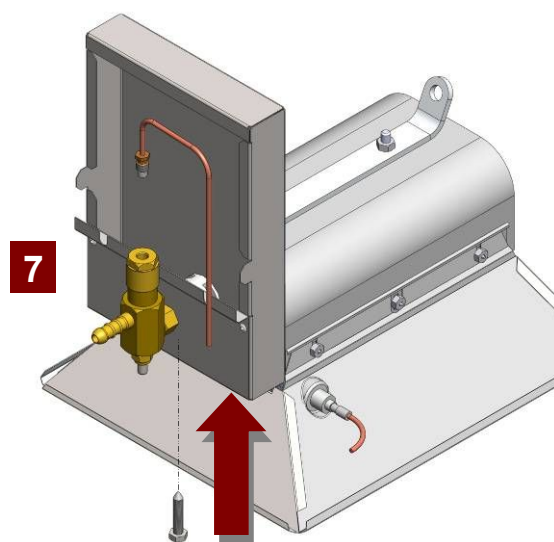
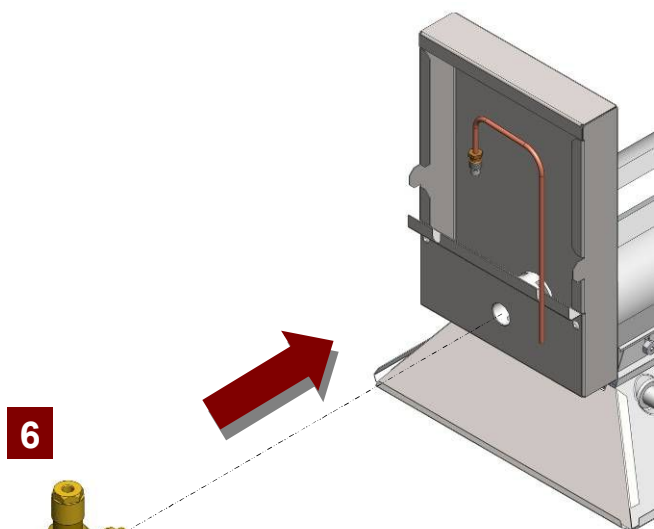
2. INSTALLATION

2.1 RULES AND REGULATIONS

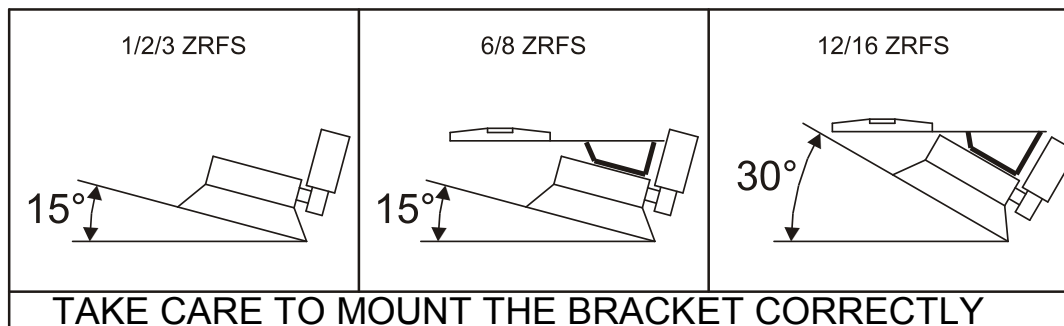
- ✚ The brooders must be installed in compliance with current local regulations, by a qualified installer.
- ✚ The brooders must be installed in sufficiently ventilated premises.
- ✚ The brooders are not authorised for use in domestic premises.

2.2 ASSEMBLING OF FILTER FOR 6 ZRFS, 8 ZRFS, 12 ZRFS, 16 ZRFS

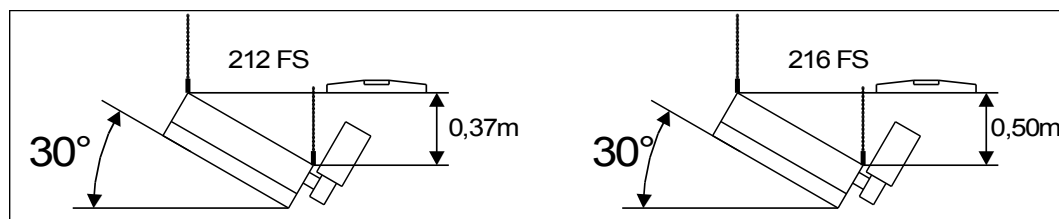




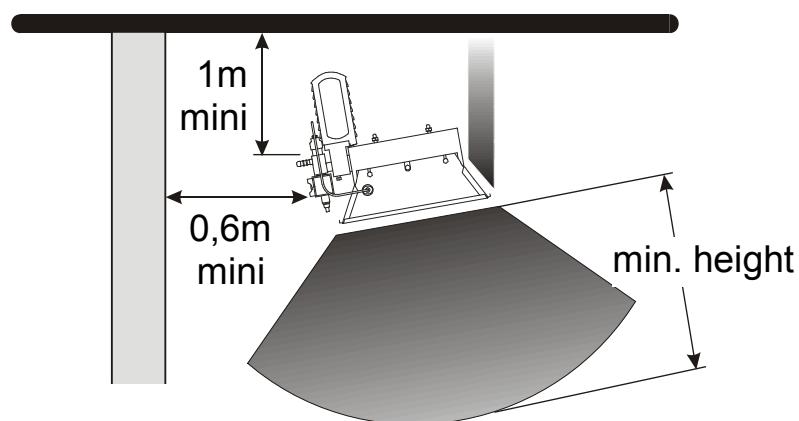
2.3 INCLINATION OF BROODERS 1 ZRFS TO 16 ZRFS



2.4 INCLINATION OF BROODERS 212 FS AND 216 FS



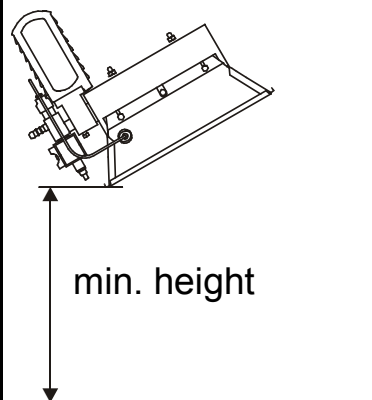
2.5 MINIMUM SAFETY DISTANCES (INFLAMMABLE MATERIAL)



