

CERAMIC RADIANT HEATERS “SBC”

Models:

SBC6 ; SBC8 ; SBC10 ; SBC12 ; SBC16 ;
SBC10+10 ; SBC12+12 ; SBC30 ;



OPERATING AND MAINTANCE MANUAL

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The Manual contains

- 1. General instruction**
- 2. Guarantee conditions of guarantee**
- 3. Technical data**
- 4. Installation**
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INSTRUCTION

Thank you for your choosing this Sun Beam products. Sun Beam aim to satisfy you, and we also hope that devices which are designed and produced according to range standard meet your expectations.

This manual contains all informations about installation, properly functioning and service for GAS RADIANT HEATERS. That is why you should read it carefully before installation.

Please, keep this manual for future reference.

Proper service and maintenance recommendations allow for long and productive performance.

Each heaters is equipped with:

- rating plate with technical specification

THE RATING PLATE

Model	SBC6	Nominal heat	9,5kW
Category	II2H3+	Work power	8,6kW
Destination country	Poland	GAS	
Voltage	220-240V	Gas type	Metan GZ-50
Frequency	50Hz	Pressure in network	20mbar
Electric absorb	18W	Pressure in network	18mbar
Safety class	IP20	Nozzle diameter	2,30mm
Production date	01.02.00	Gas consumption	0,91m ³ /h
Code	063AS4795		

NOTICE

1. Radiator can be only installed in a ventilated room
 2. Read the instruction before assembling
 3. Read the instruction before starting the heater
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SAFETY USING THE HEATERS

- After unpacking, inspect the unit for damages. Wrapped elements should be kept away from children.
 - Elementy opakowania oraz sam promiennik powinny być trzymane z dala od dzieci, ponieważ stanowią potencjalne zagrożenie życia i zdrowia,
 - All gas heaters are reviewed and tested prior to distribution
 - The rating plate which is on each device must be strictly observed.
 - Any improvements and modifications which could change technical data should be reported to a trained representative of **Sun Beam** company.

 - In case malfunction, the heater must be disconnected from the main source of gas and power.
 - Every change must be shown on the rating plate .The heater should only be installed by trained personell,
 - Our technical service is always at your disposal and can offer advise and information concerning heater operation.
 - **Sun Beam** does not take responsibility for damage to devices or people, as a result of improper use of heaters.
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General conditions of guarantee

Sun Beam gives 12 months guarantee as of the date of first use, for products which are installed by an authorised service, but not longer than 18 months from the date of sale.

The period of guarantee given by **Sun Beam** does not include materials delivered by others manufacturers.

The guarantee only covers devices, which are defective due to manufacture.

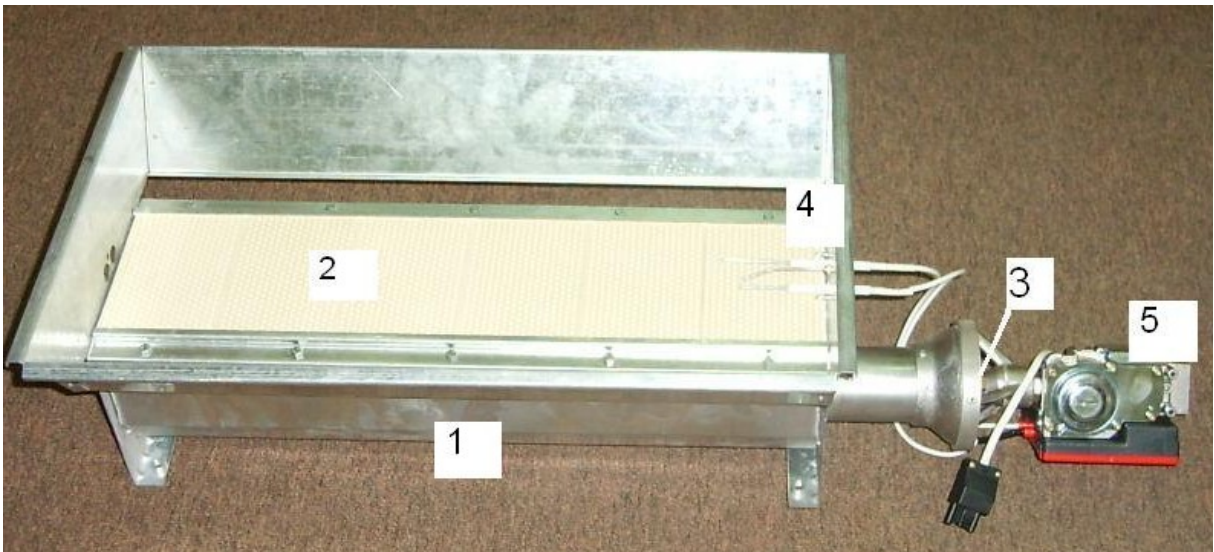
The guarantee does not include improper and careless use of devices.

