

# **INSTALLATION AND SERVICING INSTRUCTIONS FOR SOLARGLOW GAS FIRED RADIANT PLAQUE HEATERS**



**MODELS: SG21 - SG31 - SG41  
SG42 - SG32 - SG82**

**INSTRUCTIONS.....3-12  
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 **AMBI**RAD

The logo for Ambirad features a stylized flame icon to the left of the word 'AMBI' in orange and 'RAD' in grey.

## WARNING

The SG radiant panel you are about to operate has required several years of research and development.

The range referred to in these instructions has successfully undergone the various tests and control operations required under the EC directive applicable to gas burning apparatus: mechanical and electrical safety, reliability, safe combustion....

The CE label is the official recognition of the quality of the design, the manufacturing and the performing of the apparatus, because of the requirements it sets.

The performance and life time of the apparatus will best be preserved if the use and the maintenance thereof meet state of art requirements and existing regulations.

**The manufacturer offers a works 1 year guarantee in respect of parts and labour as from the date of delivery.**

**The guarantee shall apply only when instructions which form the manufacturer's recommendations are compiled to and when the guarantee form supplied with each apparatus is returned.**

**Having ascertained that the installation complies with the recommendations, the contractor will ensure that:**

**1/ the user is informed :**

- that he cannot, on his own will, alter the design of the apparatus; **Any alteration (exchange, removal....) of safety components or parts affecting the efficiency of the apparatus or safe combustion shall systematically result in the withdrawal of the CE label**

- **that the cleaning and maintenance prescribed should be carried out.** A yearly preventive maintenance is recommended in industry but becomes compulsory under E.R.P (Establishment Receiving the Public) requirements. the manufacturer can carry out the operation as part of a maintenance contract.

**2/ to supply the user with the instructions for maintenance and use**

*In full agreement with the CE label awarding body, the company, reserves the right to update these instructions. The instructions attached to the product upon shipment shall form the sole binding document.*

# DATA SHEETS

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## ① HEATING PRINCIPLE

Any object at a temperature above the absolute zero emits energy in the form of electromagnetic radiation.

These rays travel in a straight line and may be reflected and converted into heat when hitting a solid.

These rays are called infrared wherever temperatures emitted are of the order of a few hundred degrees.

As it does not heat the air, the method is particularly well suited for :

the heating of large size buildings :

- the heating of small or poorly insulated buildings,

and : 

- intermittent heating,
- area heating.

## ② WORKING PRINCIPLE

(See Figure Nb. 1).

The SR11 radiant panel is a "direct" overhead heating system, burning natural gas or propane which complies with the European directive applicable to gas-fired apparatus. It generates heat through infrared radiation, the air needed as a combustive is sucked in from ambient atmosphere and the combustion products are subsequently released into the surrounding atmosphere.

The line includes 6 models with a useful power ranging from 6,2 to 25,7 kW . The six models are available in standard version or the more silent 'Place of Cult' version.

