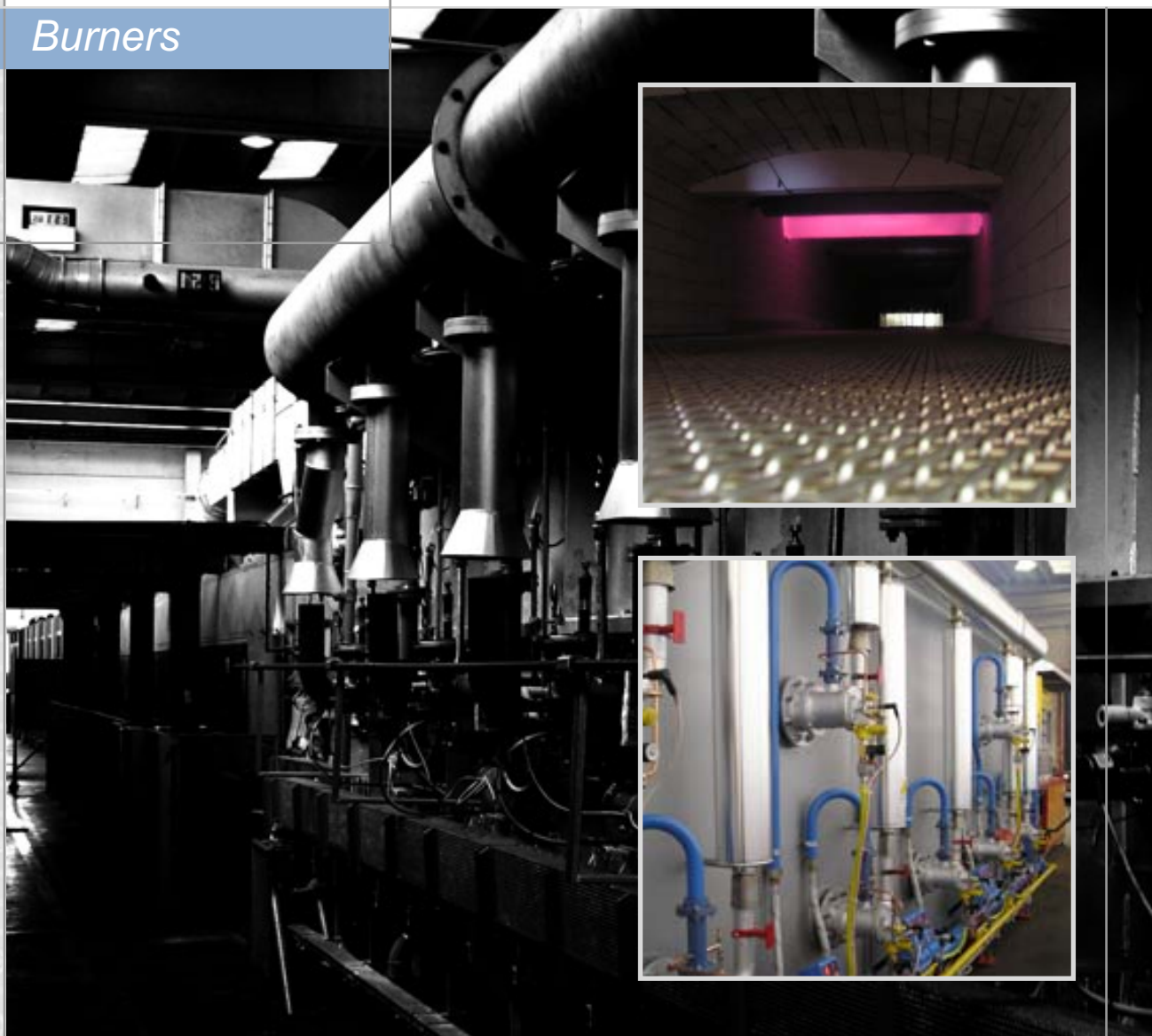


Burners



Self-recuperative burners
high speed radiant tube

REKO-SIK-RT (E3901RT rev. 03 -24/04/2009)



GENERAL WARNINGS:



■ All installation, maintenance, ignition and setting must be performed by qualified staff, respecting the norms present at the time and place of the installation.

■ To avoid damage to people and things, it is essential to observe all the points indicated in this handbook. The reported indications do not exonerate the Client/User from observing general or specific laws concerning accidents and environmental safeguarding.

■ The operator must wear proper DPI clothing (shoes, helmets...) and respect the general safety, prevention and precaution norms.

■ To avoid the risks of burns or high voltage electrocution, the operator must avoid all contact with the burner and its control devices during the ignition phase and while it is running at high temperatures.

■ All ordinary and extraordinary maintenance must be performed when the system is stopped.

■ To assure correct and safe use of the combustion plant, it is of extreme importance that the contents of this document be brought to the attention of and be meticulously observed by all personnel in charge of controlling and working the devices.

■ The functioning of a combustion plant can be dangerous and cause injuries to persons or damage to equipment. Every burner must be provided with certified combustion safety and supervision devices.

■ The burner must be installed correctly to prevent any type of accidental/undesired heat transmission from the flame to the operator or the equipment.

■ The performances indicated in this technical document regarding the range of products are a result of experimental tests carried out at ESA-PYRONICS. The tests have been performed using ignition systems, flame detectors and supervisors developed by ESA-PYRONICS. The respect of the above mentioned functioning conditions cannot be guaranteed if equipment, which is not present in the ESA-PYRONICS catalogue, is used.

DISPOSAL:



To dispose of the product, abide by the local legislations regarding it.

GENERAL NOTES:



■ In accordance to the internal policy of constant quality improvement, ESA-PYRONICS reserves the right to modify the technical characteristics of the present document at any time and without warning.

■ It is possible to download technical sheets which have been updated to the latest revision from the **www.esapyronics.com** website.

CERTIFICATIONS:



EN746-2

The products manufactured by ESA-PYRONICS have been created in conformity to the **UNI EN 746-2** Norms: Equipment for industrial thermal process - Part 2: Safety requirements for combustion and the movement and treatment of combustible elements. This norm is in harmony with the Machine Directive **98/37/CE**. It is certified that the products in question respect all the requirements prescribed by the above mentioned Norms and Directives. These have been designed, produced, controlled and tested in accordance to the company's internal procedures for quality control, certified in conformity with the **UNI EN ISO 9001** Norm by DNV Italia s.r.l.



The products conform to the Russian market requirements according to the **GOST** and **GOSGORTEKHNAZDOR** certification.

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The REKO-SIK-RT are self-recuperative gas burners for direct heating. These burners use heat from the combustion exhaust fumes to pre-heat the combustive air. According to their size and utility conditions, this type of burner guarantees a substantial decrease in consumption compared to traditional burners.

APPLICATIONS

- Furnaces with fibre covering.
- Ceramic or treatment furnaces.
- Tunnel or chariot furnaces.
- Indirect heating applications and furnaces.

The REKO-SIK-RT technology is applied to different radiant tube configurations (in steel or silicon carbide).

1 - Straight tube with silicon carbide internal flame tube lined up in modules. This has been done to allow for longer lasting internal modules and excellent temperature distribution on the radiant tube. Moreover, in case of rupture, it is possible to replace only the damaged module, thus saving considerably in terms of costs.

2 - P or double P tubes, where the needs of ample irradiant surfaces integrate with a burner that has an incorporated recuperator.



F3901RT03

CARATTERISTICS

GENERAL:

- Capacity: from 15 to 150 kW
- Functions with various types of gas: CH₄/LPG/Propane/etc.
- Maximum furnace temperature: 1250 °C
- Burner air inlet pressure: 50 mbar
- Burner gas inlet pressure: 50 mbar
- Inlet air temperature: environment
- Preheated air temperature: up to 750°C
- Low NO_x e CO emissions
- Easily replaceable electrode.
- Separate air and gas inlets, nozzle mixers no flashback.

MATERIAL COMPOSITION:

- Exhaust air-inlet body: AISI304
- Gas collector pipe: Cast iron G25
- Exchange tube: AD-SiC
- Combustion head: AISI310S/INCOLOY601
- Furnace wall spacer: AISI310S/AD-SiC
- Surface treatment: galvanization, steel pickling, high temperature painting



F3901RT04

CAPACITY PARAMETERS

The REKO-SIK-RT ignition takes place through a high voltage discharge, which is carried out by a WAND electrode. The flame is detected via a uv-scanner (not inclu-

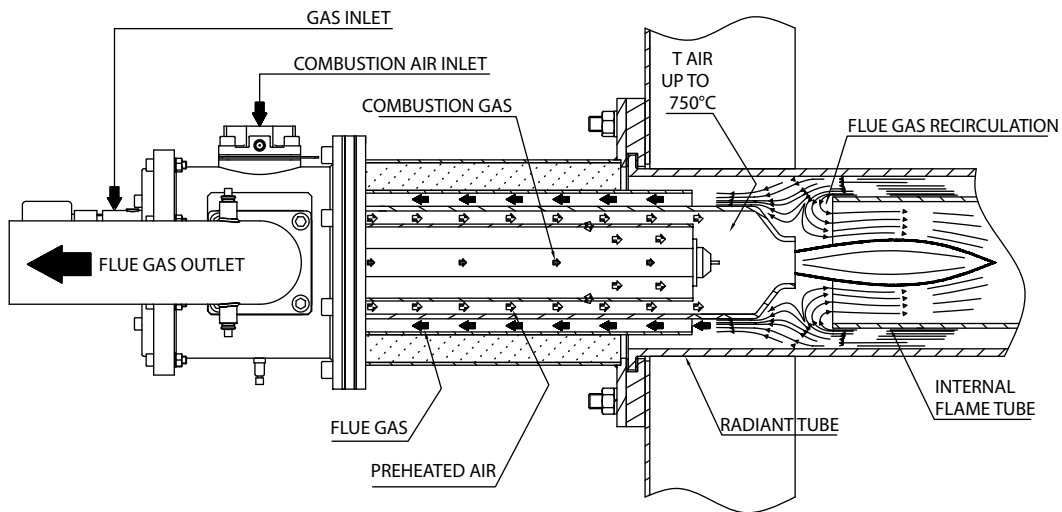
ded). The adoption of flame controls is highly recommended in all systems operating at temperatures below 750°C (UNI EN746-2 Norm).