TECHNICAL DATA

Main heaters components

1. aluzinc burner with Venturi tube,
2. Ceramic plates with micro-holes as a radiation surface,
3. Removable nozzles depending on kind of gas natural gas or propan-butan,;
4. Safety ignition with flame sensor,
5. Solenoid valve with gas regulator and electronic controller.

Optionally the heaters can be equipped with hose with fittings.



Technical data radiant heaters SBC

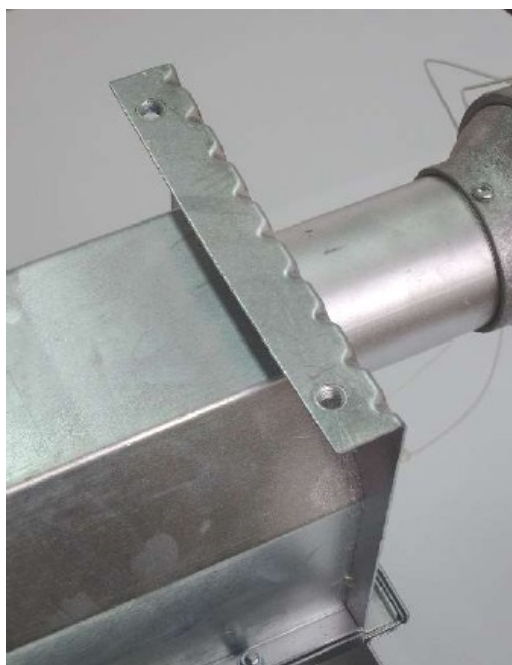
Model	SBC 6	SBC 8	SBC 10	SBC 12	SBC 16	SBC 10+10	SBC 12+12	SBC 30
Quantity of plates	6	8	10	12	16	20	24	30
Nominal power Hs [kW]	9.3	12.5	15.6	18.7	24.9	31,1	37.4	46,7
Work power Hi [kW]	8.6	11.4	14.3	17.1	22.8	28,6	34.2	42,8
Ø nozzle NG E [mm]	2.50	3.0	3.2	3,4	3.9	2 x 3.2	2 x 3.4	3 x 3.2
Ø nozzle B/P[mm]	1.70	2.0	2.2	2.4	2.8	2 x 2.2	2 x 2.4	3 x 2.2
Working pressure for NG [mbar]	20	20	20	20	20	20	20	20
Working pressure for propane-butane [mbar]	36	36	36	36	36	36	36	36
Pressure on nozzle NZ [mbar]	18	18	18	18	18	18	18	18
Pressure on nozzle B/P [mbar]	31	29	29	29	29	29	29	29
Gas consumption NG [m ³ /h]	0,86	1,14	1.43	1,71	2.28	2,86	3,42	4.28
GAS consumption (pure butan) B/P [kg/h]	0.55	0.72	1,07	1.08	1.48	2.1	2.16	3.21
Electrical connection	230V-50Hz							
Radiating surface [cm ²]	650	880	1090	1300	1760	2180	2600	3270
Surface to heat [m ²]	35-45	50-60	55-65	60-80	80-100	90-110	100-120	125-155
Weight [kg]	11	13	15	17	21	29	32	43

INSTALATION

During first start it is important to make preliminary reviews what guarantee proper functioning of devices. It is necessary to do activities mantioned below:

1. Check if gas installation is airtights and if diameters are proper.
2. Check if gas pressure is the ame as it is writen on rating plate
3. Check if gas valve is properly connected with radiator.
4. Check if polarity of system F/N is marked on connection and if there is ground
5. Check if support and chain are strongly installed and a bolts are screwed down

Radiator can be installed on walls, pillars by arms screwed down to heaters construction in prepared place with screwed holes under M 8 bolts, or by a chain to a cailing using supports type "S".



rys. 1



rys. 2

Recommended height of radiant heaters SBC installation:

Model	Height [m]
SBC 6	3.0 – 3.5
SBC 8	3.5 – 4.5
SBC 10	4.0 – 5.0
SBC 12	4.0 – 5.0
SBC 16	5.0 – 6.0
SBC 6+6	4.0 – 5.0
SBC 8+8	5.0 – 6.0
SBC 10+10	5.0 – 6.5
SBC 12+12	5.0 – 6.5
SBC 30	7.0 - 9.0