2.6 HEATER ATTACHMENT

Table of minimum **safety** heights with respect to the ground :

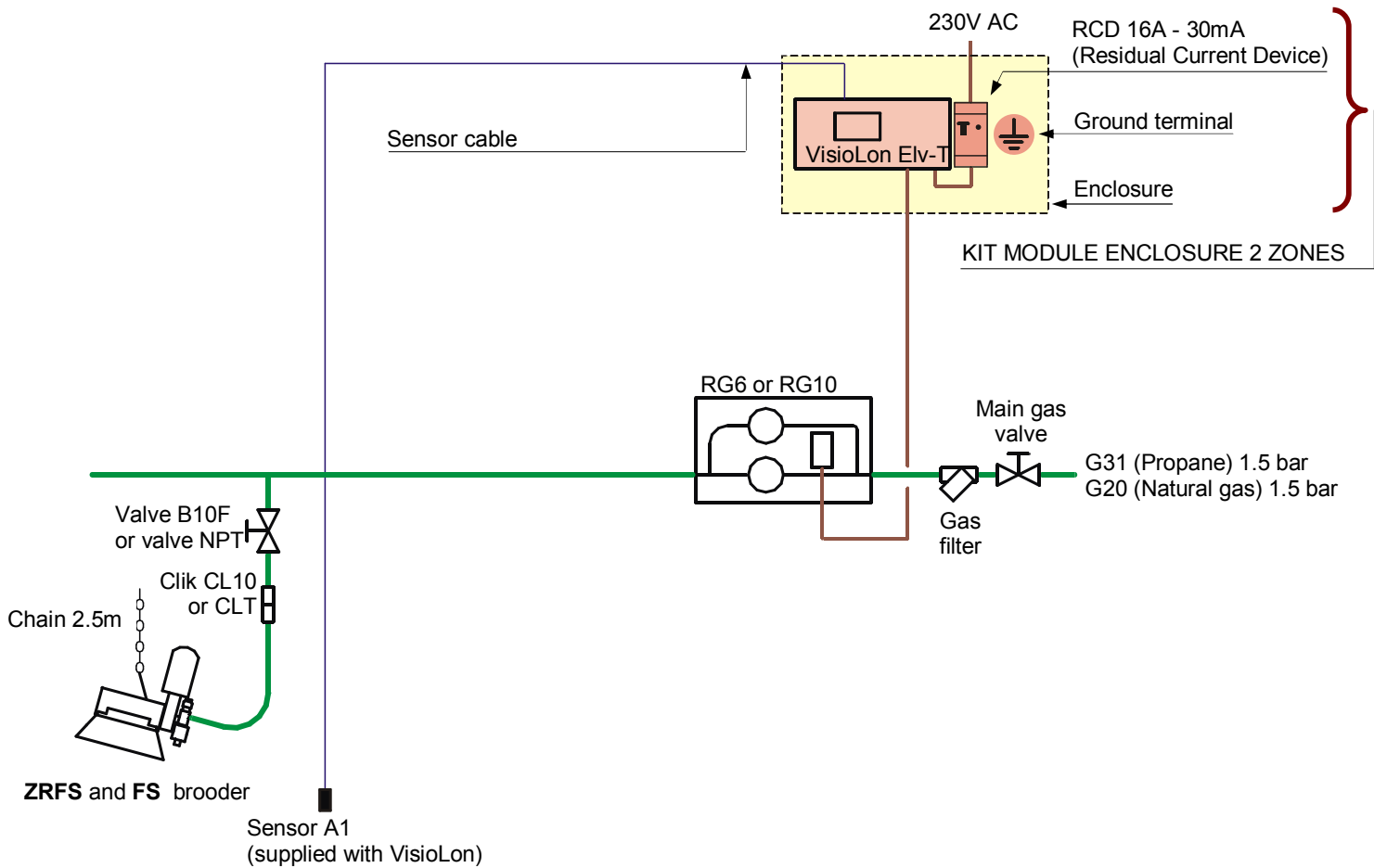
MODEL	MINI. HEIGHT (m)
1 ZRFS	0.60
2 ZRFS	0.80
3 ZRFS	0.80
6 ZRFS	1.20
8 ZRFS	1.20
12 ZRFS	1.20
16 ZRFS	1.20
212 FS	1.50
216 FS	1.50



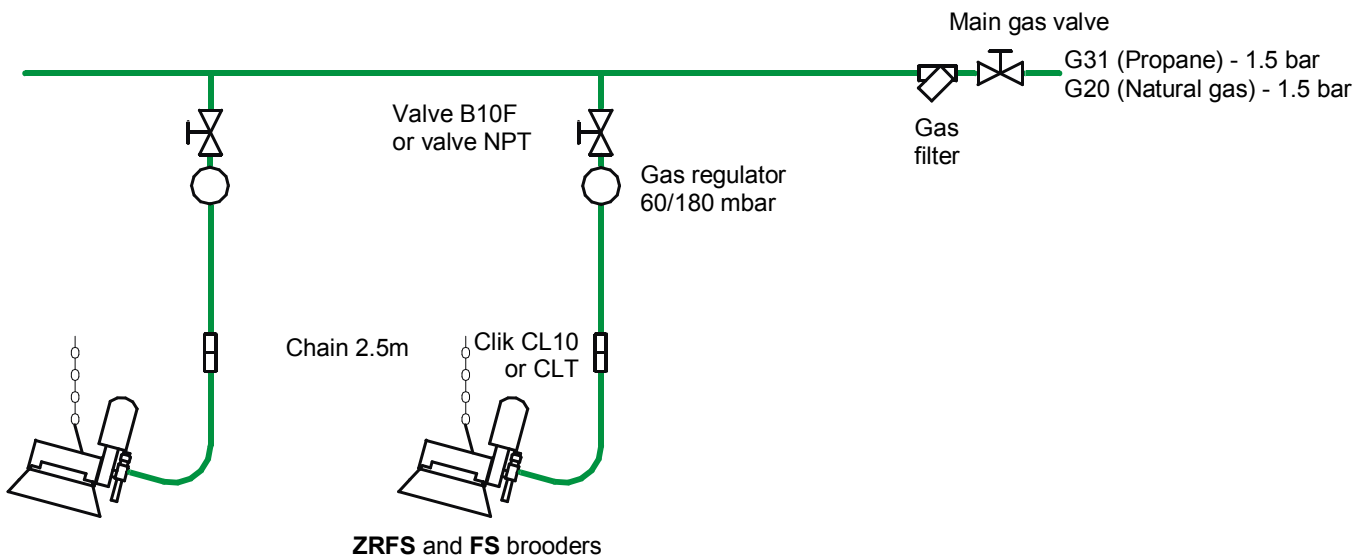
For practical hanging heights, please contact your SBM representative.

