

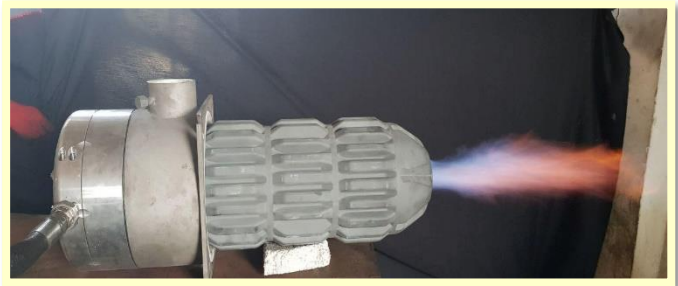
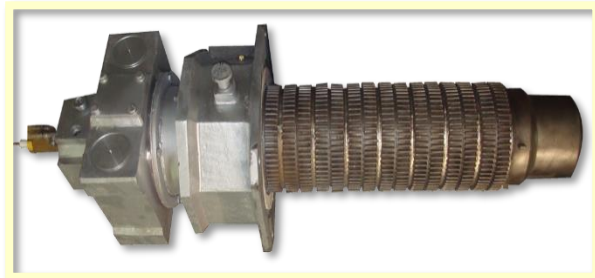
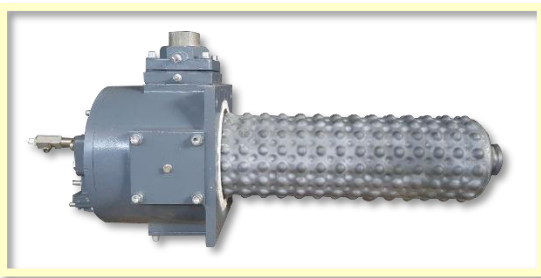
SELF-RECUPERATIVE GAS BURNERS

MODEL : **SRG**

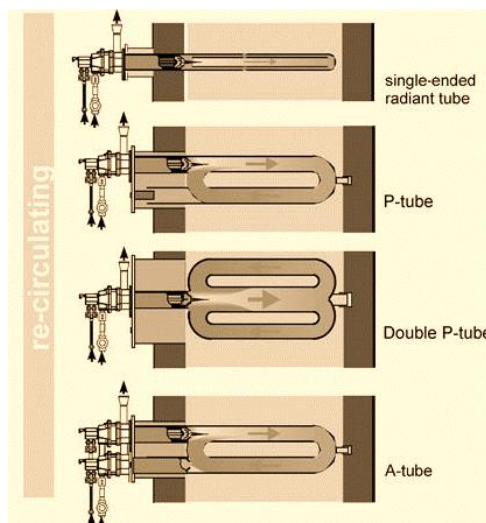
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Self-Recuperative Burners for Gaseous Fuels include a recuperator that is integrated into the burner that preheats the incoming combustion air. Burner capacity between 20,000 to 500,000 kCal/hr. The exhaust gases are 'pulled back' through the burner by an ejector which is located upstream of the burner. This design arrangement leads to a high air preheated temperature and excellent thermal efficiencies. Type and main material of these recuperators are different based on customers request or burner capacities.



They are widely used for heating on either direct or indirect furnace systems in intermittent or modular modes. In indirect heating they can be applied for: Inert gas roller hearth furnaces, Inert gas chamber furnaces, Continuous strip lines, Use in single-ended radiant tubes, P- & double-P radiant tubes, etc.



SHOLEH SANAT ENG. & MFG. CO.

MANUFACTURER OF BURNERS FOR FURNACES

FUEL CONVERSION OF BOILERS & FURNACES, DESIGN , CONSULTATION AND INSTALLATION

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In direct heating they can be applied for Chamber furnaces for heat treatment, Bogie hearth furnaces for heating and forging, Roller hearth furnaces with an open flame, Rotary hearth furnaces and crucible furnaces.

OPERATION

SRG burner is a high-velocity burner with an integral heat exchanger for preheating combustion air using the combustion exhaust gases. In this way, energy can be saved up to 50% (depending on the application). It also makes high flame velocity for intensive flue gas circulation in the combustion zone. With an outstanding rigid design of the recuperator, tip flame will have long-time stability on high temperatures.

These types of the burner can operate in flameless or conventional firing modes. In the case of the flameless mode, this burner converts from a conventional low NO_x industrial burner to a remarkable ultra-low NO_x type.



Flameless Combustion

In the high-temperature industry such as heating and heat treating of metal and steel, by preheating the combustion air and flue gas circulation in the furnace, flameless combustion can be achieved.