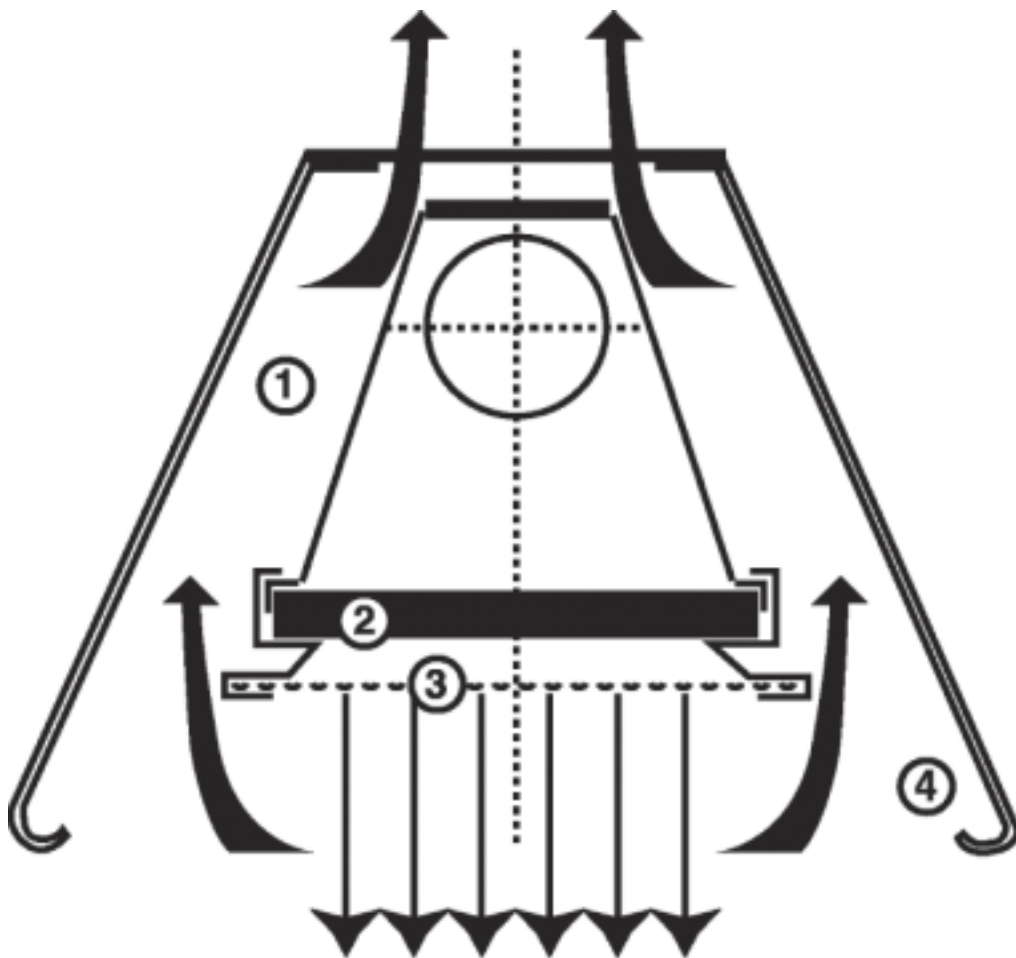
The panel burns gas on the surface of a wafer thin ceramic plate.

A refractory steel grid makes it possible to tap some of the energy contained in the combustion products while increasing thermal exchanges between the flame and the plaque.

When heated, the 'grid-plaque' assembly emits infrared rays directed towards the bodies to be heated by the reflectors.

Burnt up products end up alongside the premixing chamber which improves efficiency thanks to the pre-heating of the combustive mixture..

The SG 21, 31, 41, 61 and 81 operate on a one-speed basis (fail-safe).



PRINCIPALES CARACTERISTIQUES DE CONSTRUCTION  
DU PANNEAU RADIANT SR SOLARONICS

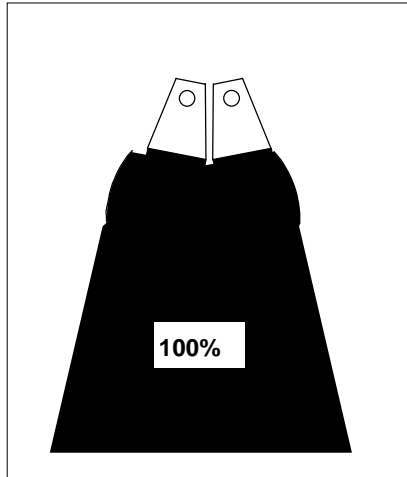
- ① PRECHAUFFAGE DE LA CHAMBRE DE PREMELANGE
- ② PLAQUETTES CERAMIQUE ALVEOLAIRE HAUTE EMISSIVITE  
(BREVET SOLARONICS)
- ③ GRILLE METALLIQUE HAUTE TEMPERATURE
- ④ REFLECTEURS

**Fig 1**

The SG 42, 62, 82 models which include two burners each allow a two-rate operation (100 %, 50 % of the rated power):- if demand is low one burner only will come on which spells increased comfort for the user while reducing energy consumption (Figure n° 2).