During installation you have to pointed out minimal distance from heater to the wall in case if the wall would not be made of refractory materials or it would not be high temperature resistance of radiance. Minimal distance are stated in table above:

Model	Odległość pomiędzy ścianą a promiennikiem [m]			
	Dach	Posadzka	Front	Bok
SBC 6	1.5	3.0 – 3.5	1.0	1.5
SBC 8	1.5	3.5 – 4.5	1.5	1.5
SBC 10	1.5	4.0 – 5.0	1.5	1.5
SBC 12	1.5	4.0 – 5.0	2.0	1.5
SBC 16	1.5	5.0 – 6.0	2.0	1.5
SBC 6+6	1.5	4.0 – 5.0	2.0	1.5
SBC 8+8	1.5	5.0 – 6.0	2.0	1.5
SBC 10+10	1.5	5.0 – 6.5	2.0	1.5
SBC 12+12	1.5	5.0 – 6.5	2.0	1.5
SBC 30	1.5	7.0 - 9.0	2.0	1.5

MAIN GAS CONNECTION

The radiator can be fed by different sort of gas, so before connection you have to ensure that fed gas is the same as it is written on rating plate. Every radiator should be equipped on cut-off ball valve and flexible gas connection. You should check if gas pressure is appropriate adjusted, to avoid damage when using gas pressure is too high.

1. **MODELS SBC:** diameter of flexible gas connection to SBC heater:

Device type SBC is equipped in pressure reducer (max 50 mbar) and in holes for manometer after and before reducer to measurement pressure. **Regulator is not installed on heater. You should behave according to the instruction to connect the reducer to heater after taken it out from a box.**

NOTICE: All devices are tested with using type of gas which is written on rating plate.

Electric connection (only for models SBC)

The heater needs electrical feed with voltage 230V/50Hz. Flame control valve is located on electric valve

Devices should be also equipped in control locker **STMP** to switch on and switch off the heater, or control locker **STMP-P** to switch on and switch off the heater automatically. Control locker is not delivering with heater by **Sun Beam**.



rys. 3

To proper electric connection of heater you should do it according to instruction or rating plate.

To electrical connect 3-phase according to description on nozzle you have to toll constrictors:

L1: duct

N: reserve duct

● **ground**

Important:

to avoid problems it is important to uphold polarity of system F/N with advisable polarity of connection. To proper function heaters SBC and safety using you need a ground.

ROOM VENTILATION

IMPORTANT:

Gas installation must be made according to regulations in force, and gas heaters must be installed in ventilated rooms.

Products of gas burning stay in room where the radiator is installed.

Check if the room where the radiator is working, is well ventilated;

To provide suitable ventilating system, you should make holes in external walls or provide mechanical ventilation. Capacity of ventilation must be calculated according to local requirements.

Example calculation of ventilation

$$\mathbf{V_{air} = \Sigma Q_{nb} \times L}$$

where:

V_{air} - volume air to exchange

ΣQ_{nb} - total heating power installed in room

L - exchange factor (≥ 10 m³/h/kW)

The heaters can not be installed in:

1. Bedrooms, rooms with showers and bathrooms.
 2. In rooms lower than 12m³
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SERVICE

SBC models by Sun Beam needs spacial service, however a few easy operations provide better efficiency and longer activity

If the radiator is installed in polluted room Sun Beam recomendation is to clen a burner by blow through with compressed air in direction of gas inlet.

If the heater is working, switch it off and wait untill it will get cold before blow through.

After finish heat season it is recomendaded to review all parts of radiators to avoid improper functioning in next season.

IMPORTANT: each service must be made by trained representatives of installatons company or directly by Sun Beam company. Before review you need to be sure that the devices is cut off from gas and power feeding.

Description of functioning SBC models

Devices are automatically equipped in flame control sensor, which is in separate box and electric valve feeded by a duct with voltage 230V/50Hz.

- After switch on the heater, it starts sparking and the electric valve is opening in the same time
- The sensor monitoring the ignition and when heater is ignited, sparking is switch off
- In case when the flame will be detected, after 20 sec the radiator will be locked. Restart the heater by cut off electric power for min 20 sec, and you have to repeat start up.
- To switch off the heater, you have to cut off the device from electric power by a switch located in controller

Switching device:

1. Open gas valves gas,
2. Switch on entire power button panel
3. Set thermostat device to the desired temperature
4. Press the power button for selected radiators.