In flameless combustion, a constant furnace temperature of up to around 1200 °C can be maintained with low nitrogen oxide emissions. A sample emissions measurements for a metal heat treatment furnace is available in the table below.

Burner Mode	NO _x (ppm)*	Excess Air (%)	CO (ppm)*	Furnace Temperature (°C)
Flame mode	42	7.6	2	850
Flameless mode	4.5	5.2	6	1100

* CORRECTED TO 3.0% O₂ (DRY BASIS @ DESIGN HEAT RELEASE)

LIGHTING / FLAME SUPERVISION

Direct spark ignition is available for this burner. Flame supervision can be performed by a flame rod in all capacities. However, ultraviolet (UV) flame scanner can be only used in high capacities.

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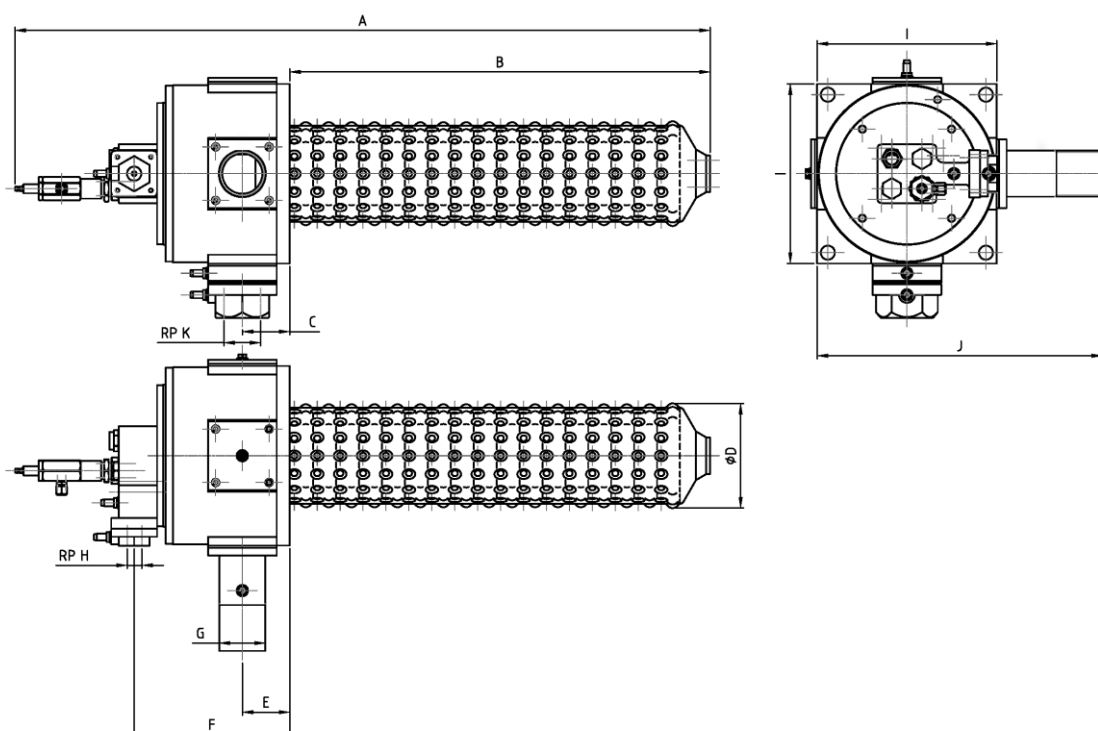
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CONSTRUCTION FEATURES

Air and gas inlets can be rotated in 90° intervals. Mounting plates are cast iron or metal sheet. For thicker furnace walls, the tunnel beyond the end of tile should be flared at least 30° included angle, starting at tile OD. Extension tiles are not recommend.



Burner Type	Max. Capacity kCal/hr	A mm	B mm	C mm	D mm	E mm	F mm	G in	H in	I mm	J mm	K in
20 SRG-S	20,000	889	530	62	123	62	204	2	1/2	235	373	1.1/2
50 SRG-S	50,000	910	550	62	139	62	204	2	1/2	235	373	1.1/2
80 SRG-S	80,000	965	550	77	171	84	268	2	1/2	280	417	2

