



FLAMELESS GAS BURNERS

for heating processes in glass manufacturing



Heating solutions
for the glass industry

HOMOGENEOUS HEAT FOR HIGHER EFFICIENCY

Flameless gas burners of promeos® provide the better process heat.

- Can be designed in any shape and can be extended into all directions
- From clean hot air to solid body IR radiation and high-temperature gas radiation
- From 100 °C to 1.400 °C



The manufacturing of high quality glasses requires an optimum temperature control in all sub-processes along the production chain – from raw material to the finished product. Using the fully premixed gas burner technology of promeos, thermal processes can be designed with more homogeneous heat distribution, resulting in increased efficiency and higher profitability.

Combustion does not take place as an open flame, but rather in a porous high-temperature ceramic body. This volumetric combustion acts as a radiant surface or a uniform hot gas source. The power is continuously adjustable according to the heat demand.

The burner shape can be customized to the heating requirements. Technology leadership coupled with extensive process know-how in the field of industrial production processes enable promeos® to reduce specific manufacturing costs, increase productivity and to sustainably reduce the environmental impact.

promeos® offers heating solutions for new installations and retrofit of existing systems – from engineering and project management, product manufacturing to commissioning. Optimum maintenance and first-class service are matters of course – around the clock, worldwide.

The advantages:	Your Benefits:
+ gas instead of electricity	+ energy savings of up to 30 %
+ flameless gas burner	+ no “hot spots”
+ uniform heat	+ improved product quality
+ short heating times	+ reduction in operating costs of up to 50 %
+ low noise level	+ noise emissions less than 70 dB
+ reduction of CO ₂	+ up to 65 % less pollutant emissions
+ low maintenance effort	+ short pay back period

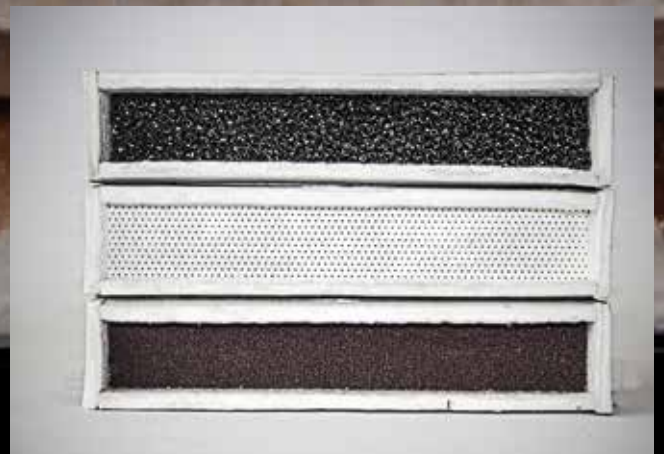
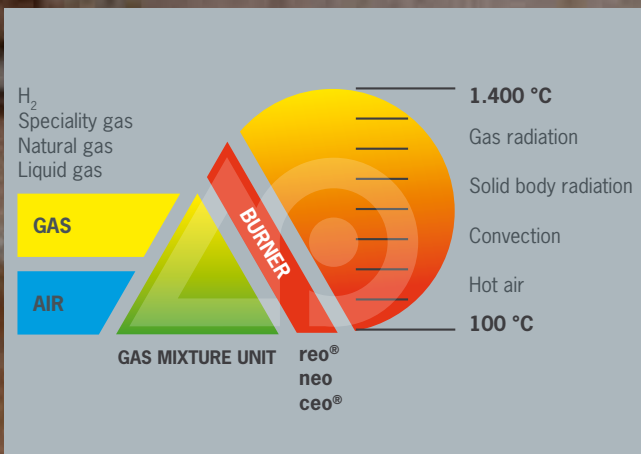
SIMPLY MODULAR.

By combining individual burner modules in parallel, burner systems with an output of 1 kW to several 1.000 kW are realized.



From simple warm or hot air to solid body IR radiation and high-temperature gas radiation. The application determines the right heat source and the optimum flow structure.

Depending on the requirements, heating solutions are equipped with the flameless reo®, neo oder ceo® gas burners by promeos®.



FROM HOT END...

Flameless gas burners for feeder and forming!

FEEDER

Homogeneous tempering of the melting.

Laterally integrated line burners on both sides provide an absolutely uniform heating from feeder to spout, resulting in no "hot spots" but exactly controlled temperature.