Model	Capacity kW	Flame velocity mm	Ignition	Detection
REKO-0-SIK-RT	15	120	WAND	UV-2
REKO-1-SIK-RT	25	120	WAND	UV-2
REKO-2-SIK-RT	50	120	WAND	UV-2
REKO-3-SIK-RT	80	120	WAND	UV-2
REKO-4-SIK-RT	150	110	WAND	UV-2

DESCRIPTION

The REKO-SIK-RT burners use the exhaust fume temperature to preheat the combustive air, thus saving more

energy and reducing atmospheric pollution.



D3901RT01

The choice of materials has been made to perfect the duration and performance of the burner. Furthermore, the stainless steel air-exhaust inlet body assures high resistance against heat and oxidation. The heat exchange element is made of silicon carbide and its special confor-

mation allows better heat transfer from the combustion products to the combustive air. This allows the burner to be used at maximum chamber temperatures of up to 1250°C in indirect heating conditions.

Multistage combustion technology, together with the recycling of combustive gases, guarantees low NO_x and CO emissions, despite the preheating air temperature value of up to 750°C. The REKO-SIK-RT are compact burners with reduced weight and size. They have separate gas and air inlets, nozzle mixers (no flashbacks) and include:

micrometric gas adjuster, spark electrode, peepsight, calibrated inserts, gas calibrated orifice flow meter and furnace wall spacer. The suggested functioning is with MIN/MAX or ON/OFF and the setting is simplified by special pressure inlets on the air and gas side.

BURNER PERFORMANCES

The flame capacity, length and velocity concern natural gas burners (8600 Kcal/Nm³), placed in a combustion chamber with zero pressure and at sea level, which can function with 10% of excess air.

- ON/OFF functioning
- Chamber temperature 850°C
- NO_x < 350 mg/Nm³ [O₂ = 3% ref.]

MAXIMUM CAPACITY

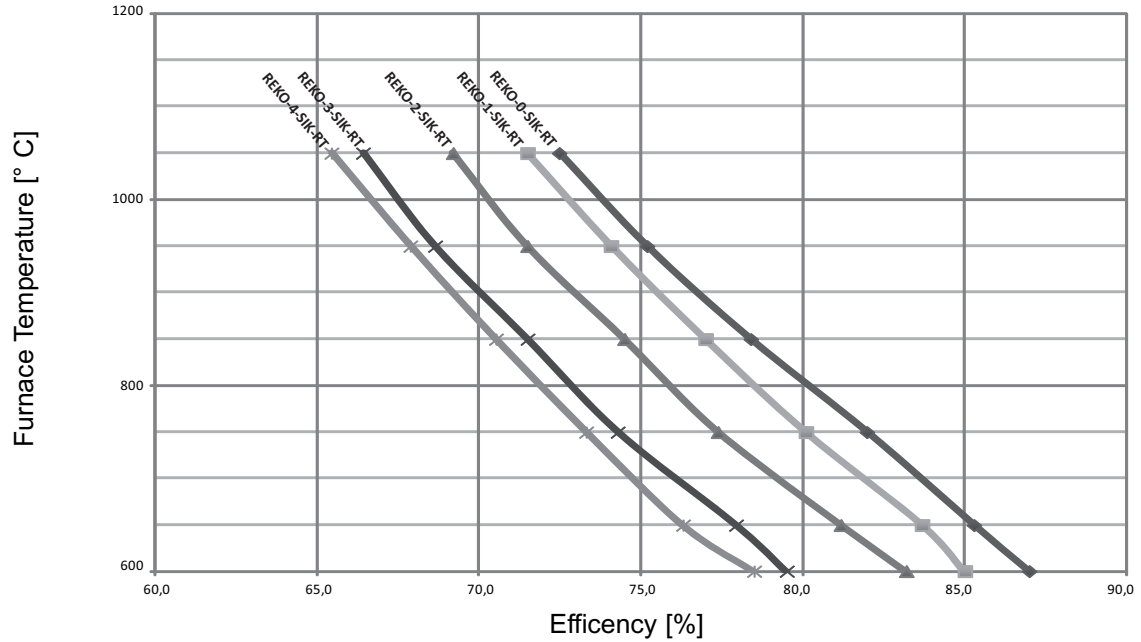
Radiant tube application			Burner model				
			REKO-0-SIK	REKO-1-SIK	REKO-2-SIK	REKO-3-SIK	REKO-4-SIK
Maximum power	SiC recuperator length	[mm]	540	605	630	635	635
	Burner capacity (2% O ₂)	[kW]	15	25	50	80	150
	Burner air flow	[Nm ³ /h]	16.5	27.5	55	88	165
	Gas flow	[Nm ³ /h]	1.5	2.5	5.0	8.0	15.0
	Burner air inlet pressure	[mbar]	50	50	50	50	50
	Δp flange gas measurement	[mbar]	10	10	10	10	10

MINIMUM SETTING (BURNER OFF)

Radiant tube application			Burner model				
			REKO-0-SIK	REKO-1-SIK	REKO-2-SIK	REKO-3-SIK	REKO-4-SIK
Min. pow.	Burner air flow	[Nm ³ /h]	7.5	12.5	24.5	40.0	73.5
	Burner air inlet pressure	[mbar]	10	10	10	10	10

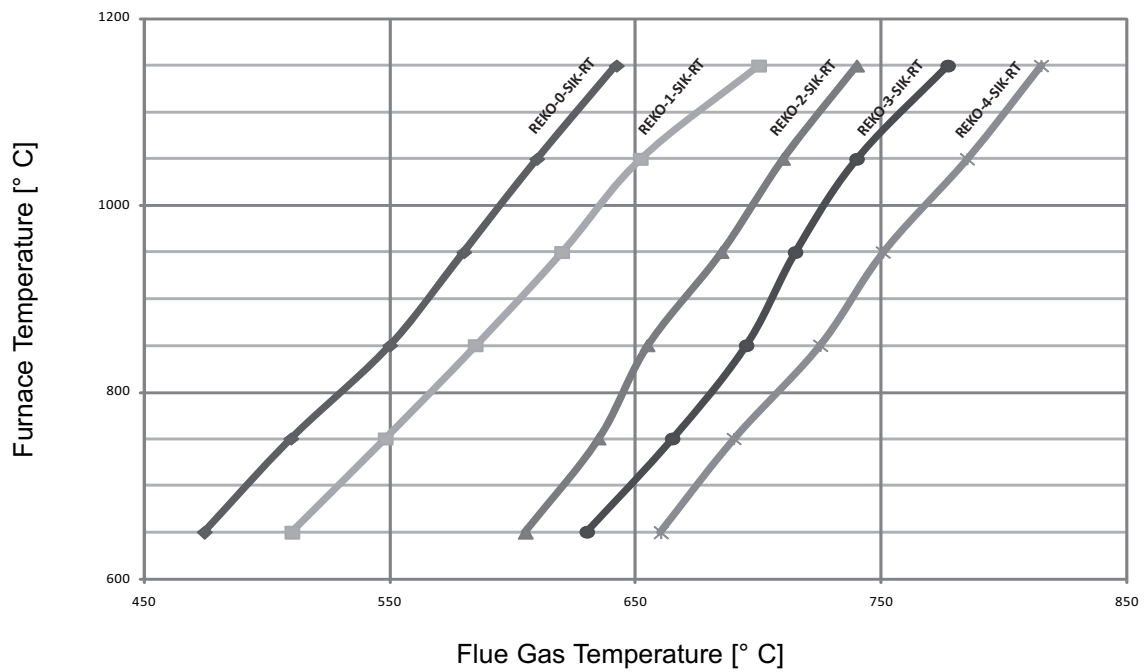
EFFICIENCY TABLES (TEST DATA)

Permanent operation (100% Fire)



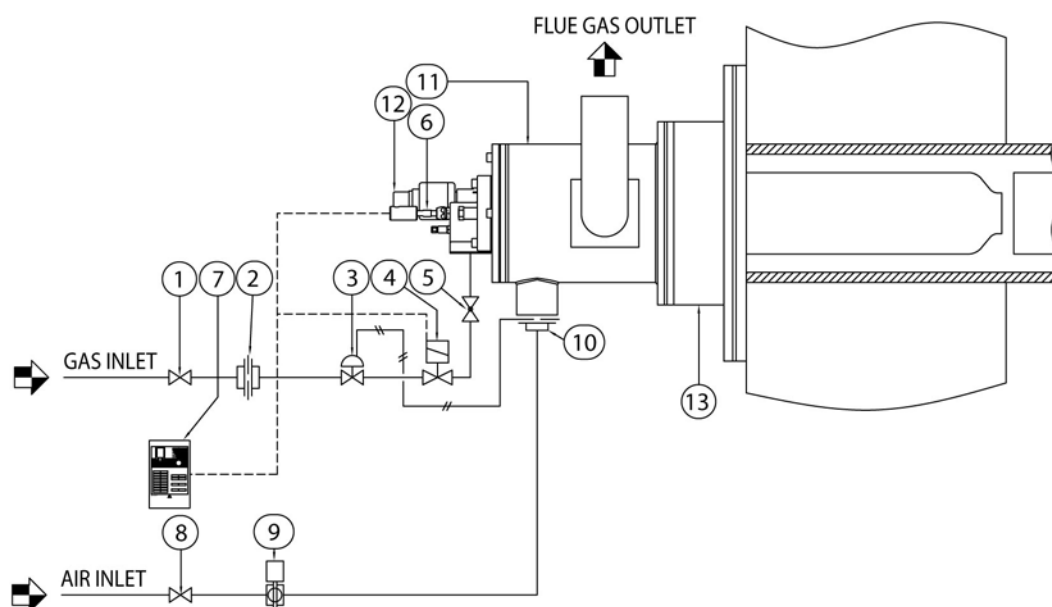
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Permanent operation (100% Fire)