3. IGNITING THE BROODERS

3.1 SEMI-AUTOMATIC INSTALLATION

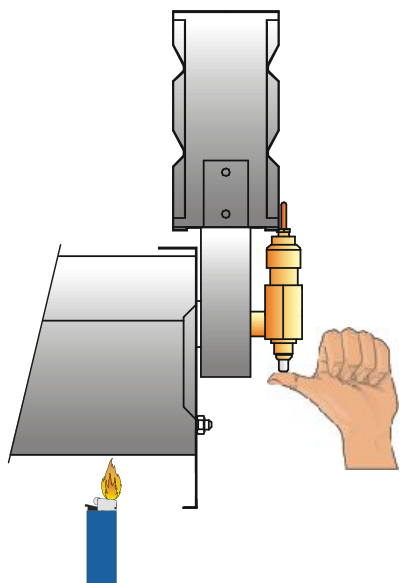


3.2 MANUAL INSTALLATION



3.3 IGNITION

IMPORTANT : preheat the building 24 hours before the animals arrive.



- ↪ Open the main gas valve.
- ↪ Set the RG6-RG10 **MAXI** and **MINI** gas regulators to **10**, or the individual gas regulator to MAXI position.
- ↪ Switch on the power supply (if VisioLon Elv-T).
- ↪ Adjust the **VisioLon Elv-T** set point to the temperature required by the animals.
- ↪ Press the push-button while holding a flame against the ceramic surface of the brooder.
Keep pressing the push-button during 30 seconds.
- ↪ After ignition, set the RG6-RG10 **MINI** gas regulator to :
 - ① for all models of brooder, except 216FS.
 - ② for 216FS.

4. SHUT-OFF

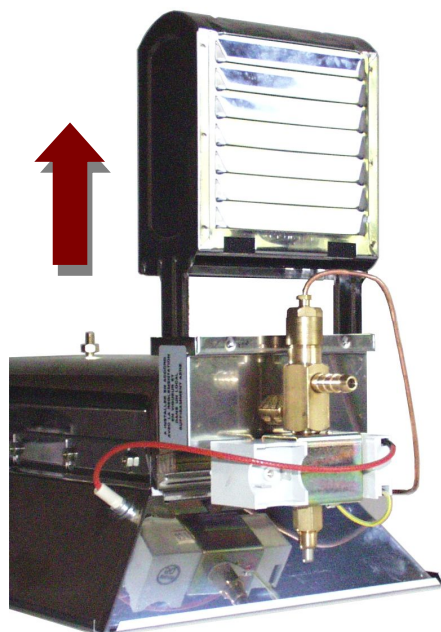
- ↪ Close the main gas valve.
- ↪ Switch off the power supply.

5. MAINTENANCE

ONCE A WEEK (or whenever a blue flame appears), CLEAN THE AIR FILTER.

5.1 BROODER WITH FILTER MEDIA (1 ZRFS, 2 ZRFS, 3 ZRFS, 212 FS, 216 FS)

- ↪ Remove the filter box.



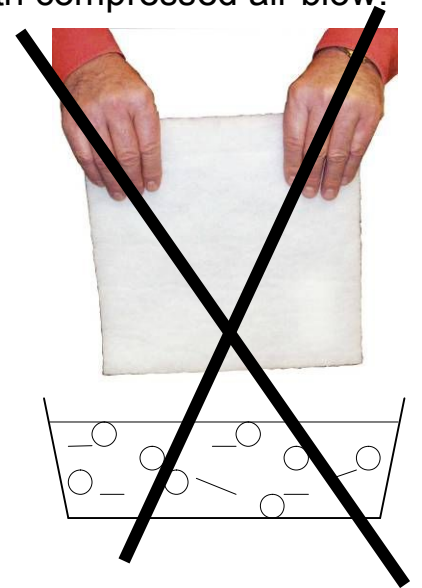
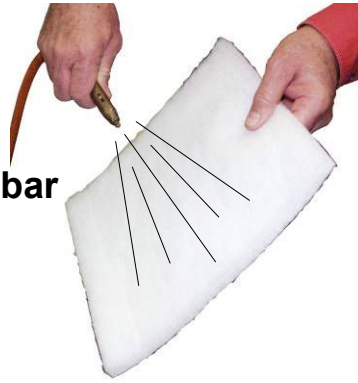
- ↪ Remove the filter media.



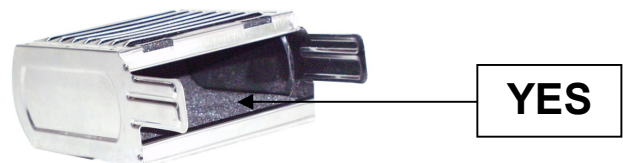
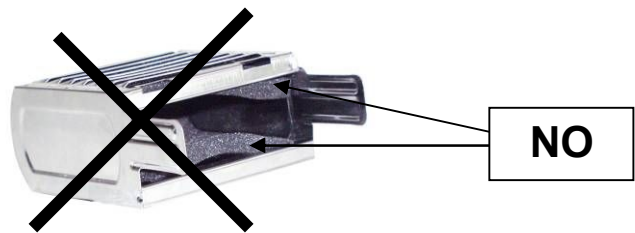
↪ Remove the dust from the filter media by shaking or with compressed air blow.



