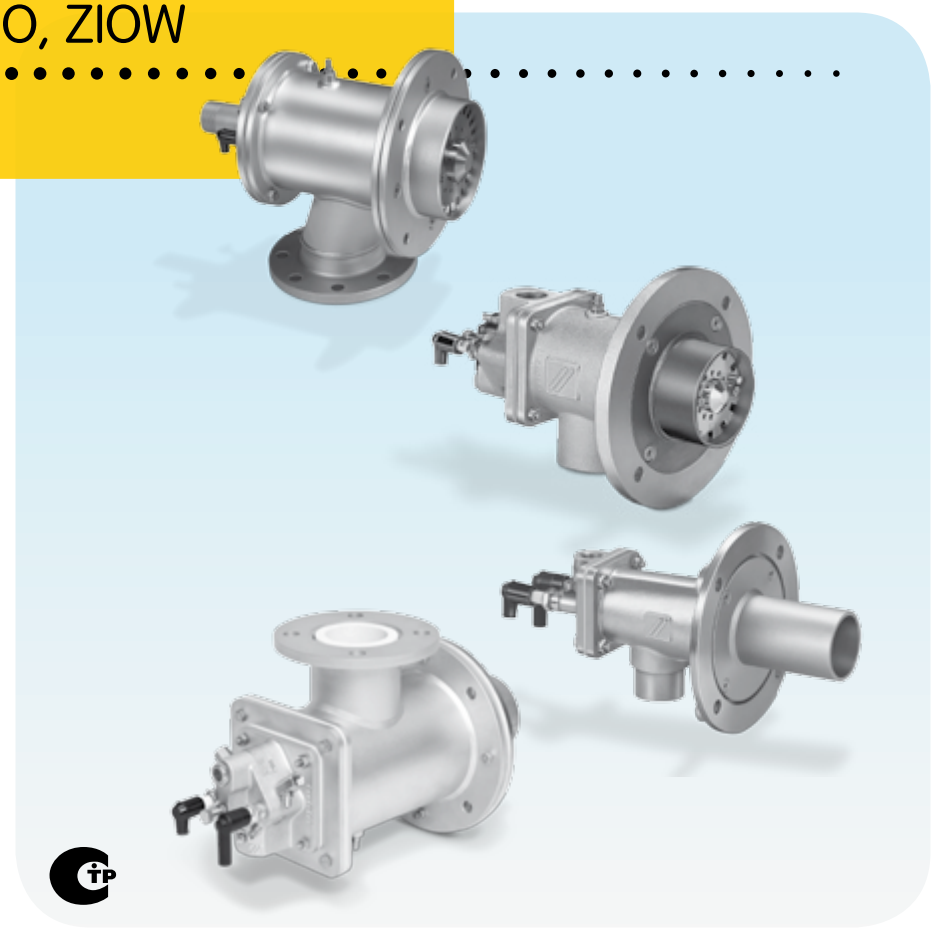
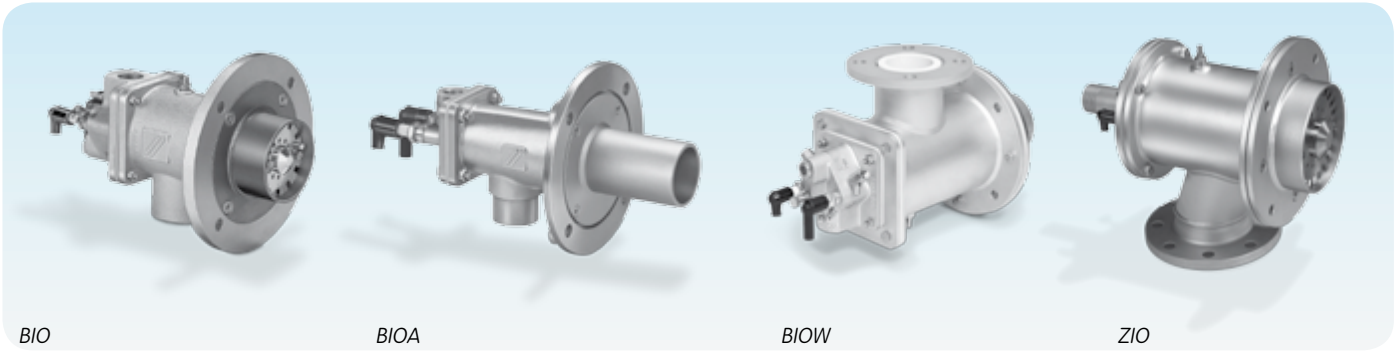
Burners for gas
BIO, BIOA, BIOW, ZIO, ZIOW