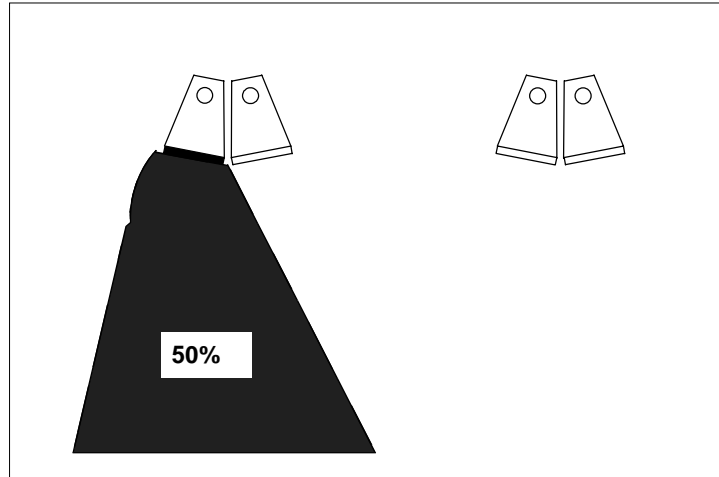
**BESOINS ENERGETIQUES  
DU BATIMENT IMPORTANTS**

Montée en température rapide



**BESOINS ENERGETIQUES  
DU BATIMENT FAIBLES**

Atteinte et maintien du point de consigne



T° de consigne

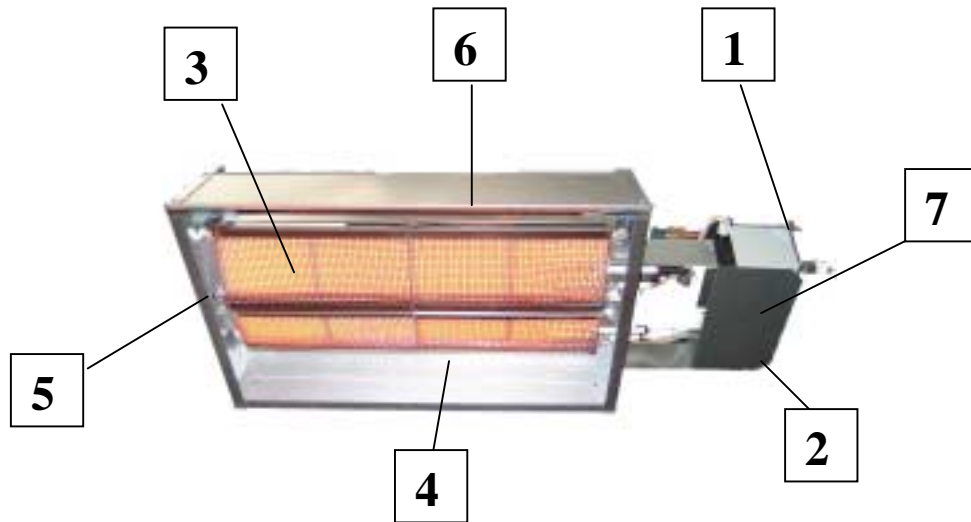
T° de consigne - 2 °C



**Fig. 2**

On the high/low models, the profile and the location of the burners and reflectors have been designed so as to maintain an identical floor area whether operating in low or high fire.

### 3 DESCRIPTION



Note : the coils of the electrovalve may be adjusted differently according to the model.