G3901RT02

FLOW SCHEME



D3901RT02

Pos.	Description	Included	Not Included
1	Gas ball valve		X
2	Gas calibrated flange	X	
3	Pressure regulator		X
4	Safety solenoid valve		X
5	Throttle valve	X	
6	Ignition electrode	X	
7	Flame control		X
8	Air ball valve		X
9	Motorized regulation valve		X
10	Combustion air orifice flow meter	X	
11	Self-recuperative burner	X	
12	Uv-scanner for flame detection		X
13	Furnace wall adapting spacer		X

TECHNICAL NOTES FOR THE CHOICE OF RADIANT TUBES

The radiant tubes made up of lined up modules for the REKO-SIK-RT series of self-recuperative burners are used in indirect heating applications where the fumes of the burner cannot come into contact with the furnace atmosphere. They are composed of an external tube and an internal concentric tube in SiC made up of modules with predefined lengths. The burner is assembled concentrically to the system. The special internal SiC tube design, together with the high velocity of the combusive products exiting the burner, guarantees:

- More uniform surface temperature along the length of the tube.
- Reduced NOx e CO emissions as a result of the strong recirculation of the combusive products.
- Thermal exchange in high countercurrent between products and air combustion.
- Greater efficiency, reduced consumption (up to 35%) compared to traditional burners.
- External radiant tube thermally less stressed, thus advantageous for its average lifespan.
- Easier replacement of internal SiC modules for rapid and less expensive maintenance.

CHARACTERISTICS

The choice of straight radiant tubes can be made between different sizes with different diameters and thickness.

- External diameters from Ø 80 to Ø 210 (other sizes available on request).
- Lengths according to Client's request.
- Inside in ceramic and outside metallic for working temp. up to 1000°C.
- Outside and inside both ceramic for temp. up to 1250°C (allow dissipation for about double the unit area compared to metallic tubes of equal dimensions).

RADIANT TUBES/INTERNAL MODULES

ESA PYRONICS suggests two types of assembly schemes:

- Metallic external radiant tube with internal flameguard tube in ceramic modules.
- Ceramic external radiant tube with internal flame guard tube in ceramic modules.

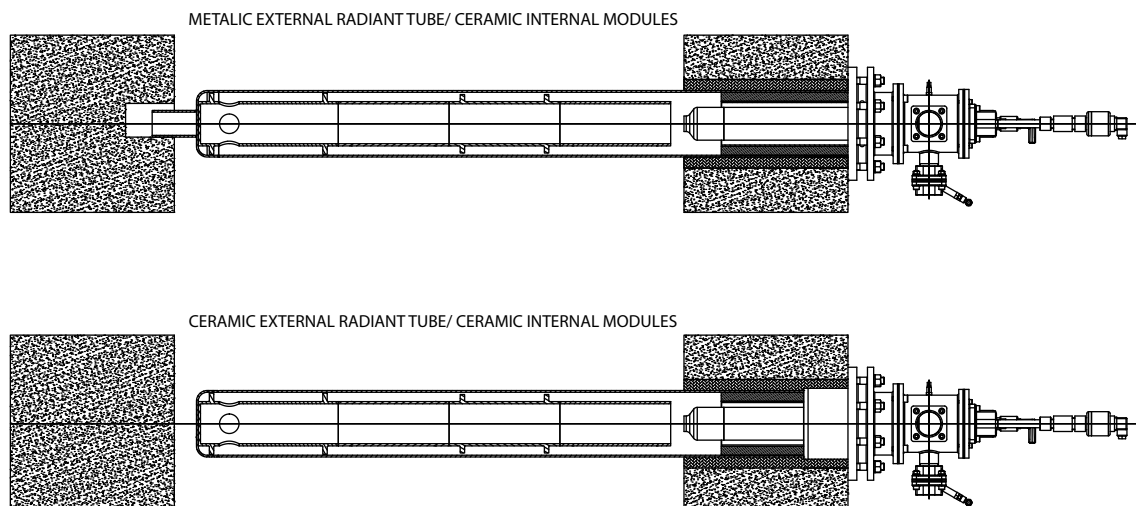
METALLIC DESIGN: length between 1000 and 3000mm

CERAMIC DESIGN: length between 1000 and 2400mm

All types can be used in both horizontal and vertical assemblage. In the metallic design, with tubes that are longer than 1 metre, provide the final part of the radiant tube with a support coupling so that the actual tube is supported by a metallic or ceramic bracket that has a low friction coefficient made in the wall that lies opposite the housing wall (leaving open space to compensate thermal dilation)

INTERNAL CERAMIC TUBE CHARACTERISTICS

The internal ceramic tube is made of standard length AD-SiC modules of 250mm and a final adaptable module (with a length that varies from 150 to 400mm, closed on the end for greater protection of the bottom of the metallic radiant tube). Both modules are provided with two rows of centering elements for an adequate housing inside the radiant tube. The centering pins have been built directly inside the mould, to avoid glueing that can provoke accidental detachment during operation. They are constructively robust and resistant to the thermal and mechanical stress that their application requires.



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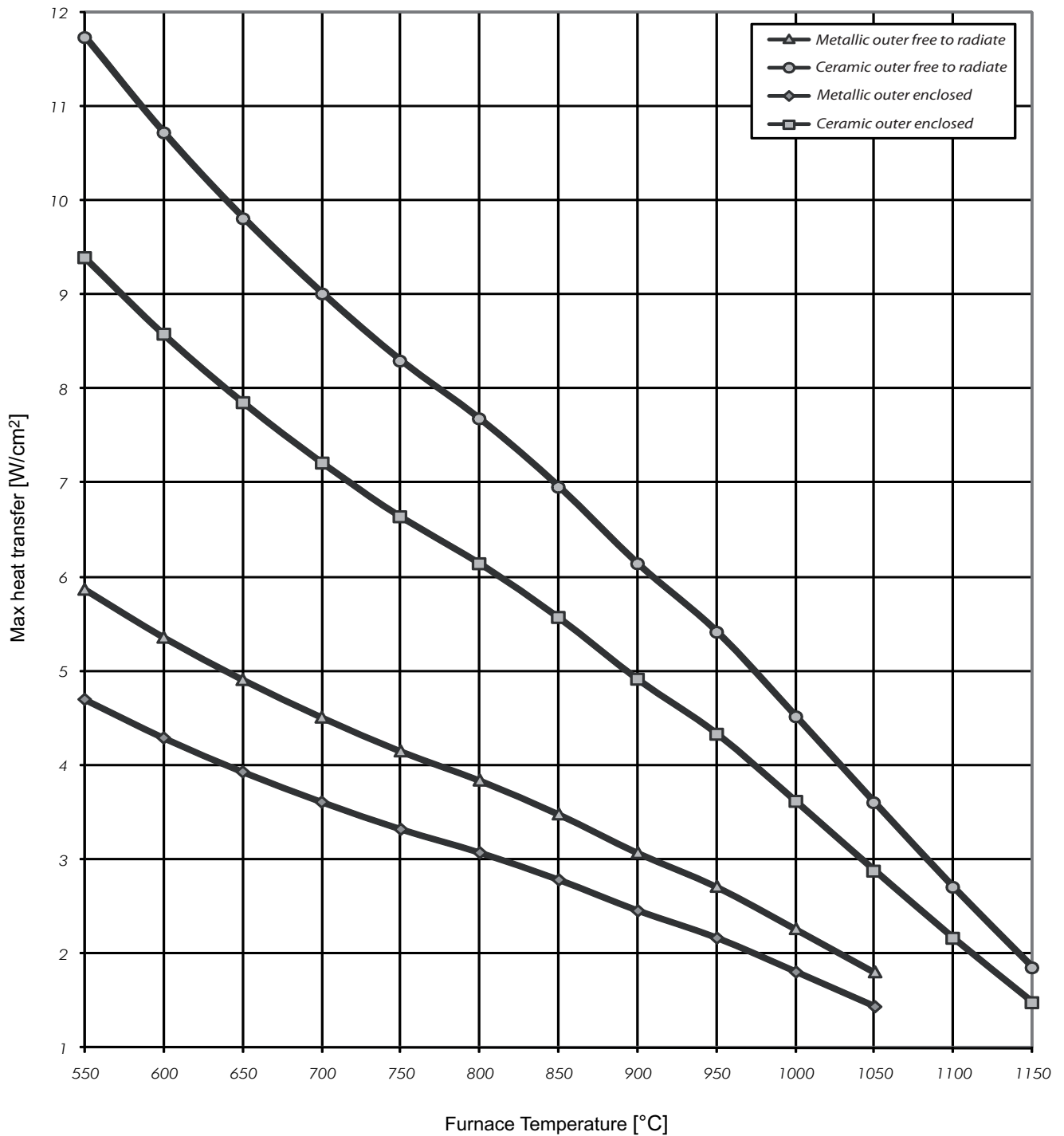
RADIANT TUBE AND INTERNAL MODULE DIMENSION TABLE

The table contains the standard measurements which are mainly used. Other measurements available on request.

The burner sizes with their appropriate radiant tube dimensions are also present.