Product brochure · GB
7 Edition 10.13



- Large capacity range up to 1000 kW (341×10^3 BTU/h)
- Maintenance-friendly thanks to modular design
- Robust burner design
- Safe flame control thanks to ionization electrode and reliable electrical ignition
- Length increments enable individual adjustment either to new systems or when modernizing existing systems
- Low polluting level thanks to optimized combustion
- For installation as ceiling or side-wall burners
- Can be combined with different combustion chamber shapes
- Air preheating up to 500°C (932°F)
- BIOW, ZIOW: housing with internal insulation to reduce the surface temperature



BIO BIOA BIOW ZIO

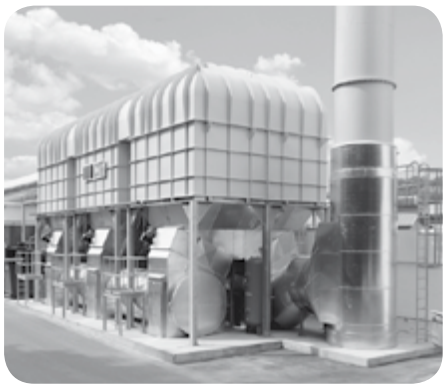
Application

For industrial furnaces and firing systems in the iron and steel industries in the precious, non-ferrous and light metal sector, as well as in the plastics, fibre and paper industries. Other fields of application are thermal incineration installations, as well as driers and hot air generators.

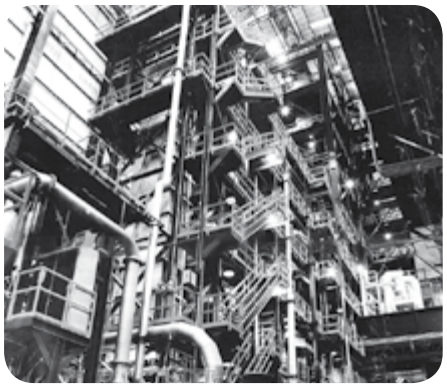
The burners are used in combination with a burner quarl made from refractory concrete. Different flame shapes can be achieved by using burner quarls with different geometries. The burner may be adapted to the system requirements using different burner lengths.

A high temperature version of the burner is available for high temperature applications (e.g. forging furnaces).

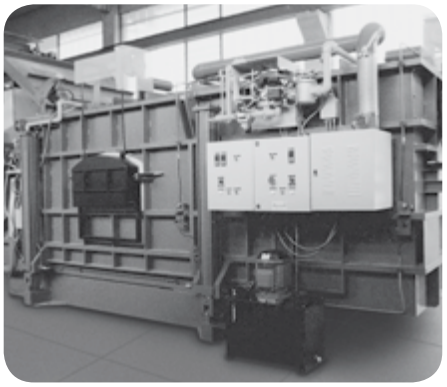
For low temperature applications (e.g. for radiant tube heating or hot air generation), the burners are equipped with a heat-resistant steel attachment tube.



