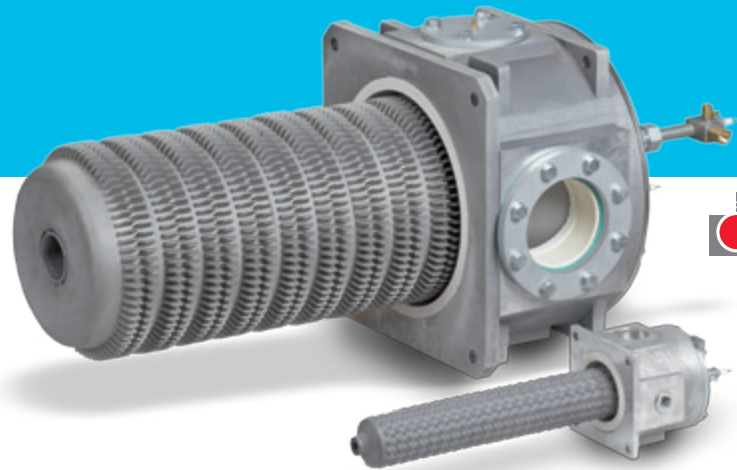
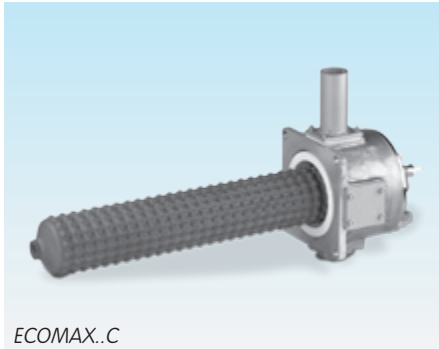


# Self recuperative burner ECOMAX® for gas

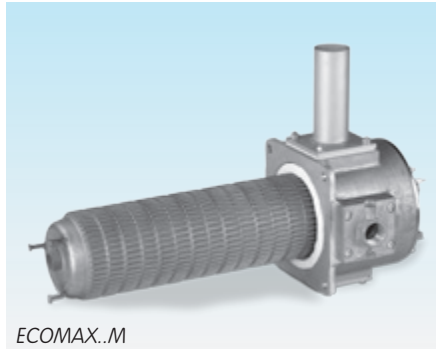
Product brochure · GB  
Edition 02.11



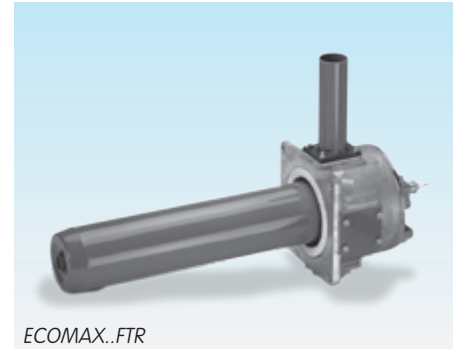
- For direct and indirect heating equipment
- Economical, energy-saving operation by virtue of internal air preheating up to 700°C
- Great flexibility due to its maintenance-friendly modular design
- Uniform distribution of temperature by means of a high burner impulse
- Low polluting level thanks to staged combustion
- Direct ignition and monitoring
- 7 sizes for a broad output range from 15 – 500 kW
- Highly efficient with a ceramic burled tube recuperator, a cast steel ribbed tube recuperator or a flat tube recuperator



ECOMAX..C



ECOMAX..M



ECOMAX..FTR

## Application

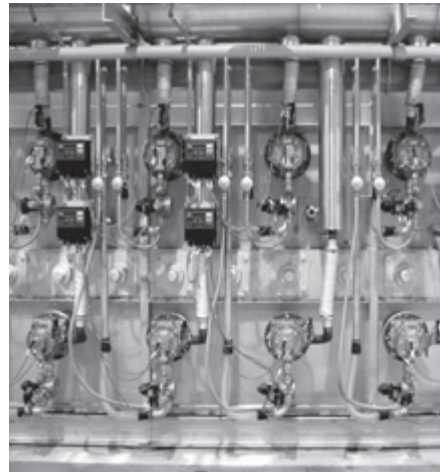
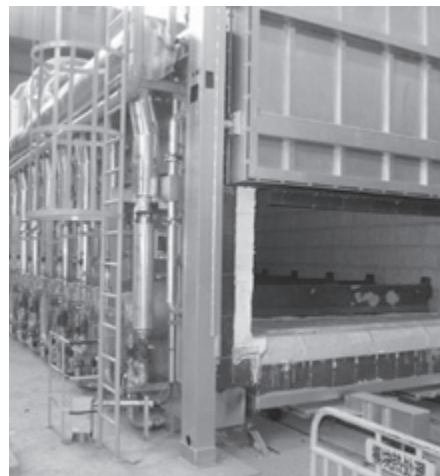
The burners with integrated recuperator ECOMAX® are used for heating on either direct or indirect furnace systems in intermittent mode.