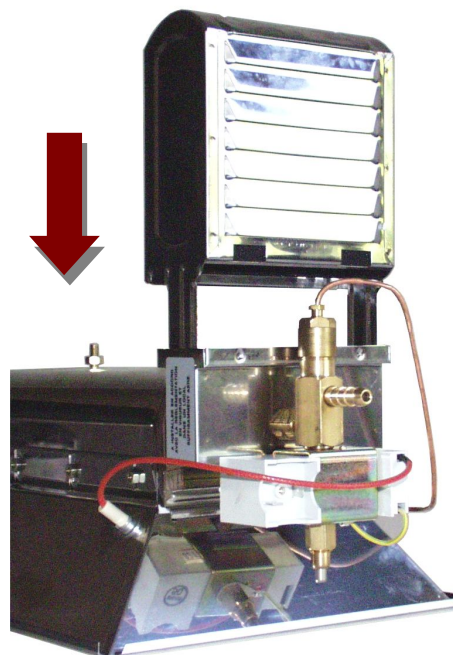
3 → 5 bar



↪ Replace the media filter in the filter box.

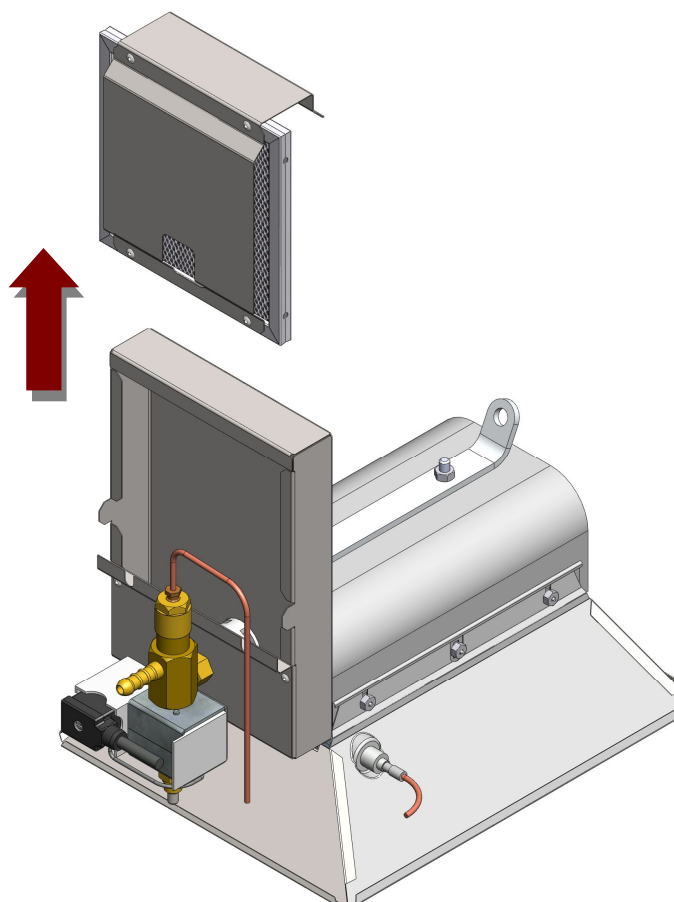


↪ Replace the filter box in the filter holder.

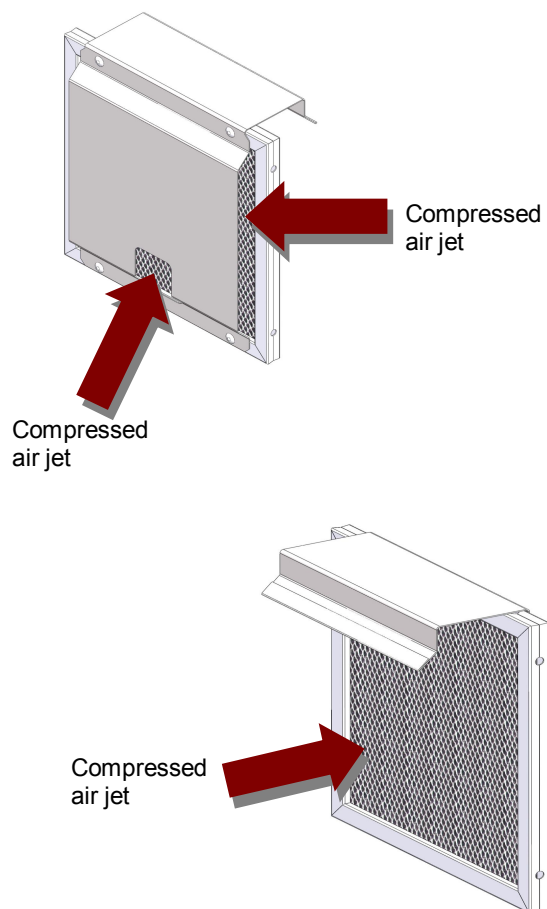


5.2 BROODER WITH METAL FILTER (6 ZRFS, 8 ZRFS, 12 ZRFS, 16 ZRFS)

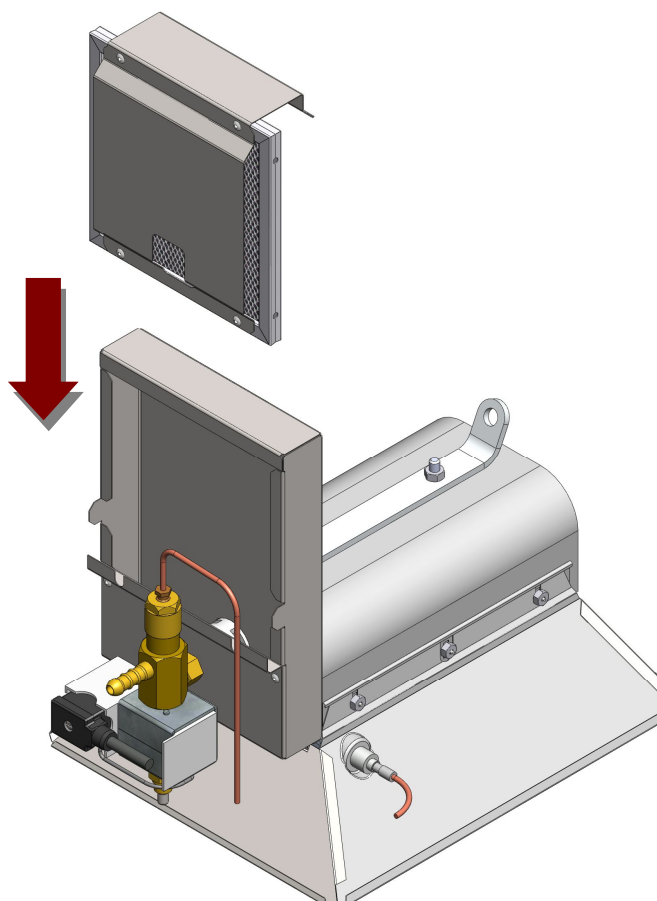
↪ Take out the metal filter.