Incineration installation for thermal regenerative flue air purification



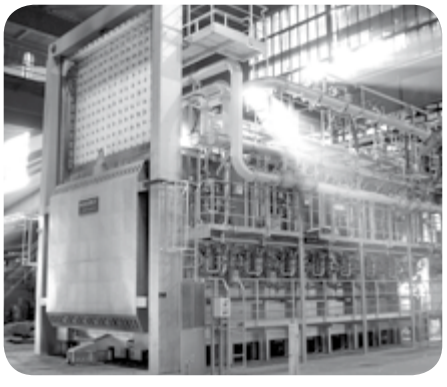
Strip galvanizing plant



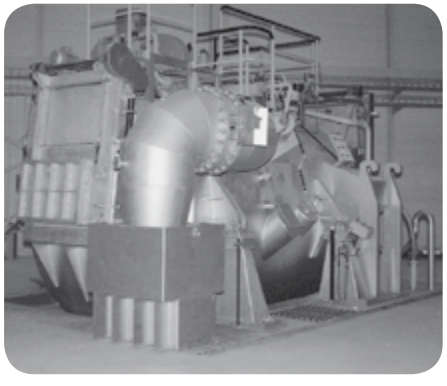
Smelting and holding furnace



Rotary table furnace

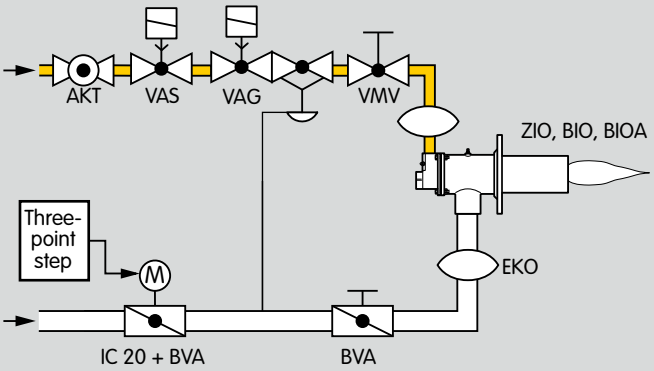


Bogie hearth forging furnace



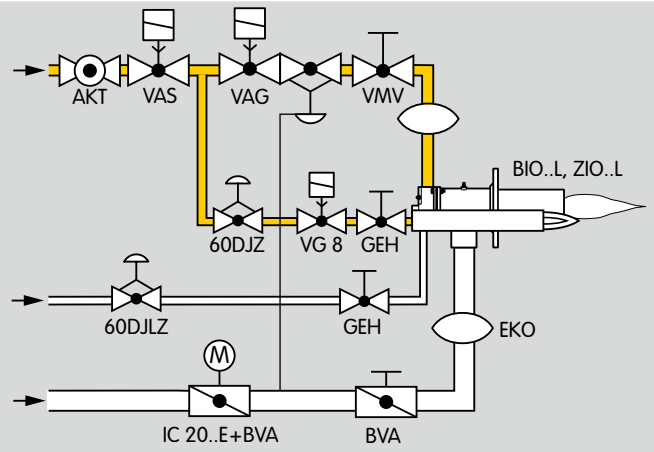
Aluminium tank furnace

Examples of application



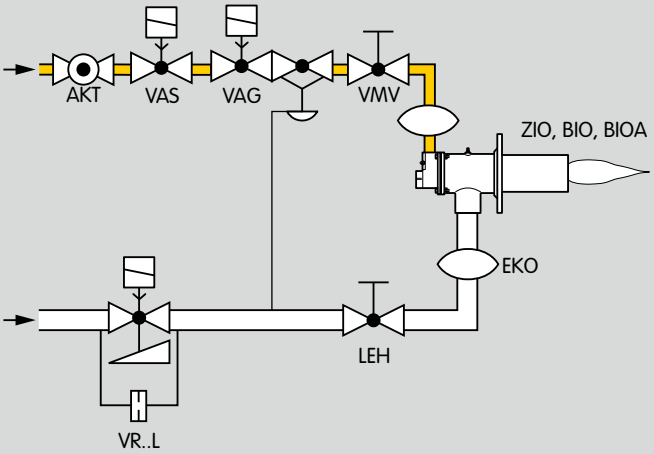
Modulating control with pneumatic ratio control system

The burner capacity is controlled in modulating mode by adjusting the butterfly valve BVA. The impulse line on the air/gas ratio control VAG ensures constant air and gas pressures. The ratio of the gas volume is kept constant. This type of control is used in melting furnaces in the aluminium industry or in regenerative incineration installations in the environment industry, for example.



Modulating control with pneumatic ratio control system and lance

The burner's flexibility is increased thanks to an ignition lance. This type of control is used in heat treatment furnaces in the iron and non-ferrous metal industries and in heating furnaces in the steel industry, for example.

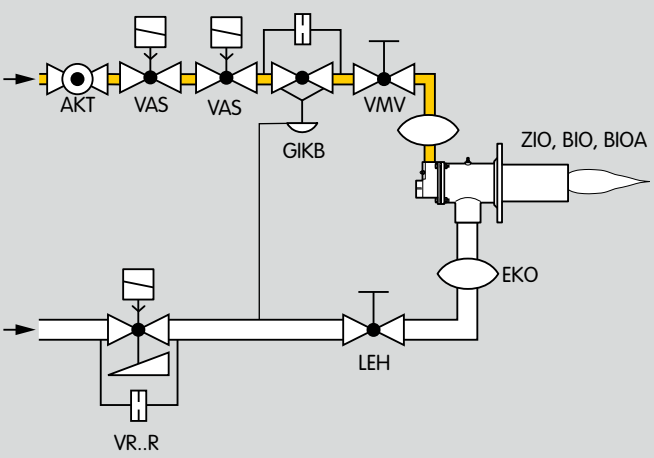


Staged control with pneumatic ratio control system and ON/OFF cyclical control

With ON/OFF cyclical control, the capacity supplied to the process is controlled by means of a variable ratio of the operating time to the pause time.