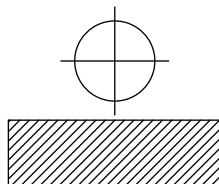
Radiant tube dia. (mm)	Suggested models	SiC Moduels dia. (mm)	SiC Module lenght (mm)	SiC Terminal module lenght [min/max] (mm)
80	REKO-0-SIK-RT	58	250	150/400
90	REKO-0-SIK-RT	64		
114	REKO-0-SIK-RT	80		
	REKO-1-SIK-RT			
130	REKO-1-SIK-RT	90		
	REKO-2-SIK-RT			
152	REKO-1-SIK-RT	106		
	REKO-2-SIK-RT			
170/180	REKO-2-SIK-RT	121		
	REKO-3-SIK-RT			
190	REKO-2-SIK-RT	131		
	REKO-3-SIK-RT			
200/210	REKO-3-SIK-RT	140		
	REKO-4-SIK-RT			

RADIANT TUBE DISSIPATION

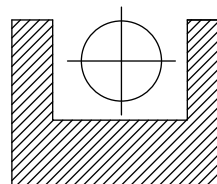


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FREE TO RADIATE



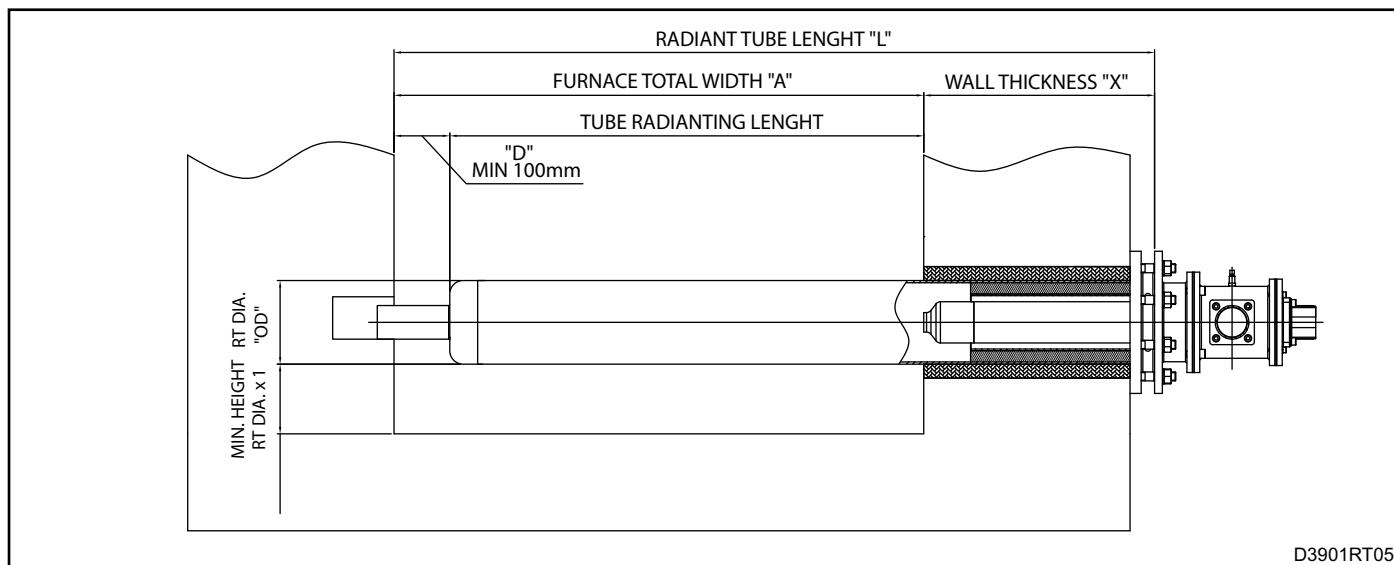
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D3901RT04

SIZING CHART FOR REKO-SIK-RT RADIANT TUBE AND BURNER

Client	
Total width of furnace "A" [mm]	
Wall Thickness "X" [mm]	
Radiant tube "L" = "A" + "X" [mm]	
Furnace temperature [° C]	



Radiant tube installation (see drawing pag. 10)	<input type="checkbox"/>	Free tube
	<input type="checkbox"/>	Crowned
Radiant tube external material	<input type="checkbox"/>	Metallic
	<input type="checkbox"/>	Ceramic

MAX COEF. THERMAL FLOW see table. pag. 10		W/cm ²
RADIANT TUBE EXTERNAL DIAMETER "OD"		mm

Total surface area "S" =
$$\frac{“OD” \times 3.14 \times (A-D)}{1.000.000}$$
 m²

Net tube capacity =
$$“S” \times \text{FLOW} \times 10$$
 Kw

Maximum burner capacity =
$$\frac{\text{net tube capacity}}{0.7}$$
 Kw

Fuel

☐ Natural gas

☐ Lpg

☐ Other

WARNINGS

- - The REKO-SIK-RT burner series is intended for fixed installations. If mobile installations are needed (bell furnaces, etc...) it is necessary to preventively take into consideration the possibility of damage to hoses in silicon carbide, which is determined by the movement of the actual furnace.
- - The burner must always be turned on at minimum power, using slow opening regulation valves, facilitating ignition and reducing exit overpressure.
- - The passing from minimum power to maximum power must always be done gradually and not instantaneously. To do this, the use of two-phase air modulating regulation valves is suggested.
- - For all applications at low temperature (up to 750°C), burner ignition and the control of solenoid gas valves must be accomplished using a certified burner control device.
- - To avoid possible damage to the burners, make sure that the blower does not send them hot or foul air (from combustion products, oils, solvents or other). To avoid this from occurring, install the blower or the air suction duct outside the establishment and far from the exhaust pipes.
- - Check that the power lines are properly connected after the installation. Before turning on the burner check the correct combustive air and fuel gas settings (pag. 5).
- - The burner can only work within the indicated power range. The functioning with less or more power can compromise the correct functioning and life span of the actual burner. In this case the general warrantee conditions will not be applicable anymore and ESA-PYRONICS will not be held responsible for any damage caused to persons or things.
- - If there is trouble with other devices during the burner start up phase, use the connector with anti disturbance filter for the high-tension (HT) cable connection of the ignition electrode.
- - Avoid burner ignition close to each other so as not to heat the ignition command system devices (solenoid valves and transformers). Prewash time lapse + first safety time lapse + min. of 5 sec. = time lapse between one ignition and another. (however, do not attempt more than 2 ignitions during a 30sec. time lapse).
- - Make sure the power supply is TURNED OFF when intervening on the burner and its devices. In case of burner malfunctioning, follow the indications in the 'Maintenance' chapter of the present manual or contact ESA-PYRONICS assistance.
- - The installation of protective elements (e.g. perforated metallic grids) is suggested to avoid operators accidentally coming into contact with the burner chimney's high temperature surface.
- - Any modification or repair done by third parties can compromise the application safety and automatically cause the general warrantee conditions to expire.

INSTALLATION

For the REKO-SIK-RT burner series installation, carefully follow the instructions below:

- 1** - Place burners far from heat sources and products such as: liquids, solvents or corrosive gases.
- 2** - Make sure that the sizes and interaxes of the feeding and exhaust pipes correspond to the specifications in chapter 'Overall Dimensions' page 21 & 22.
- 3** - After having installed the radiant tube on the wall (**pos. 01**) one by one insert the internal final module (**pos.02**) and then the internal standard modules (**pos. 03**) making sure that they are all correctly pushed into each other on the bottom of the radiant tube. Be careful not to damage the ceramic elements that make up the modules.
- 4** - Insert the connecting radiant tube flange and the ceramic fibre gasket (**pos. 04**).
- 5** - Insulate the furnace wall spacer (where present) with a ceramic fibre mattress, according to the indications and drawings in the ' Overall Dimensions' chapter and assemble it against the furnace wall.
- 6** - Insert the burner (**pos. 06**) into the spacer, interposing the ceramic fibre gasket (**pos. 08**), making sure you have checked the correct positioning of the air and gas inlets as well that of the exhaust pipe. During this operation be careful not to damage the silicon carbide tubes (**pos. 05**). Fasten screws or fixing bolts (**pos. 09**) and lubricate the threads with MOLIKOTE P74.

7 - Fix the exhaust pipe to the chimney, (**pos. 07**). The use of natural draught open hoods is recommended to avoid the exhaust fumes from remaining under pressure, causing stress conditions or burner malfunctioning.