Turn off the device

1. Set room thermostat to the minimum,
 2. Turn off power for individual radiators
 3. Turn off main power switch
 4. Close the gas valve from the device.
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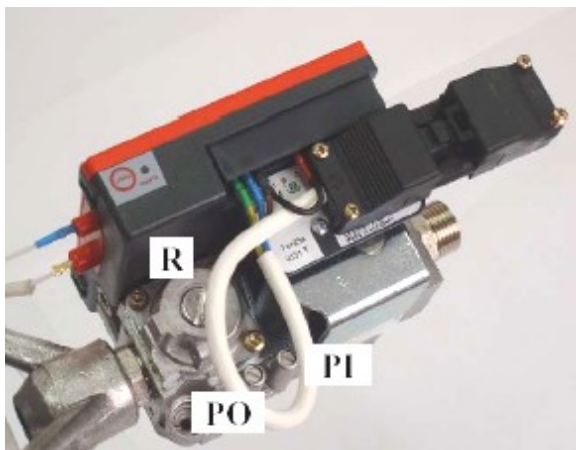
If all devices must be switched off for a long time, in addition, we recommend disconnecting the power supply from the control panel and close the main gas valve

PRESSURE REGULATION

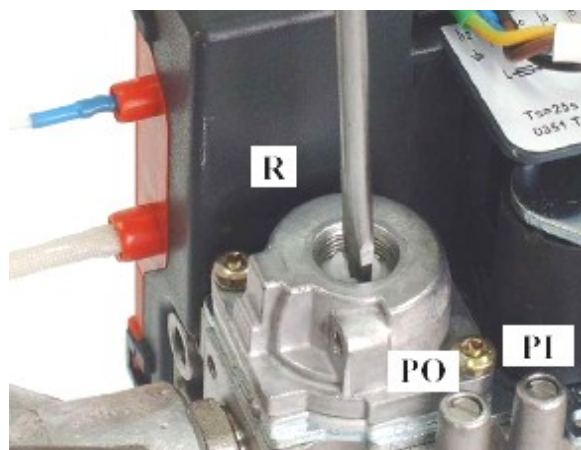
Important:

before first startup you need to check if the gas pressure is proper as it is written on rating plate. you need to behave according to instruction below:

1. Unscrew a bolt of electric valve (PO) and put in proper manometer.
2. Remove hood from pressure regulator (R), and turn to time when value of pressure will be the same as it is written on rating plate
3. Screw out manometer and screw in a bolt
4. Cover a regulator (R) by a hood and tighten it.



rys. 4a



rys. 4b

EXCHANGE NOZZLES

All our devices are tested with natural gas methane or liquid gas before realization an order Pressure characteristic and type of gas using during test are always written on rating plate located on radiator in visible place.

In case when feeding gas is different you need to order supplementary suite of exchanging nozzles, given model of radiator and type of gas. Exchange nozzles must be made by trained representatives.

TROUBLESHOOTING

DEFECT	REASON	SOLUTION
1- Radiator lights up, but exploder sparking and blocking device.	a- Flame sensor is located to close or to far from radiate surface b- generator is damaged	a- Check if flame sensor is close enough to radiate surface (4-5mm). b- Check polarity F/N ground
2- Burner of radiator works poorly.	a- Insufficient quantity of gas b- To low pressure of gas	a- Check pipeline diameters b- Check if pressure meet a standards written on rating plate
3- Burner works with higher power.	a- To high pressure of gas b- The burner or plate is dirty c- Dirty or damaged plate	a- Check gas pressure and reduce it by properly configuration pressure regulator b- When the burner is cold blow it through and a radiate surface by compressed air c- Exchange plates
4- The radiator can not switch on.	a- No electrical power b- No power to electric valve c- Electric valve has feed but there are problems with coil.	a- Check voltage on connection b- Exchange duct c- Exchange coil
5- Electric valve opening but the radiator is not switching on, and after 20 sec the heater is blocked.	a- Starting electrode is not sparking because of wrong lenght between elctrode and a plate surface b- Electric damage c- Starting electrode sparking because ceramic non-conductor has crack.	a- Shift electrode closer or further from metal side Proper lenght – 3-4mm b- Check electrode connections c- Exchange electrode and a sensor
6- Heater switch on, but	a- Air in gas duct	a- Try again after 20/30 sec

DEFECT	REASON	SOLUTION
electrode not sparking and blocking device.	b- Insufficient quantity of gas	b- Check if there is no other problems.