↪ Blow out the metal filter with compressed air.



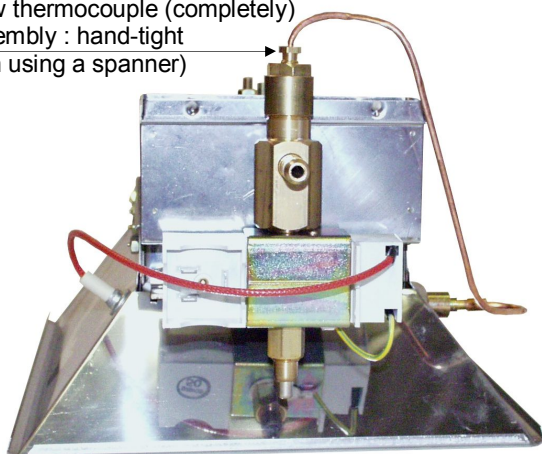
↪ Replace the metal filter in the filter holder.



ONCE A YEAR (or whenever a blue flame appears), CLEAN THE BROODER.

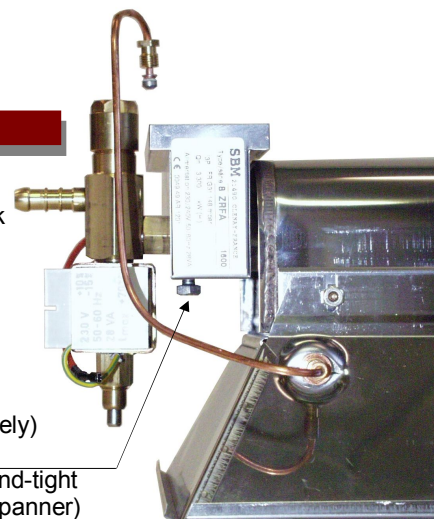
✚ Remove the injector block.

1 Unscrew thermocouple (completely)
(for assembly : hand-tight
+ ¼ turn using a spanner)

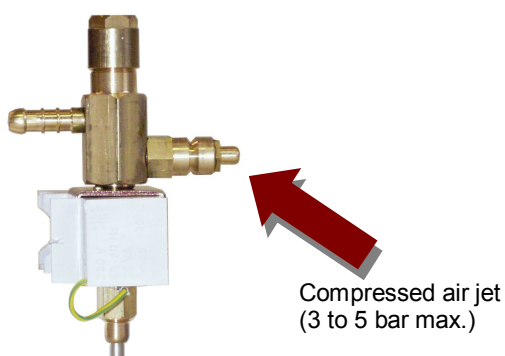


3 Pull the injector block

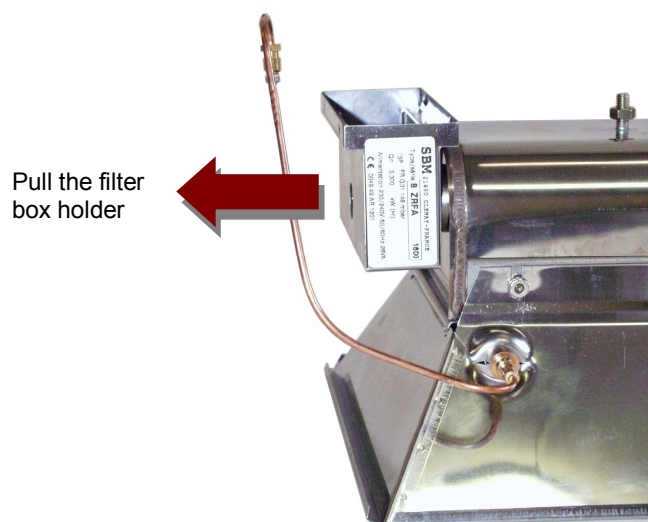
2 Unscrew (completely)
the locking screw
(for assembly : hand-tight
+ ½ turn using a spanner)



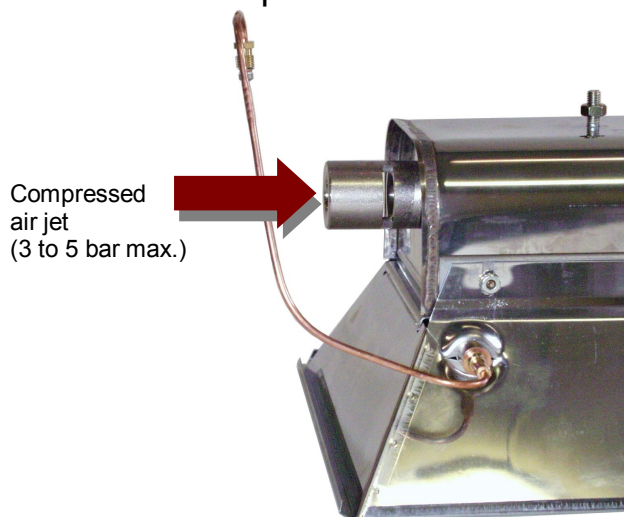
✚ Clean the injector block
with compressed air.



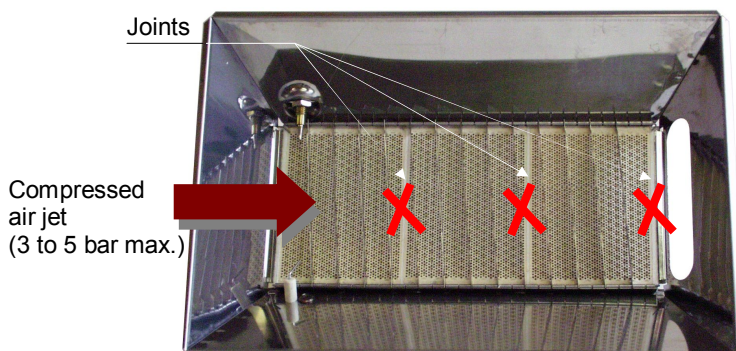
✚ Remove the filter box holder and
blow it with compressed air.