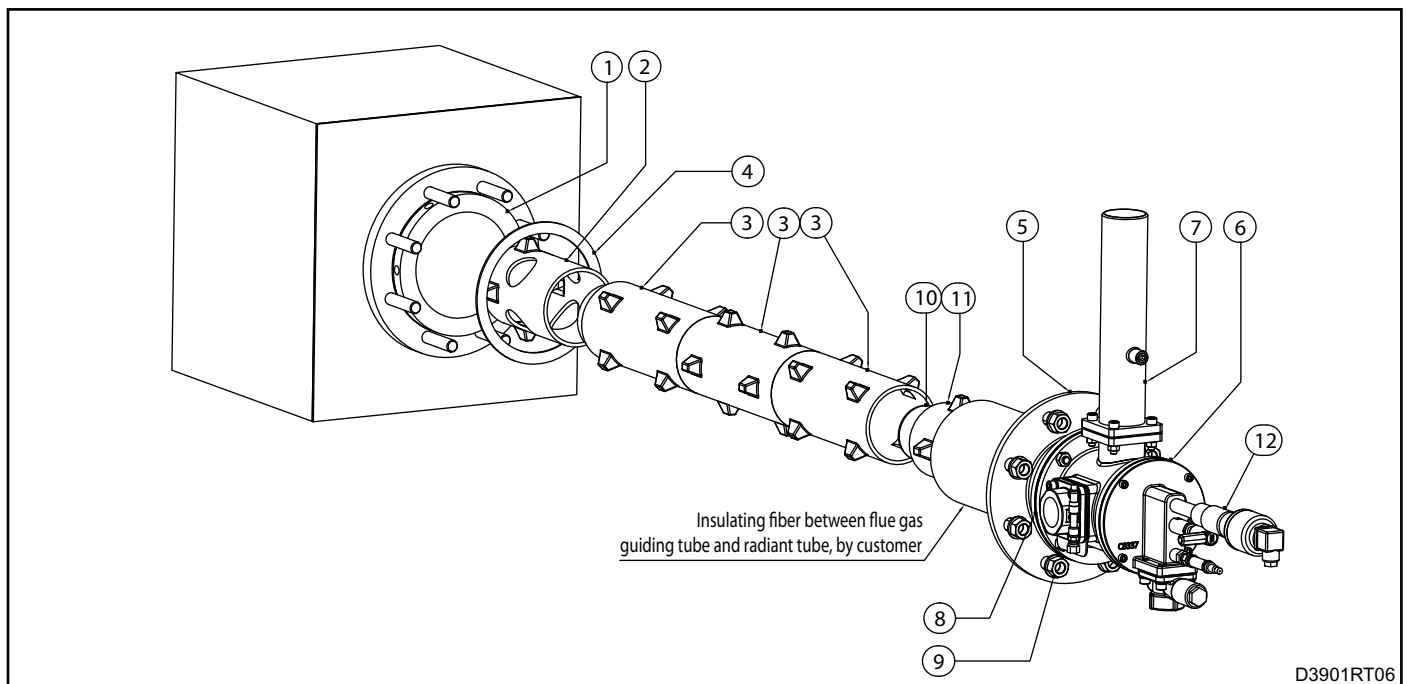
8 - Connect the combustive air and fuel gas inlet pipes, interposing, if possible, AISI dilation joints.

9 - In the cooling inlet, connect an 8mm Ø tube with relative fitting to the detection scanner (**pos. 12**). This tube must conduct a fixed air flow for sensor cooling.

10 - Connect electrical wiring to ignition electrodes and to the detection scanner, being careful to make the conductors pass as far away as possible from heat sources.

11 - Make sure that the burner body and all its connected metallic elements are correctly connected to the plant's earthing system with appropriate conductors.

12 - The connection cable of the ignition electrode transformer must be specifically for high tension and not screened. It must not be more than about 1 metre long; otherwise the ignition transformer must be placed near the burner. The HT cable must be placed far from power supply cables and not in metallic conductors. Ideally it should be left in open air. For more details, consult the technical data sheet regarding the ignition transformers E5004.



START UP - SETTING

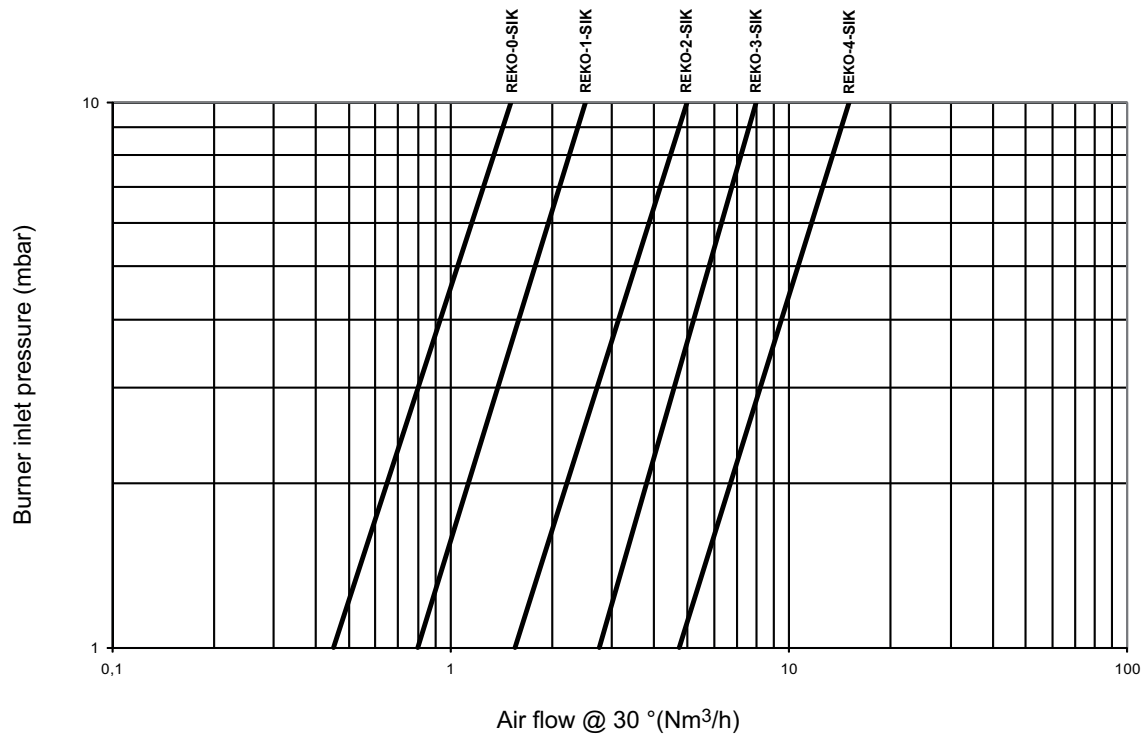
The procedures indicated in the following chapter must be carried out by expert technicians. The non-observance of the instructions given can provoke dangerous conditions.

- 1** - Check that the combustion air pressure exiting the blower and the combustive fuel pressure are both within the allowed range.
- 2** - Adjust the working pressure and the safety device pressure of the combustion plant, whether there is one per burner or one for the whole plant i.e. gas pressure reduction gear, block valve, relief valve, pressure switches etc. Simulate the intervention of all the safety devices including the intervention of the safety over temperature, checking that the fuel safety block devices act properly.
- 3** - Place the air regulation valve in the maximum opening position and adjust the pressure referring to the values indicated in the 'Burner Performances' chapter for the maximum power supply - pag.05 according to the maximum power.
- 4** - Place the air regulation valve in the minimum opening position and adjust its opening to obtain (in burner inlet) the relative minimum power pressure.
- 5** - Activate the burner control device and attempt the igni-

tion until the burner switches on. While attempting to ignite the burner, act on the gas adjustment valve and, starting from the totally closed position, open it gradually until the burner ignites.

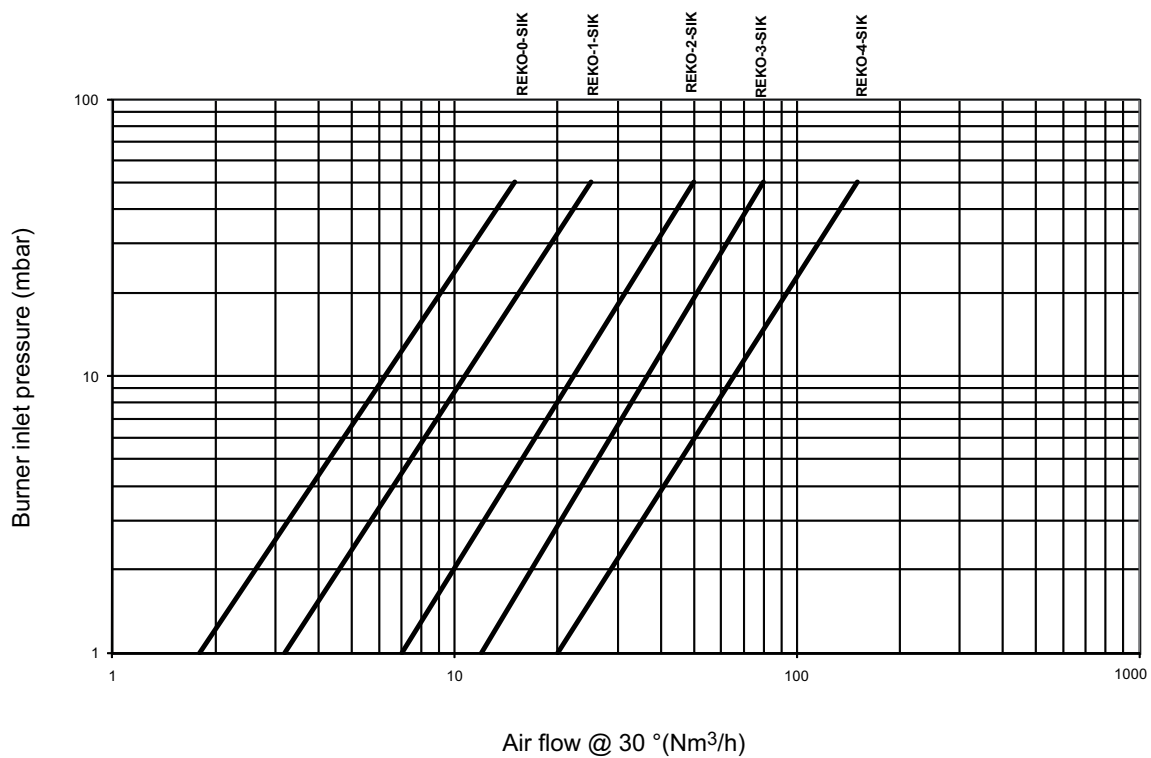
- 6** - Fully open the air regulation valve and adjust, via the gas adjustment valve, the maximum fuel capacity, checking the differential pressure created on the calibrated gas flange. The setting at minimum value is obtained with the air valve at its minimum opening, acting on the regulation screw which is placed inside the pneumatic adjuster.
- 7** - Double check that, at minimum and maximum power, the burner inlet pressures correspond to the values in the 'Burner Performances' chapter. These values may differ depending on whether the burner is on or off.
- 8** - With the furnace set temperature, analyse the combustion products on the burner chimney, with a portable analyser, and if necessary, adjust the air and gas pressures and flow (O_2 refers to a max capacity of 2÷4%, minimum capacity of 3÷6%).
- 9** - Repeatedly attempt ignition at minimum burner power, with maximum amplitude, to check the ignition reliability and flame stability during the adjustment.