REP	DESIGNATION	Q	REMARKS
1	Gas Line	1	For details, see following page
2	Control and Safety Box	1	HV light-up Light-up management and safety control
3	Burner	1 2	(mod. SG 21, 31, 41) (mod. SG 42, 62, 82, 61,81)
4	Side Reflector	2	Aluminized steel
5	End Reflector	2	Aluminized steel
6	Casing	1	Aluminized steel
7	Electrode Plate	1 2	For SG 21, 31, 41 For SG 42, 62, 82, 61, 81 including : - light-up electrode - ionisation electrode - ground electrode













# INSTALLATION

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## ① REGULATIONS

The unit shall meet existing recommendations and regulations, and set up in compliance with the state of art standards applicable to all the official bodies commissioned to that effect, therefore, the contractor shall comply with the requirements set forth under Standard NF P 45-204 regarding gas-burning apparatus and under NF C15-100 Standard.

(NF : French Standard laid down by AFNOR)

It shall also be incumbent upon the contractor to comply with all regulations relevant to the type of premises :

### REGARDING INDUSTRIAL PREMISES

Industrial premises shall meet, at least the requirements laid down under the French "Labour Acts" regarding ventilation and waste disposal (sections R232-1 to R232-4). Moreover, some facilities have been classified under the French environmental protection Acts ; these fall under the provisions of Act n°76-663 of 19/07/1976, referred to in the three volumes of "Installations Classées pour la Protection de l'Environnement" (Facilities classified under the Environment Protection Acts).

### REGARDING (E.R.P) (Establishments Receiving the Public)

The provisions applicable to the apparatus, its setting up, its commissioning, and its maintenance are set forth in sections CH1 to CH58 and GZ1 to GZ30 of "Règlement de Sécurité contre les Risques d'Incendies et de Panique dans les E.R.P." (Safety Provisions Regarding Fire Hazards and anti-Panic Measures in Public Funded Establishments) as well as in local Health and Safety Regulations.

The contractor shall make sure that the air intakes permit the flow rates recommended under existing regulations with respect to the SR II (\*) plus those required under the general rules and principles relevant to the ventilation of buildings other than housing buildings (Local Health and Safety Regulations).

(\*) Regarding public establishments these rates are 10 Nm<sup>3</sup>/h per kW of installed thermal capacity (cf sections CH 54 and GZ 21 of the Health and Safety Regulations regarding fire protection in Establishments Receiving the Public).

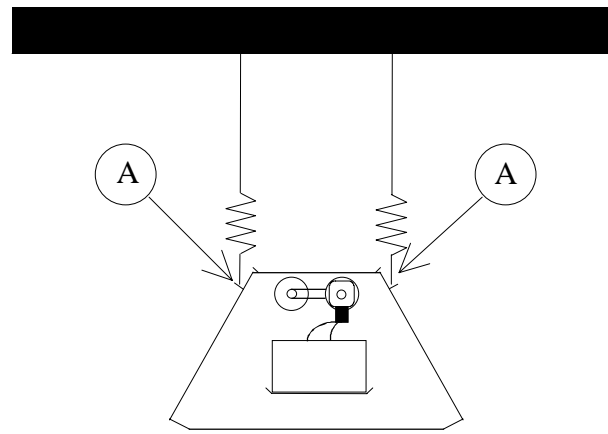
Upon installation completion, the contractor shall verify that each SR II works effeciently and is connected to the gas and electricity mains.

Finally, he will ensure that the user is informed on the operating and the statutory yearly maintenance procedures of the apparatus (cf. JO of 14/08/80 - Sections CH 57 and CH 58). He shall draw up a final acceptance report with the user and supply the latter with the relevant usage instructions.