✚ Blow the inside of the burner
with compressed air.



✚ Blow the surface of the ceramic
plaques with compressed air.



**Do not aim at the joints
between the ceramic plaques.**

↪ After cleaning the brooder, make sure that the brooder (surface of the ceramic plaques, hanging bracket) has not experienced mechanical damage.

ONCE A YEAR, PERFORM A VISUAL INSPECTION OF ALL FLEXIBLE GAS HOSES, ESPECIALLY AROUND THE HOSE CLAMPS.

6. GAS CONVERSION

The brooders are designed to operate with the following gases :

CATEGORY	GAS	PRESSURE
I _{3P} GB/IE/TR	G31 (LPG propane)	148 mbar
I _{2H} GB/IE/TR	G20 (Natural gas)	148 mbar

The equipment is adjusted for the type of gas and the pressure as displayed on the rating plate.

For any change of the gas used, please contact your local SBM specialist.

7. SPARE PARTS

For 1 ZRFS, 2 ZRFS and 3 ZRFS (see page 13)

For 6 ZRFS, 8 ZRFS, 12 ZRFS and 16 ZRFS (see page 14)

For 212 FS and 216 FS, please contact your local SBM specialist.



For any spare part order, please specify :

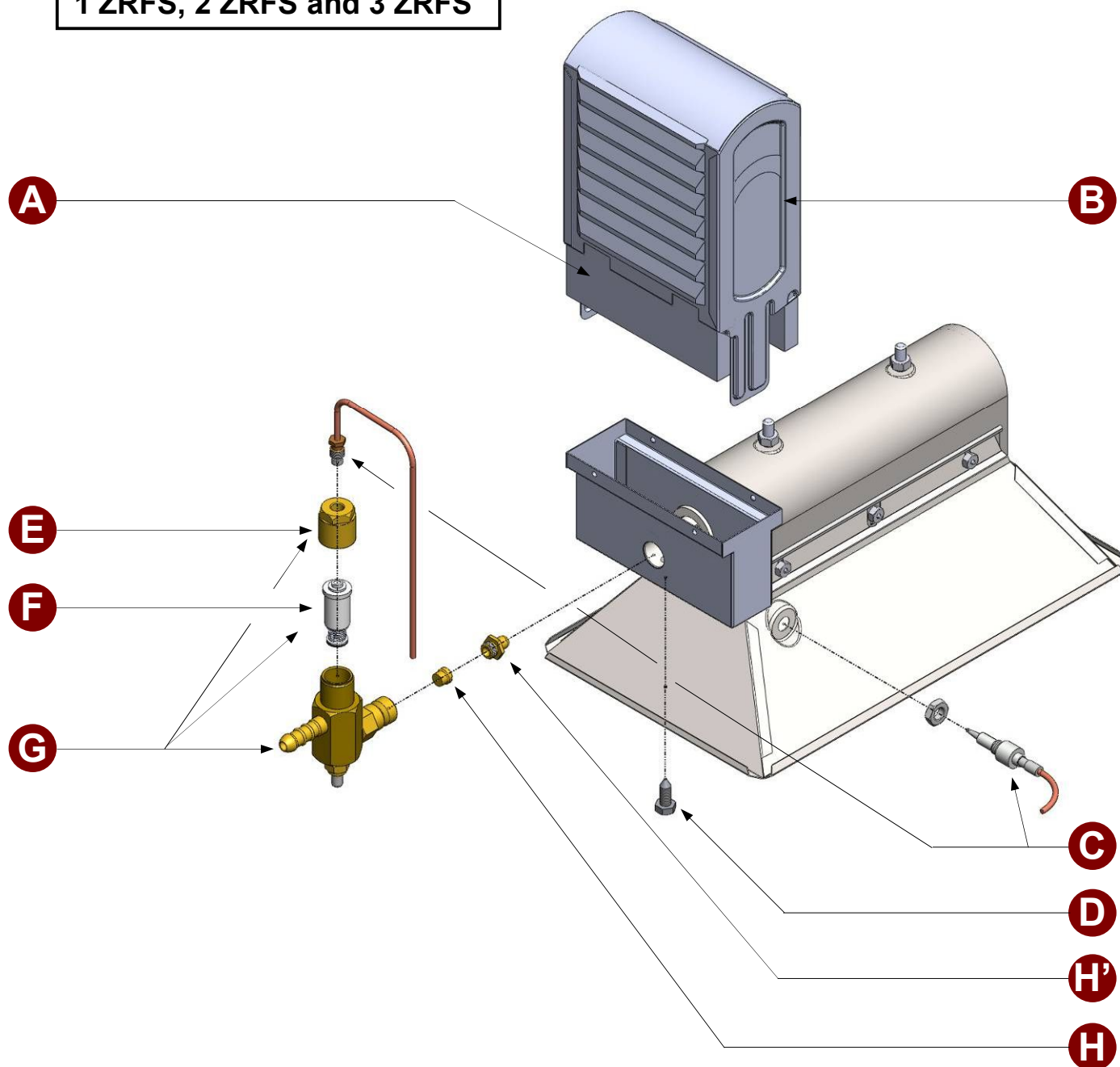
- brooder type and serial number

- type of gas

- operating pressure

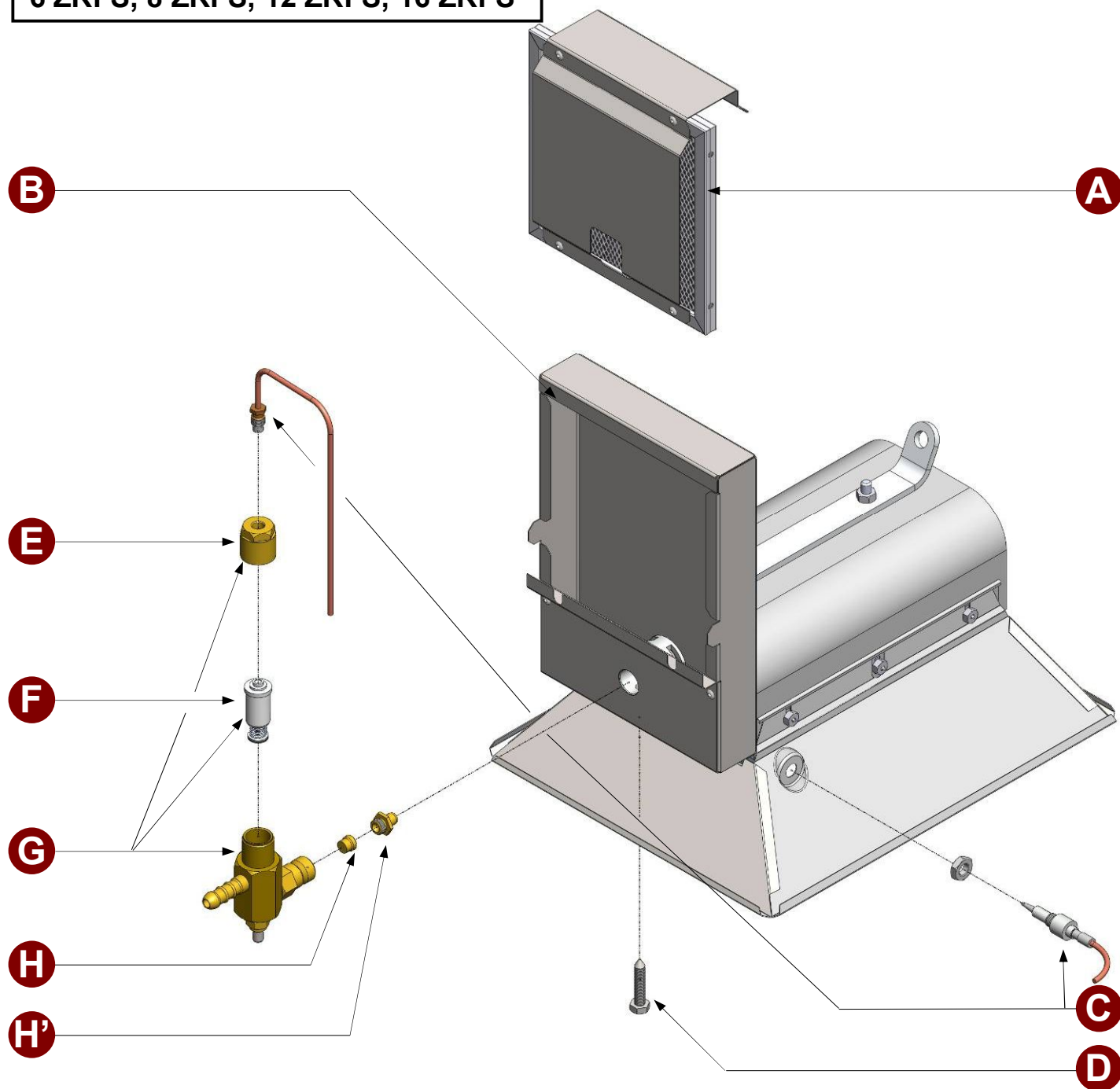
These informations are displayed on the rating plate, attached to each brooder.

1 ZRFS, 2 ZRFS and 3 ZRFS



REP.	SPARE PARTS	
A	10 MEDIAS 115	(supplied by 10)
B	FILTER BOX 115	
C	THERMOCOUPLE FA	
D	10 LOCKING SCREW 6X100/16	(supplied by 10)
E	INJECTOR BLOCK CAP	
F	MAGNETIC HEAD 11.5	
G	BLOCK S LIVESTOCK T10 BLOCK S LIVESTOCK 12G	
H	PRIMARY ORIFICE M9X1	(please specify the number marked on the end of the orifice)
H'	ORIFICE	(please specify the number marked on the side of the orifice)