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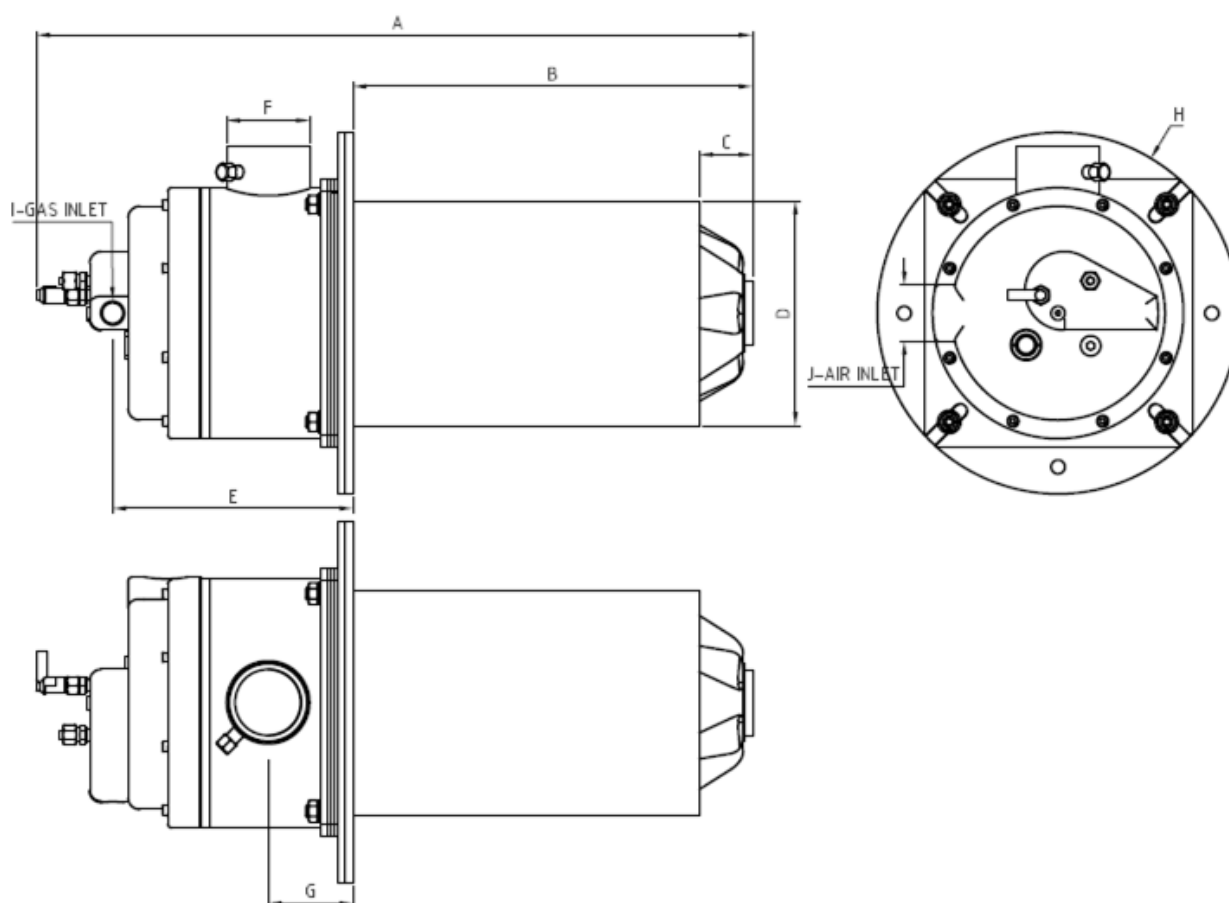
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Burner Type	Max. Capacity kCal/hr	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I in	J in
260 SRG-S	260,000	930	519	69	292	312	108	110	469	1	2
500 SRG-S	500,000	1251	762	124	404	308	162.5	137	658	1.1/2	3