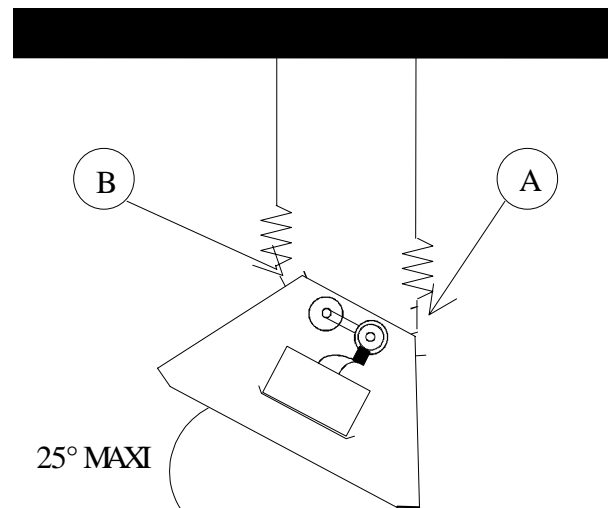








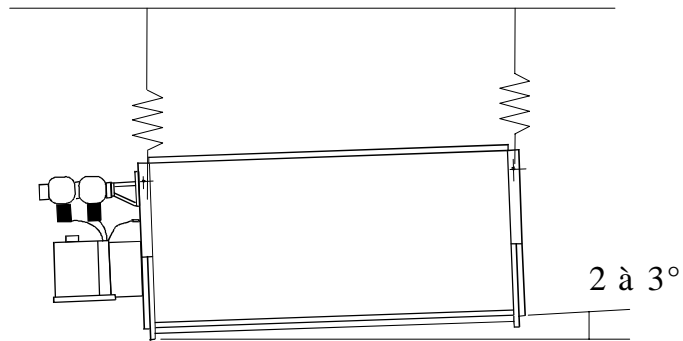
POSITION PLUVE

**Fig. 5**

POSITION INCLINEE

**Fig. 6**

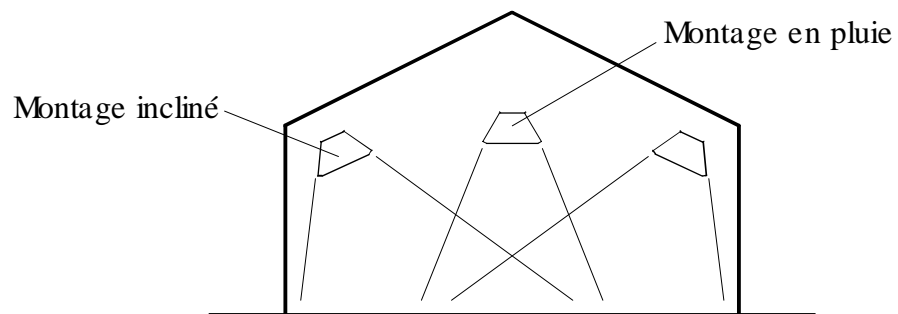
For units in a tilting position, it is imperative to check that the first speed in a high position. The first speed's burner is located on the left handside when looking at the gas line side.



POSITION PLUIE OU INCLINEE

**Fig. 7**

A combination of various types of setups allow to cover the entire area in a uniform way (figure n°8).

**Fig . 8**

LIT UP SURFACES	HANGING HEIGHT (m)						
	4	5	6	7	8	9	10
Appliances in "shower position" (not tilted)	5,2 x 5,2	6,5 x 6,5	7,8 x 7,8	9,1 x 9,1	10,5 x 10,5	11,8 x 11,8	13 x 13
Appliances with a 25° tilt	5,2 x 6,4	6,5 x 8	7,8 x 9,6	9,1 x 11,2	10,5 x 12,8	11,8 x 14,4	13 x 16