6 ZRFS, 8 ZRFS, 12 ZRFS, 16 ZRFS



REP.	PIECES DETACHEES	
A	METAL FILTER 150	
B	METAL FILTER HOLDER 150	
C	THERMOCOUPLE FA	
D	10 LOCKING SCREW 6X100/30	(supplied par 10)
E	INJECTOR BLOCK CAP	
F	MAGNETIC HEAD 11.5	
G	BLOCK S LIVESTOCK T10 BLOCK S LIVESTOCK 12G	
H	PRIMARY ORIFICE M9x1	(please specify the number marked on the end of the orifice)
H'	ORIFICE	(please specify the number marked on the side of the orifice)



GAS CERAMIC HEATING

FS BROODERS

INSTRUCTIONS FOR USE

N° 05000593/2

(TO BE DISPLAYED NEXT TO THE CONTROL UNIT)

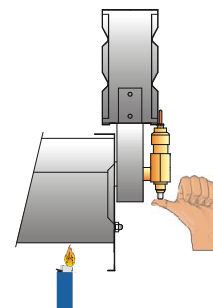
SEMI AUTOMATIC OR MANUAL CONTROL

VisioLon Elv-T module and RG6 or RG10 gas regulation

LIGHTING THE BROODERS :

SEMI AUTOMATIC CONTROL (VisioLon Elv-T and RG6 / RG10)

- ✚ Open the main gas valve.
- ✚ Set the RG6-RG10 MAXI and MINI gas regulators to 10, or the individual gas regulator to MAXI position.
- ✚ Switch on the power supply (if VisioLon Elv-T).
- ✚ Adjust the VisioLon Elv-T set point to the temperature required by the animals.
- ✚ Press the push-button while holding a flame against the ceramic surface of the brooder. Keep pressing the push-button during 30 seconds.
- ✚ After ignition, set the RG6-RG10 MINI gas regulator to :
 - ① for all models of brooder, except 216FS.
 - ② for 216FS.



Do not hold your face close to the ceramics during ignition.

MANUAL CONTROL

- ✚ Open the main gas valve.
- ✚ Open the individual gas valves.
- ✚ Set the gas regulators to **10** (maxi).
- ✚ Light the brooders.
- ✚ Set the individual gas regulators to obtain the desired temperature.

SHUT-OFF :

- ✚ Close the main gas valve.
- ✚ Switch off the power supply.