NATURAL GAS CAPACITY CHART - REKO-SIK-RT



G3901RT04

AIR CAPACITY CHART - REKO-SIK-RT



G3901RTF05

GENERAL MAINTENANCE PLAN

Operation	Advised time	Notes
High tension electrode connection	annual	check integrity of outer plastic and oxidization of internal electrode terminal.
Ignition electrode	annual	replace if the Kantal terminal is worn.
Fume guiding tube spacer integrity	two yearly	at every maintenance check with furnace turned off, from the inside, make sure there are no cracks in the refractory material.
SiC heat exchanger integrity	two yearly	at every maintenance check with furnace turned off, from the inside, make sure there are no cracks in the refractory material.
Integrity of internal SiC modules	two yearly	check that there are no macroscopic cracks or damage on the surface.
SiC radiant tube integrity (metallic)	annual	rotate the tubes by means of the appropriate holes.
Cleaning of uv-scanner watch glass	every semester	reduce to quarterly check in dusty environments.
Uv-scanner replacement	10.000 h. of functioning	in any case every two years.
Chimney (**)	annual	to be done only when the furnace is off and cold.
Replacement of gas side gaskets (*)	annual	see note.
Burner settings	annual	repeat the steps in the 'IGNITION AND SETTING' section on page 11.
Fume analysis	annual	with furnace on.

NOTES:

(*) it is suggested that the gaskets on the gas side are replaced after every disassembly of the gas feeding line.

(**) use high temperature gaskets

ORDINARY MAINTENANCE

For correct dismantling and better maintenance of the REKO-SIK-FF burners, meticulously follow the instructions below with the plant turned off.

CLEANING OF UV-SCANNER WATCH GLASS

1 - Check that the burner control device is not connected.

2 - Disconnect power supply to the uv-scanner (**pos. 01**) and the cooling line (where present **pos. 07**).

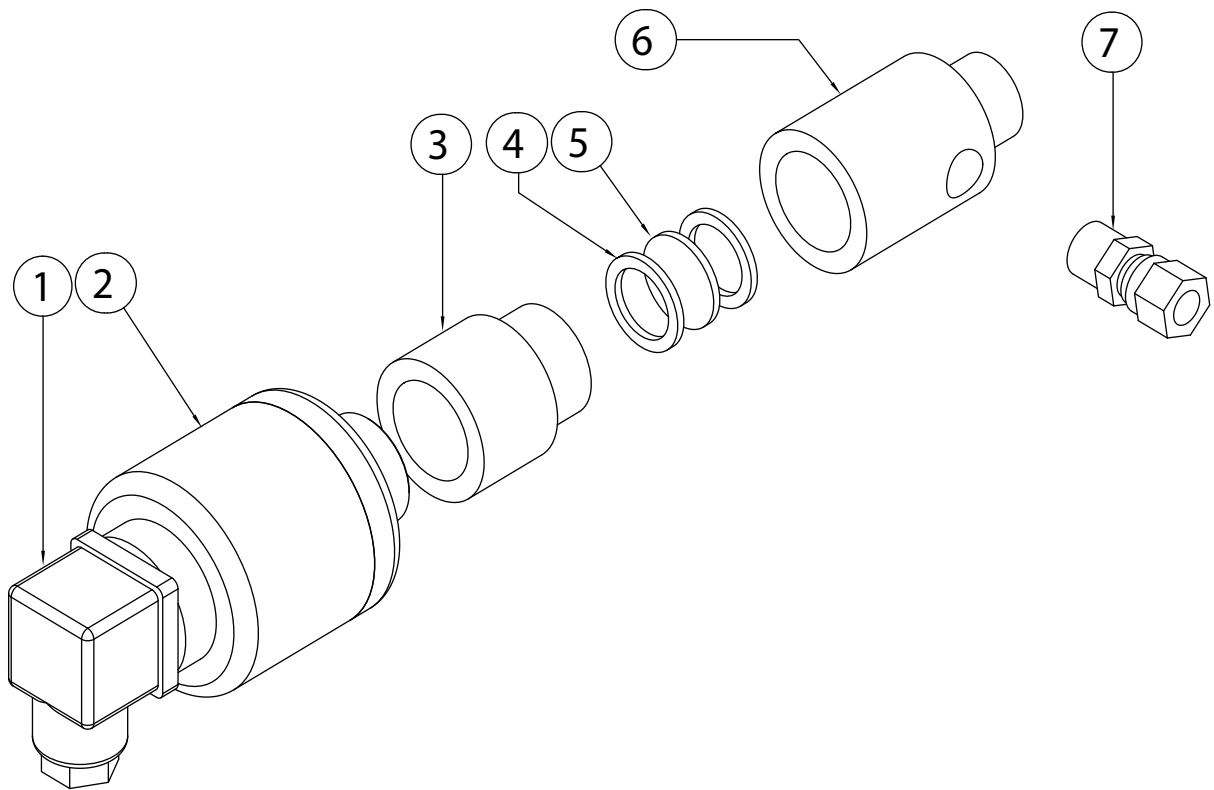
3 - Unscrew the aluminium pipe fitting (**pos. 06**) at the base of the gas collector, removing the uv-scanner with its spacer.

4 - Unscrew the aluminium fitting from the insulation teflon connector (**pos. 03**) and remove the quartz watch glass (**pos. 05**).

5 - Clean the quartz watch glass with a damp cloth and proceed to reassemble everything making sure that both the glass as well as the gaskets are put back in the correct positions (**pos. 04**) between the aluminium teflon spacer, before tightening.

6 - Restore the cooling hoses and power connection.

7 - Check the correct flame detection of the uv-scanner.



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EXTRAORDINARY MAINTENANCE

For correct dismantling and better maintenance of the radiant tubes, meticulously follow the technical instructions below:

1 - Disconnect power supply to the burner and the electrical connections to the electrode and uv-scanner.

2 - Disconnect all flange and threaded connections in the air, gas and combustive gas lines, after having checked the closure of the manual interception valves. Pay attention not to obstruct the copper tube of the zerogovernor charging line with foreign objects or dust particles.

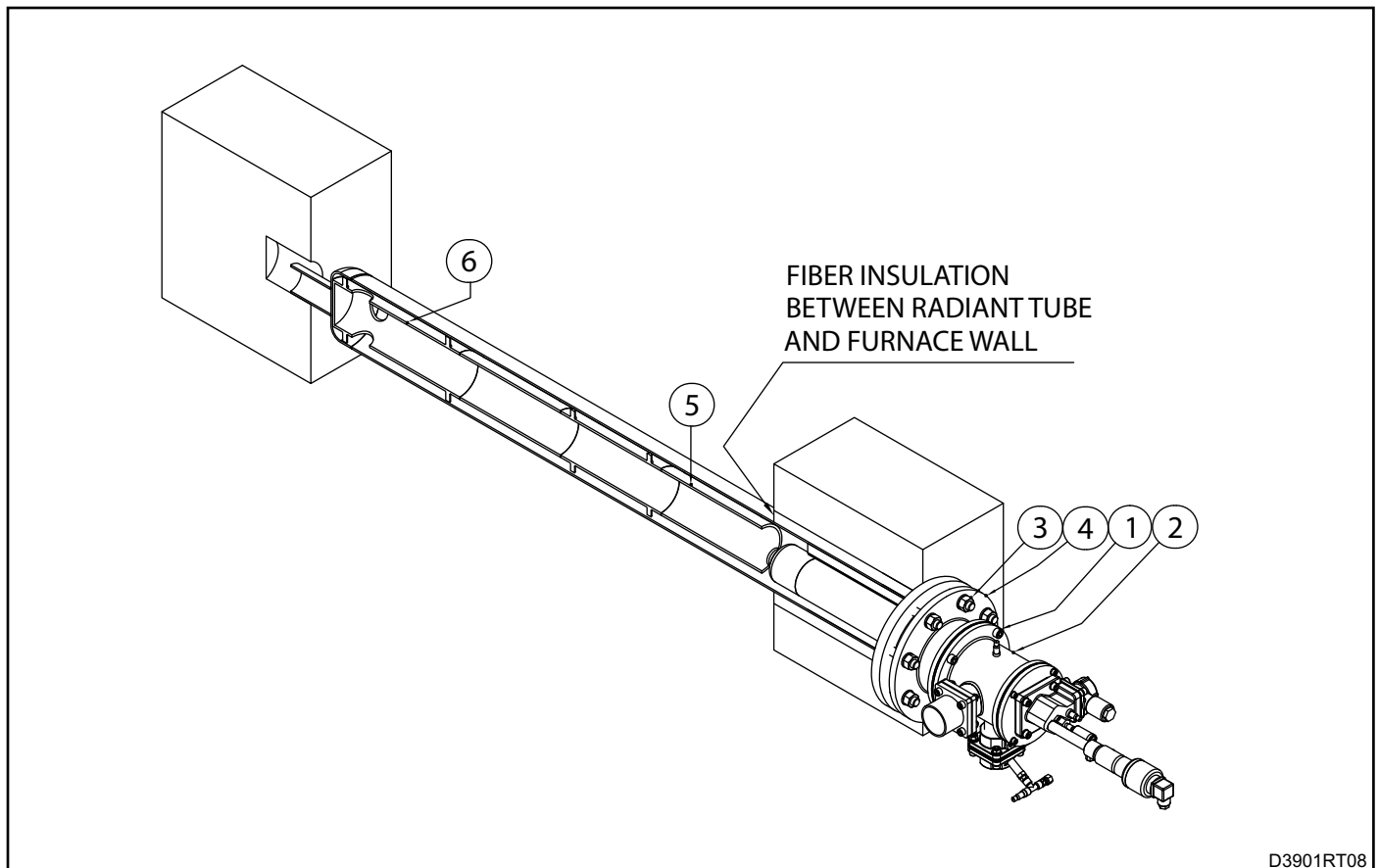
3 - Unscrew the screws (**pos.1**) of the burner body.