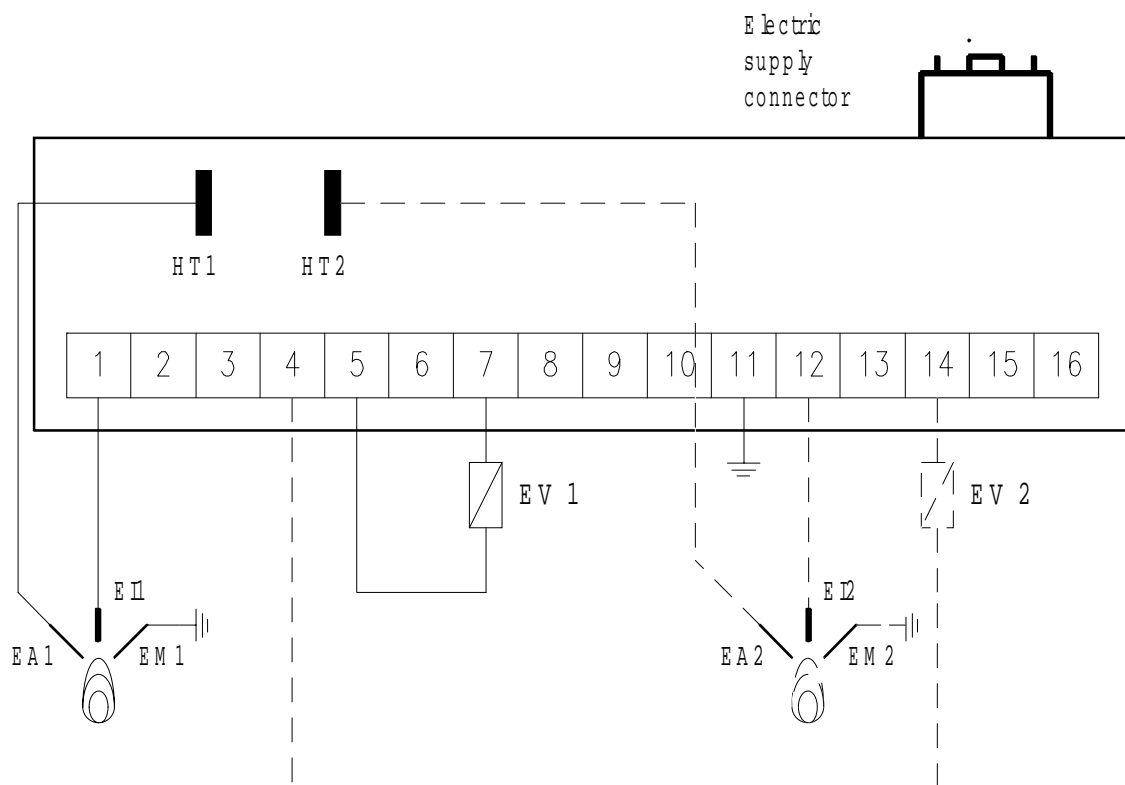








## - WIRING DIAGRAM OF THE VARIOUS FUNCTIONS OF THE CONTROL BOX



HT1: High voltage 1st speed  
 HT2: High voltage 2nd speed \*  
 EM1: Earth electrode 1st speed  
 EM2: Earth electrode 2nd speed \*  
 EA1: Light up electrode 1st speed  
 EA2: Light up electrode 2nd speed \*  
 EI1 : Ionisation electrode 1st speed  
 EI2 : Ionisation electrode 2nd speed \*  
 EV1: Electrovalve 1st speed  
 EV2: Electrovalve 2nd speed \*

\* Pour SRII 42, 62, 82 only



# OPERATIONS

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- ❹ **SPARE PARTS** ..... Page 34



## 1/3 MAINTENANCE OPERATIONS

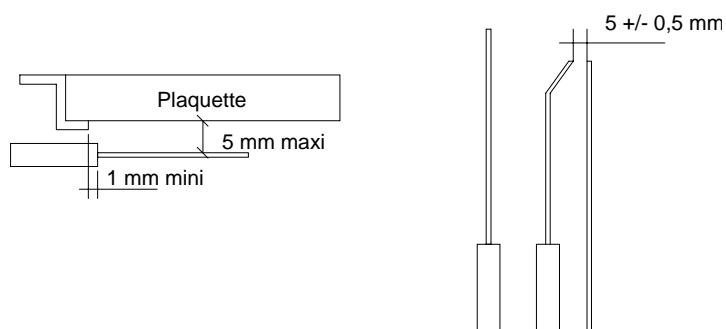
### 13/1 Inspection of radiant surface

In case a wafer leaks or shows cracks, replace the burner.

### 13/2 Electrodes (figure n°9)

A single screw holds the electrode support plate.