OPERATION IN CASE OF POWER FAILURE :

A SBM SEMI-AUTOMATIC SYSTEM CAN OPERATE WITHOUT ELECTRICITY

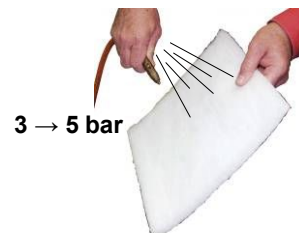
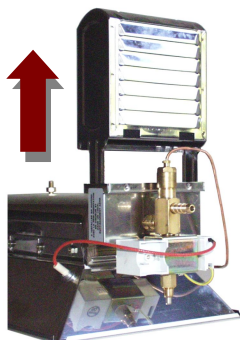
- ✚ Adjust the heating level manually using the **MINI** regulator of the RG6 / RG10 to obtain the desired temperature.
- ✚ After the power comes back, reset the **MINI** regulator to its original position.

MAINTENANCE :

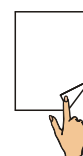
ONCE A WEEK (or whenever a blue flame appears), CLEAN THE AIR FILTER :

For 1 ZRFS, 2 ZRFS, 3 ZRFS, 212 FS and 216 FS :

- ✚ Remove the filter box.
- ✚ Remove the filter media.
- ✚ Remove the dust from the filter media by shaking or with compressed air blow.

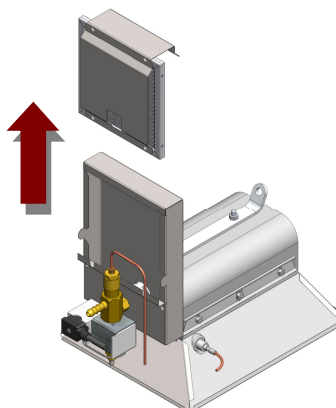


- ✚ Replace the media filter in the filter box.
- ✚ Replace the filter box in the filter holder.

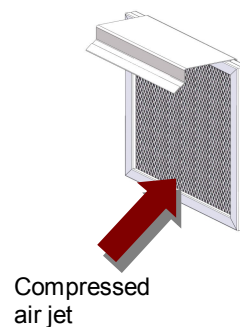
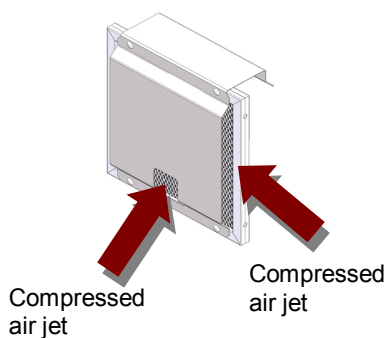


For 6 ZRFS, 8 ZRFS, 12 ZRFS and 16 ZRFS :

✚ Take out the metal filter.



✚ Blow out the metal filter with compressed air.

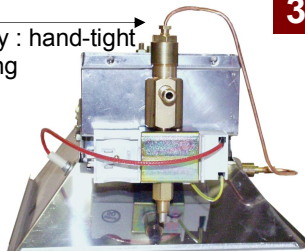


✚ Replace the metal filter in the filter holder.

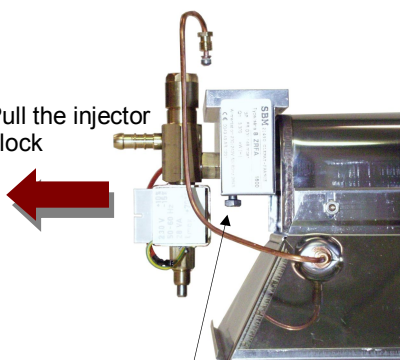
ONCE A YEAR (or whenever a blue flame appears), CLEAN THE BROODER :

✚ Remove the injector block.

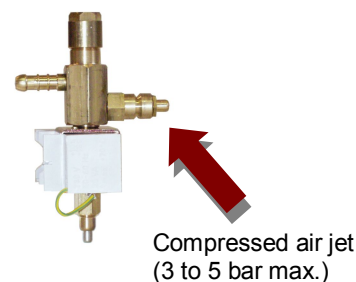
1 Unscrew thermocouple (completely) (for assembly : hand-tight + ¼ turn using a spanner)



3 Pull the injector block

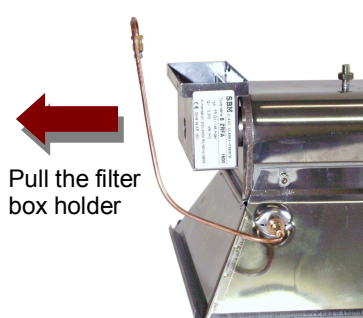


✚ Clean the injector block with compressed air..

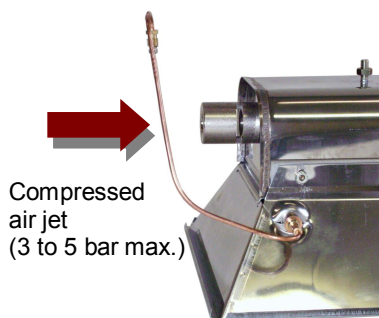


2 Unscrew (completely) the locking screw (for assembly : hand-tight + ½ turn using a spanner)

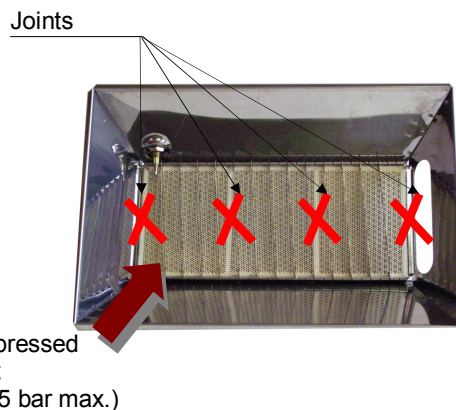
✚ Remove the filter box holder and blow it with compressed air.



✚ Blow the inside of the burner with compressed air.



✚ Blow the surface of the ceramic plaques with compressed air.



Do not aim at the joints between the ceramic plaques.

✚ Replace the metal filter in the filter holder.

✚ After cleaning the brooder, make sure that the brooder (surface of the ceramic plaques, hanging bracket) has not experienced mechanical damage

ONCE A YEAR, PERFORM A VISUAL INSPECTION OF ALL FLEXIBLE GAS HOSES, ESPECIALLY AROUND THE HOSE CLAMPS

Manufacturer :
SBM
3 cottages de la Norge
21490 CLENAY
FRANCE

Installer's stamp :