4 - Extract the burner (**pos.2**) supporting it on the metallic side, being very careful not to damage the silicon carbide exchanger element. Place the burner in the upright position in a safe area.

5 - Unscrew the nuts (**pos.3**) and extract the furnace wall adapting spacer (**pos.4**).

6 - Extract all the silicon carbide modules one by one using a non-metallic tool. Place the elements on a smooth surface in the upright (vertical) position.

7 - Extract the radiant tube being careful not to tilt it during the manoeuvre so as not to damage the support cradle and the furnace wall.



D3901RT08

Before assembling, make sure you have new insulation gaskets for the radiant tube, adjusting spacer and burner.

The assemblage procedure is exactly the same as the previous procedure and is carried out by repeating the dismantling steps backwards.

WARNING: pay special attention to the insertion of the internal SiC modules.

1- First insert the closed and perforated end module (**pos.6** see drawing pag.9) and push it to the bottom of the radiant tube, after having placed the tube inside the furnace.

2 - One by one insert the 250mm long standard elements (**pos.5**).

3 - With a non-metallic tool make sure that the all the elements have been pushed in correctly to eachother.

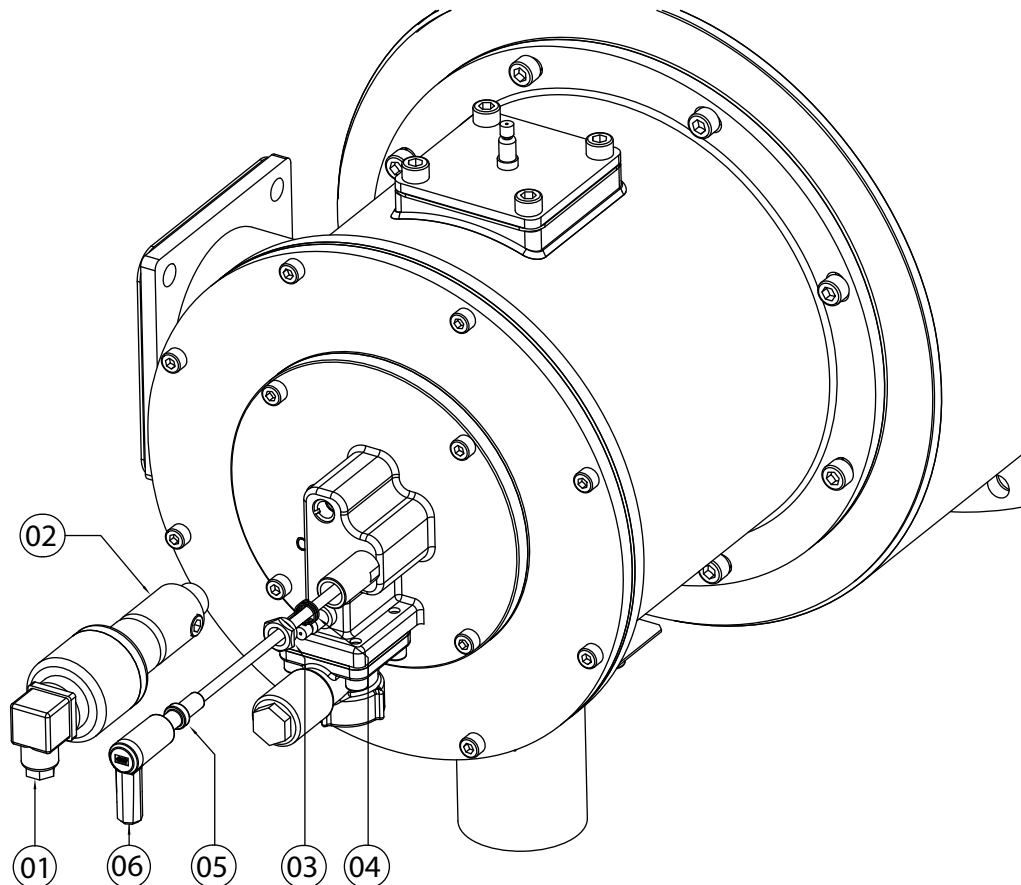
EXTRAORDINARY MAINTENANCE

UV-SCANNER REPLACEMENT

- 1 - Check that the burner control device is not connected.
- 2 - Disconnect the electrical flow to the uv-scanner (**pos. 01**) and to the cooling line (where present).
- 3 - Unscrew the aluminium pipe fitting at the base of the gas collector (**pos. 02**), removing the uv-scanner with its spacer.
- 4 - Screw the new component back on, in the same position, after having checked the correct position of the watch glass insulation between the aluminium and teflon spacers.
- 5 - Restore the cooling pipes and the electrical connection.
- 6 - Check the correct uv-scanner flame detection.

IGNITION ELECTRODE REPLACEMENT

- 1 - Check that the burner control device is not connected.
- 2 - Disconnect the Ht cable, by disconnecting the electrode insulation connector (**pos. 06**).
- 3 - Unscrew the upper connector (**pos. 03**) and then extract the retaining spring (**pos. 04**) and the electrode (**pos. 05**).
- 4 - Insert the new electrode, checking its beat. Place the retaining spring back inside and completely screw the connector back on again.
- 5 - Reconnect the electrode insulation connector. Replace it if necessary.

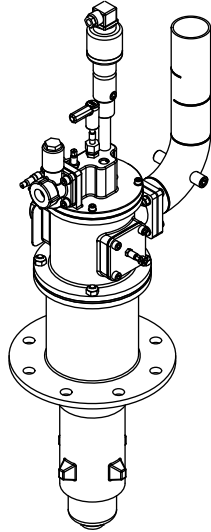


D3901RT09

INSTALLATION

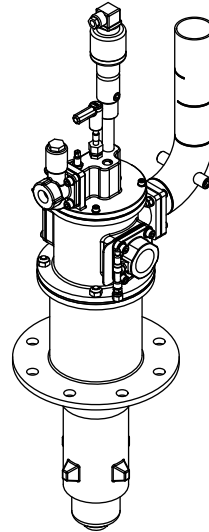
VSL

REKO-SIK-RT-VSL
VERTICAL APPLICATION
LEFT SIDE AIR INLET



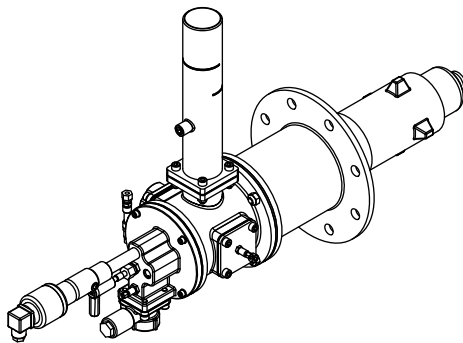
VSR

REKO-SIK-RT-VSR
VERTICAL APPLICATION
RIGHT SIDE AIR INLET



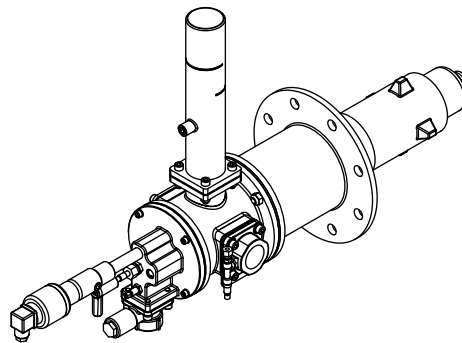
HUL

REKO-SIK-RT-HUL
HORIZONTAL APPLICATION
STRAIGHT FLUE GAS EXIT
LEFT AIR INLET



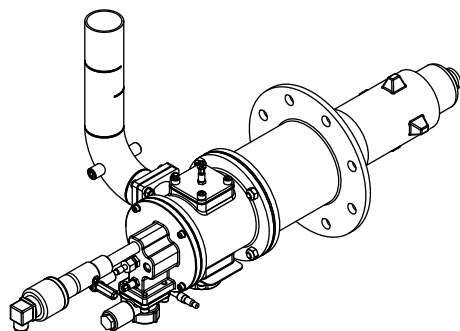
HUR

REKO-SIK-RT-HUR
HORIZONTAL APPLICATION
STRAIGHT FLUE GAS EXIT
RIGHT AIR INLET



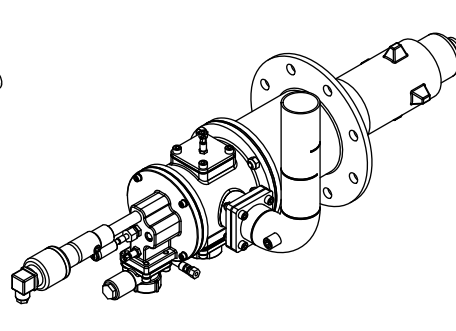
HSL

REKO-SIK-RT-HSL
HORIZONTAL APPLICATION
LEFT SIDE FLUE GAS EXIT



HSR

REKO-SIK-RT-HSR
HORIZONTAL APPLICATION
RIGHT SIDE FLUE GAS EXIT



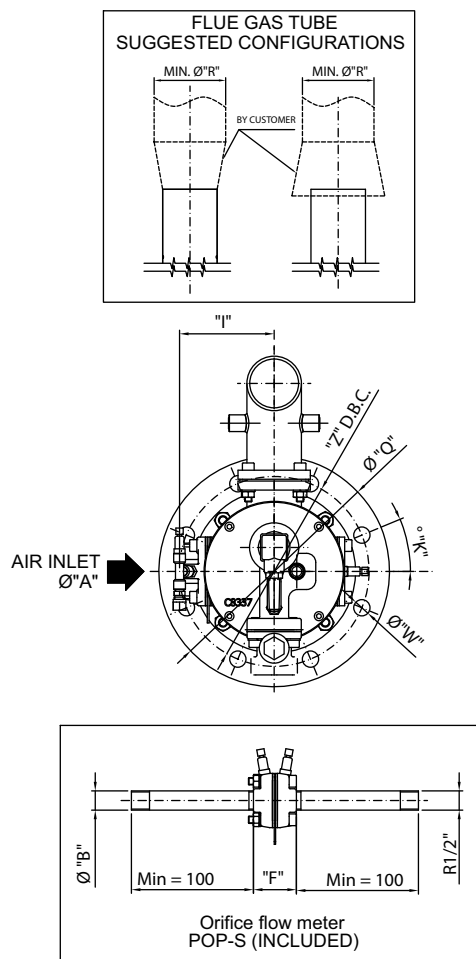
Technical drawing of a radiant tube furnace assembly. The drawing shows a cross-section of the furnace with various dimensions and labels.