### Indirect heating

ECOMAX® self recuperative burners are used in conjunction with metallic or ceramic radiant tubes and the segmented ceramic flame tube SICAFLEX® as indirect heating equipment whenever the combustion gases are to be separated from the product.

### Direct heating

In conjunction with an eductor to extract the flue gases, the burner is used to save energy in a direct heating system. Applications include industrial furnaces and firing systems in the iron and steel industry and in the non-ferrous metal industry.

*Roller hearth furnace**Bogie hearth furnace**Batch furnace*

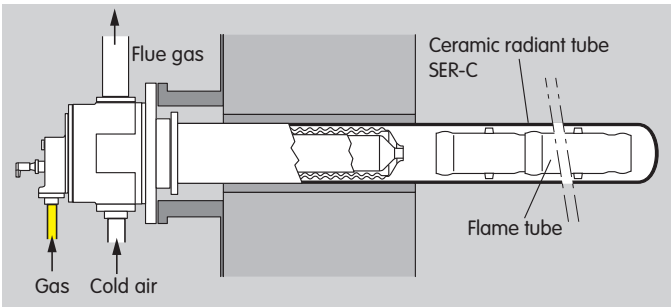
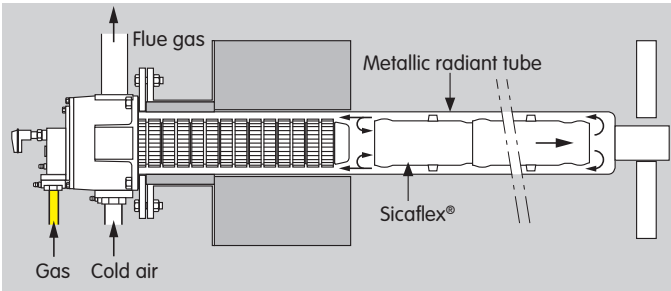
Examples of application

ECOMAX® in radiant tubes

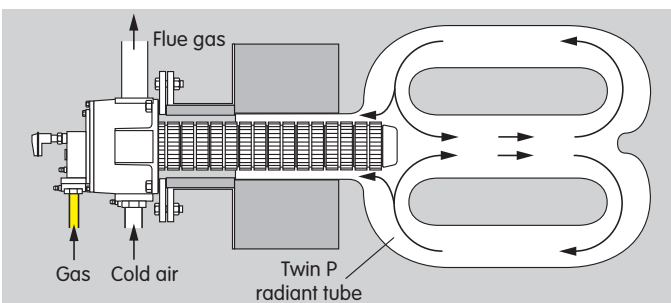
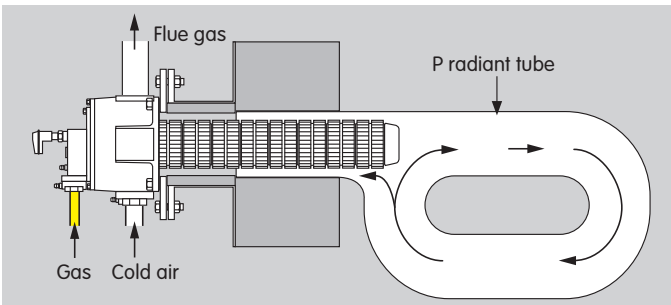
The high outlet velocity of the combustion gases generates a pressure at the outlet of the ceramic burner tube, resulting in the recirculation of the flue gases. This leads to the following:

- a reduction in NOx emissions,
- a uniform radiant tube temperature.

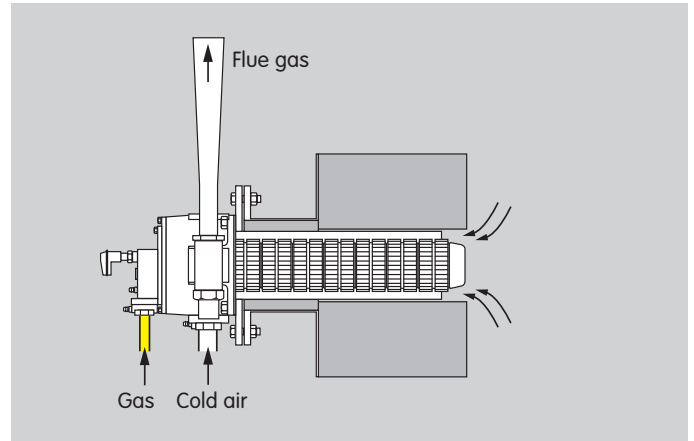
The hot flue gases are fed through the ceramic or metallic heat exchanger, heating the additional supply of cold combustion air flowing in the opposite direction. The maximum achievable air preheat temperature amounts to approx. 700°C, depending on the application.