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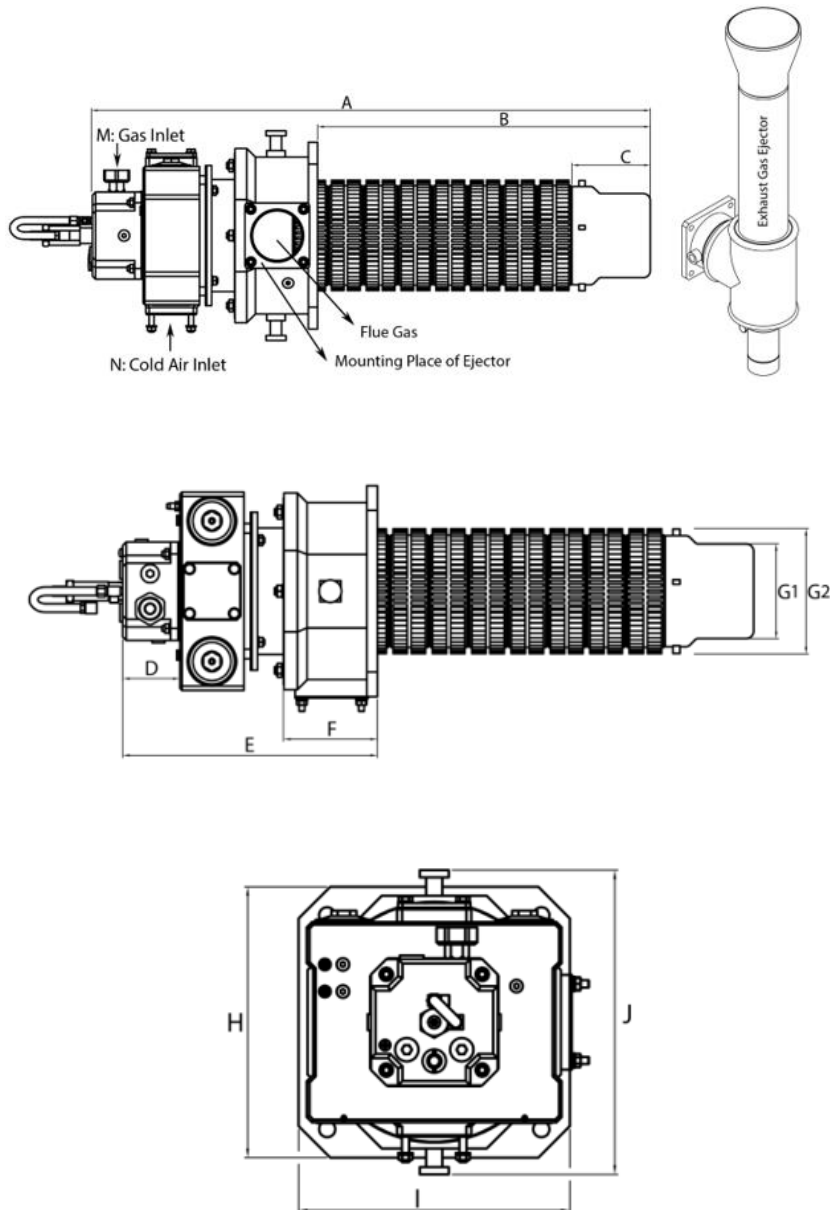
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Burner Type	Max. Capacity kCal/hr	A mm	B mm	C mm	D mm	E mm	F mm	G1 mm	G2 mm	H mm	I mm	J mm	M in	N in
60 SRG-M	60,000	898	535	126	81	362	134	135	177	300	300	337	1/2	2

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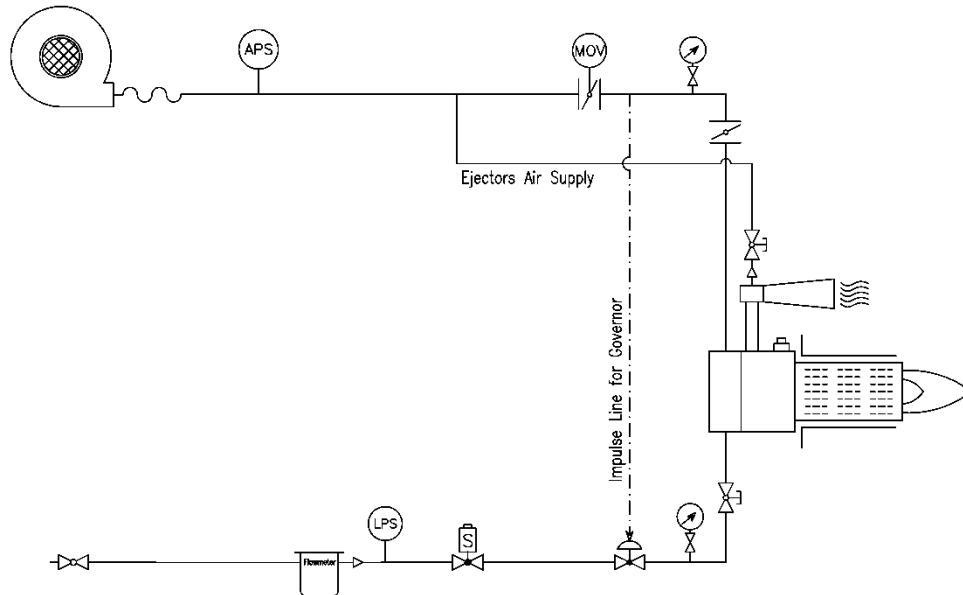
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SYSTEM EXAMPLE



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