Take them down, clean them (use a metal brush), check the gap between light up electrodes, re-install and check position adjustment.



**Fig. 9**



### 3 MALFUNCTION AND TROUBLESHOOTING

SYMPTOMS		POSSIBLE CAUSES	REMEDY
Lighting and flame control device	BURNER		
The light-up cycle proceeds normally with HV sparks between light-up electrode and earth	Does not light up upon the first attempt	<ul style="list-style-type: none"> <li>- Gas sealing tap shut</li> <li>- Gas lines inadequately bled</li> </ul>	<ul style="list-style-type: none"> <li>- Turn tap on</li> <li>- Bled the gas line</li> </ul>
	Does not light up after several attempts	<ul style="list-style-type: none"> <li>- Filter</li> <li>- Injector clogged or partially clogged</li> <li>- Ill-suited injector</li> <li>- Gap between light-up electrode is too wide</li> <li>- Electrovalve jammed in 'off' position</li> </ul>	<ul style="list-style-type: none"> <li>- Clean the filter</li> <li>- Clean the injector</li> <li>- Replace injector (table p12)</li> <li>- Adjust gap (Figure n°9)</li> <li>- Replace the electrovalve</li> </ul>
	The burner lights up but goes out within 4 seconds upon light-up	<ul style="list-style-type: none"> <li>- Ill-suited injector</li> <li>- Ionisation electrode badly positioned in relation to burner or connected to earth</li> <li>- Poor earthing on safety box</li> <li>- The safety box is defective (ionisation control is too slack)</li> <li>- Phase-neutral inversion</li> <li>- Neutral impedance</li> </ul>	<ul style="list-style-type: none"> <li>- Replace the injector (table p12)</li> <li>- Reposition the electrode (figure n°9)</li> <li>- Clean point contact</li> <li>- Replace the control box</li> <li>- properly (figure p22)</li> <li>- fit in an isolation transformer</li> </ul>

SYMPTOMS		POSSIBLE CAUSES	REMEDY
Lighting and flame control device	BURNER		
No high tension sparks between The light-up cycle p light-up electrode and earth		<ul style="list-style-type: none"> <li>- No electric infeed</li> <li>-Melted fuse wire</li> <li>-Inversion neutral phase</li> <li>-Light-up electrode to earth</li> <li>-Light-up electrode widen</li> <li>-Oil the light-up electrode</li> <li>-Electrode ceramic cracked (leaking of sparks or burner or box)-</li> <li>-Poor connection to H.T.wire or poor earth</li> <li>-Light-up box defect</li> </ul>	<ul style="list-style-type: none"> <li>-Check arrival of sector</li> <li>- Replace the fuse wire when cause is found</li> <li>-Connect correctly(scheme p22)</li> <li>- Seperate them from the earth</li> <li>- Adjust the separation (scheme 9)</li> <li>-Clean with a solvent</li> <li>-Change electrode</li> <li>-Redo the connections correctly</li> <li>-Change this</li> </ul>



## ④ SPARE PARTS

DESCRIPTION	code nb.
Electrovalve coil.....	9421364
1 rate control and safety box (SR II 21, 31 and 41).....	9424131
1 rate control and safety box (SR II 61 and 81).....	9424132
2 rate control and safety box (SR II 42, 62 and 82).....	9424141
Complete 1 rate electrovalve for SR II 21, 31 and 41.....	9421371
Complete 1 rate electrovalve for SR II 61 and 81.....	9421367
Complete 2 rate electrovalve for SR II 42, 62 and 82.....	9421369
Electrode assembly .....	7223044
Burner kit for SR II 21 and 42.....	7220300
Burner kit for SR II 31, 61 and 62.....	7220302
Burner kit SR II 41, 81 and 82.....	7220304
Burner kit places of worship for SR II 21 and 42.....	7220306
Burner kit places of worship for SR II 31,61 and 62.....	7220307
Burner kit places of worship for SR II 41,81 and 82.....	7220308