Labels and Dimensions:

- FLUE GAS OUTLET Ø"M"**: Indicated by an upward arrow at the top left.
- GAS INLET Ø"B"**: Indicated by a downward arrow at the top right.
- "N"**: Dimension for the distance from the flue gas outlet to the center of the radiant tube.
- "G"**: Dimension for the distance from the gas inlet to the center of the radiant tube.
- "L"**: Dimension for the length of the flue gas outlet pipe.
- "D"**: Dimension for the distance from the gas inlet to the center of the radiant tube.
- "C"**: Dimension for the distance from the gas inlet to the center of the radiant tube.
- "E"**: Dimension for the distance from the gas inlet to the center of the radiant tube.
- "X"**: Dimension for the length of the radiant tube.
- "p" - "X"**: Dimension for the length of the radiant tube.
- Recuperator length = "p"**: Dimension for the length of the radiant tube.
- Wall thickness "X"**: Dimension for the wall thickness of the radiant tube.
- 170±10**: Dimension for the wall thickness of the radiant tube.
- MIN. RADIANT TUBE INTERNAL DIA. "H"**: Dimension for the minimum internal diameter of the radiant tube.
- 2**: Dimension for the distance from the center of the radiant tube to the wall thickness.
- CERAMIC FIBER INSULATION BY CUSTOMER**: Label for the insulation layer.

Notes:

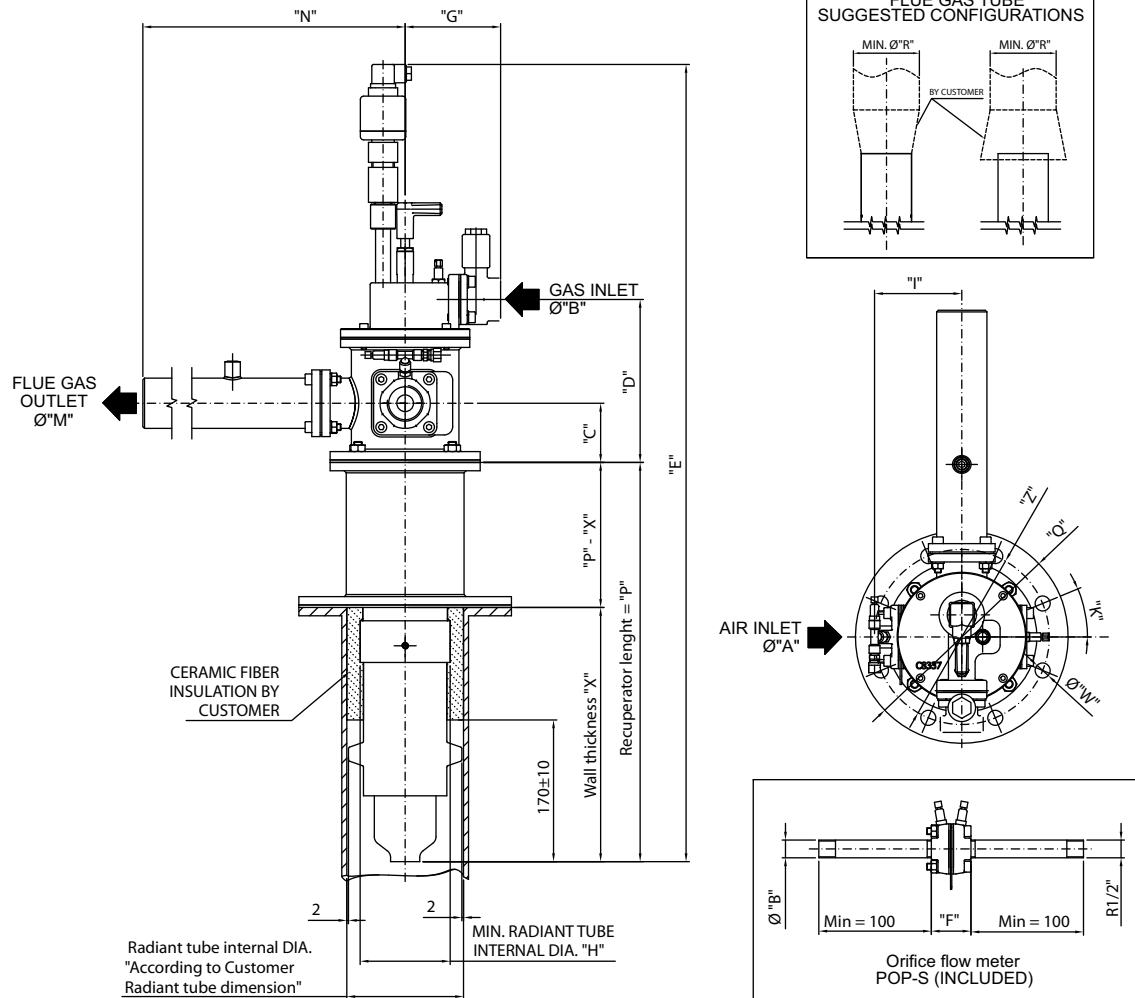
- Radiant tube internal DIA. "According to Customer Radiant tube dimension"



Burner Model	Ø "A"	Ø "B"	C mm	D mm	E mm	F mm	G mm	H (1) mm	K mm	I mm	L mm	M mm	N mm	W mm	Y mm	Z mm	P mm	Q mm	R (2)	Mass Kg (3)
REKO-0-SIK	1	1/2"	71	192	883	48	115	100	30°	100	200	Ø 1.1/2"	200	6	14	180	410	200	Ø 2.1/2"	20
REKO-1-SIK	1.1/4"	1/2"	71	196	958	48	115	112	22.5°	106	276	Ø 2"	213	8	18	210	480	255	Ø 3"	29
REKO-2-SIK	1.1/2"	1/2"	91	225	841	48	115	145	22.5°	128	305	Ø 2.1/2"	234	8	18	280	480	310	Ø 3.1/2"	37
REKO-3-SIK	2"	3/4"	91	252	862	48	115	175	22.5°	144	314	Ø 3"	273	8	18	320	480	350	Ø 4"	58
REKO-4-SIK	2.1/2"	1"	102	275	889	48	115	225	22.5°	172	340	Ø 4"	341	8	18	360	480	400	Ø 5"	60

(3) Always request a drawing when ordering.

OVERALL DIMENSIONS - REKO-SIK-RT (HUL-HUR)



D3901RT12

Burner Model	Ø "A"	Ø "B"	C mm	D mm	E mm	F mm	G mm	H (1) mm	K mm	I mm	L mm	M mm	N mm	W mm	Y mm	Z mm	P mm	Q mm	R (2)	Mass Kg (3)
REKO-0-SIK	1	1/2"	71	192	883	48	115	100	30°	100	200	Ø 1.1/2"	350	6	14	180	410	200	Ø 2.1/2"	20
REKO-1-SIK	1.1/4"	1/2"	71	196	958	48	115	112	22.5°	106	276	Ø 2"	392	8	18	210	480	255	Ø 3"	29
REKO-2-SIK	1.1/2"	1/2"	91	225	841	48	115	145	22.5°	128	305	Ø 2.1/2"	432	8	18	280	480	310	Ø 3.1/2"	37
REKO-3-SIK	2"	3/4"	91	252	862	48	115	175	22.5°	144	314	Ø 3"	273	8	18	320	480	350	Ø 4"	58
REKO-4-SIK	2.1/2"	1"	102	275	889	48	115	225	22.5°	172	340	Ø 4"	482	8	18	360	480	400	Ø 5"	60

Important note: "X" wall thickness is the responsibility of the client .

(1) Indicative diameter (depends on the chimney conformations).

(2) Burner mass including air and gas inlets, exhaust pipe and furnace wall spacer.

(3) Always request a drawing when ordering.

ORDERING INITIALS - COMPLETE BURNER

REKO - 01 - SIK - 02 - 03 - RT - 04 - E - X - 06

Model 01	
REKO-0-SIK	0
REKO-1-SIK	1
REKO-2-SIK	2
... (see. capacity tab.)

Position 04	
See configurations pag.20	VSL VSR HUL HUR HSL HSR

Gas adjuster 02	
With gas adjuster	GA*
Without gas adjuster	F

Ignition 05	
Electrode	E*

Fuel 03	
Natural gas	CH4
LPG	GPL
Poor gas ⁽¹⁾	GP

Flanging type 06	
As ESA drawing	E*
As Client drawing	C

The initials marked with an asterisk (*) identify the standards.

Notes:

¹ Particular performance according to gas characteristics.

To check the components that are not supplied with the burner, consult the burner flow scheme on page 7.

"X" Wall thickness.