The burner is ignited while the air valve is opening slowly. The pneumatic ratio control system controls the gas volume and ensures a constant mixture of gas and air in the burner. In accordance with EN 746-2, this type of control can only be used for burner capacities of up to 360 kW (1229×10^3 BTU/h).

While the burner is switched off and depending on the furnace temperature, there must be a certain air flow.



Stufige Regelung mit pneumatischem Verbund und Taktsteuerung KLEIN/GROSS

Die Zündung des Brenners erfolgt mit definierter Zündlast. Auf der Gasseite wird die Zündlast über eine Bypassdüse im GIKB realisiert und auf der Luftseite z. B. über eine Bohrung im Luftventil. Dieses Brennersystem ist somit unabhängig von der Brennerleistung einsetzbar.

Die Brennerleistung wird durch Öffnen und Schließen des Luftventils zwischen KLEIN- und GROSS-Last getaktet. Das Luftstellglied sollte langsam öffnen und auch langsam schließen.

Type code

Code	Description
BIO	Burner for gas
BIOA	Burner for gas with aluminium housing
BIOW	Burner for gas with internal insulation
ZIO	Burner for gas
ZIOW	Burner for gas with internal insulation
50 to 200	Burner size
	Use:
R	cold air
H	hot air
K	flat flame
	Gas type:
B	natural gas
G[1], M	propane, propane/butane, butane
L	low calorific value gas
D	coke oven gas, town gas
F	biologically produced methane
	Variants:
L	with ignition lance
R	with reduced max. connection rating
–50[2]	Burner tube length (L1) [mm]
–100[3]	
–150[2]	
–200[3]	
–250[2]	
–300[3]	
…	
/35–	Position of burner head (L2) [mm]
/135–	
/235–	
/335–	
…	
-(1) to -(199)	Burner head identifier
-(1E) to -(199E)	High temperature version
A to Z	Construction stage
B	With purging air bore holes

[1] *For λ < 0.9 or when using the BIO 50.*
[2] *R, K burner head*
[3] *H burner head*

Legend

	Manual valve
	Gas solenoid valve
	Air/gas ratio control with solenoid valve
	Flow adjusting cock
	Butterfly valve with actuator
	Butterfly valve with manual adjustment
	Solenoid valve for gas, slow opening
	Air/gas ratio control with bypass nozzle

Technical data

Gas supply pressure and air supply pressure each depend on the use and gas type (gas and air pressures.

Burner length increments: 100 mm (3.94").

Gas types: natural gas, LPG (gaseous), coke oven gas and biologically produced methane; other types of gas on request.

Control type:
staged: ON/OFF, LOW/HIGH,
modulating: constant λ value.

Most of the burner components are made of corrosion-resistant stainless steel.

Housing:
BIO: cast steel,
BIOA: AlSi,
ZIO: St,
BIOW: St + internal insulation,
ZIOW: St + internal insulation.

Flame control: with ionization electrode (UV sensor as an option).

Ignition: direct spark ignition; lance as an option.

Maximum furnace temperature:
BIO/ZIO in burner quarl: up to 1600°C (up to 2912°F),
BIO/ZIO with burner attachment tube: up to 600°C (up to 1112°F).

Maximum air temperature:
BIO, ZIO: up to 450°C (842°F),
BIOA: up to 200°C (392°F),
BIOW, ZIOW: up to 500°C (932°F).

REACH Regulation

applies to BIOW and ZIOW only.

Information pursuant to REACH Regulation No. 1907/2006, Article 33.
Insulation contains refractory ceramic fibres (RCF)/aluminium silicate wool (ASW). RCF/ASW are listed in the Candidate List of the European REACH Regulation No. 1907/2006.

Maintenance cycles

Twice per year, but if the media are highly contaminated, this interval should be reduced.

elster Kromschröder

Detailed information on this product

http://docuthek.kromschroeder.com/doclib/main.php?language=1&folderid=207050&by_class=6

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