SICAFLEX® segmented flame tubes must be fitted in the single-ended (metallic or ceramic) radiant tube to guide the hot flue gases.



ECOMAX® in direct heating systems



ECOMAX® self recuperative burner in a direct heating system with an eductor for extracting the flue gases from the furnace. The eductor generates a vacuum with a centrally positioned nozzle and thus draws the flue gases out of the furnace chamber through the burner's heat exchanger. The maximum achievable air preheat temperature amounts to approx. 700°C, depending on the application.



ECOMAX® with eductor and burner control unit BCU

## Type code

Code	Description
ECOMAX	Burner type
0	Burner size (max. burner output with natural gas): 0 (25 kW)
1	1 (36 kW)
2	2 (60 kW)
3	3 (100 kW)
4	4 (180 kW)
5	5 (250 kW)
6	6 (500 kW)
M	Recuperator: metallic
C	ceramic
FTR	metallic, flat tube variant
B	Gas type <sup>4)</sup> : natural gas
D	coke oven gas
G	LPG
L <sup>1)</sup>	LCV gas
395 to 695	Burner length in mm
-22 to -500 <sup>2)</sup>	Orifice for burner output in kW <sup>2)</sup>
P0 <sup>3)</sup>	Gas flange with purging air connection
K <sup>3)</sup>	Additional cooling air connection
A <sup>3)</sup>	Kanthal electrode
DA1 <sup>3)</sup>	Differential air pressure measuring kit
DA2 <sup>3)</sup>	Differential air pressure measuring kit with pressure switch
DW <sup>3)</sup>	Flue gas monitoring kit with pressure switch
T <sup>3)</sup>	NPT connection
S <sup>3)</sup>	Spacer for SICAFLEX® flame tube
Z <sup>3)</sup>	Special version

<sup>1)</sup> On request.

<sup>2)</sup> Orifice size on request.

<sup>3)</sup> If "none", this specification is omitted.

<sup>4)</sup> Other gas types on request.

Burner Size	Recuperator			Output* [kW]
	ceramic C	metallic M	metallic, flat tube FTR	
Ecomax 0	●	–	–	25
Ecomax 1	●	●	●	36
Ecomax 2	●	●	●	60
Ecomax 3	●	●	●	100
Ecomax 4	●	●	●	180
Ecomax 5	●	●	●	250
Ecomax 6	–	●	–	500

● = available.

\* For operation with natural gas. For operation with coke oven gas, the output is approx. 80%, for operation with LCV gas, approx. 65%.

## Technical data

Heating: direct with eductor or indirect in radiant tube.

Control type: On/Off.

Control range: approx. 1:3.

Flame velocity: approx. 120 to 150 m/s.

Flame control: direct ionization control (UV control as an option).

Ignition: direct, electrical.

Recuperator:

ECOMAX..C:

ceramic (SiSiC), max. application temperature 1300°C,

ECOMAX..M:

cast steel, max. application temperature 1150°C,

ECOMAX..FTR:

metallic, max. application temperature 950°C.

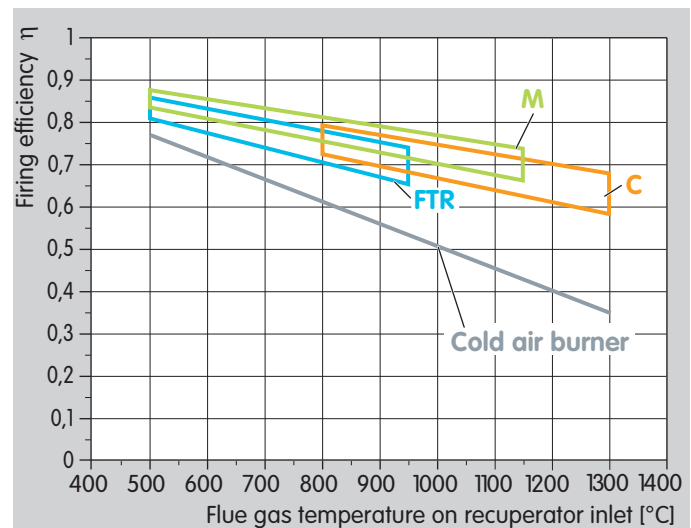
### Efficiency

Heating: direct.

Flue gas extraction: 100%.

Lambda: 1.1.

Duty cycle: 80%.



## Detailed information on this product

[www.lbe-online.de](http://www.lbe-online.de)

## Contact

[www.lbe-online.de](http://www.lbe-online.de) → Contact

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