Fields of application

- Feedstock
- Feeder and Spout heating
- Float bath heating
- Launder heating

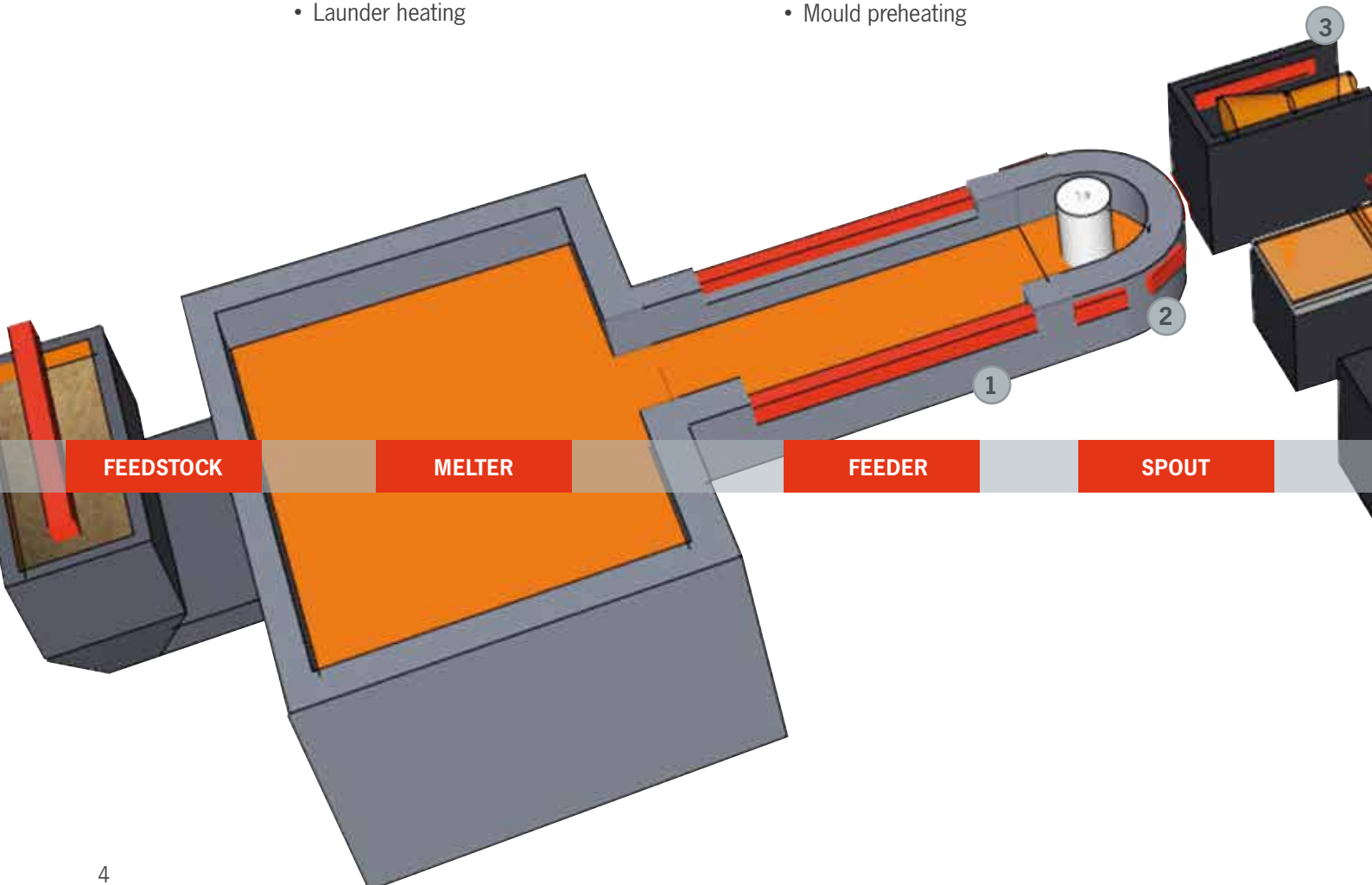
FORMING

Flameless gas heating „in and to any form“.

The gas burner with flexible geometry and stepless power modulation assures precise control of the glass temperature in time and space – prerequisite for all successive process steps and for an optimum product quality!

Fields of application

- Muffle furnace
- Roller heating
- Mould preheating



FEEDER / SPOUT



FEEDER

The integration of the burner into existing side walls or covers results in directly heated feeder refractory stones – optimum heating at the edges and no more “hot spots”.



SPOUT

All around 360 ° – heat without individual open flames, just homogeneous! Lower energy consumption and reduced wears are the logical consequences.

FORMING



MUFFLE FURNACE

Uniform heat distribution in the muffle by high-T-burner modules. Reduced scrap in the manufacturing of drawing glass tubes.



ROLLER PROCESS

Partial power adjustment of line burners means optimum glass temperature in width and depth – the best process control for flat glass.

MOULD PREHEATING



MOULDS

Customized moulds get customized burners – a hot iron for the constant dripping.

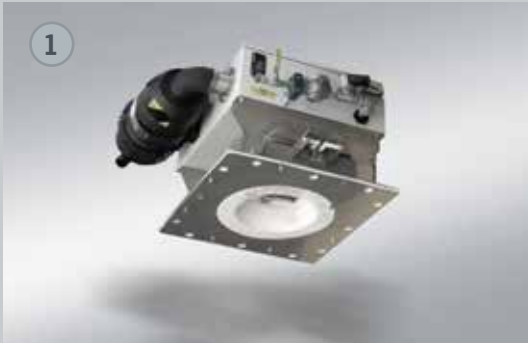


MOULDS FURNACE

Moulds preheating in its most compact form. Chamber furnaces of promeos combine the economic and environmental advantages of gas with the compactness and controllability of electric furnaces – simply G(L)AS(S)TEC.

FORMING

COOLING



GAS BLOWER BURNER

„Plug & Play“ – retrofit of existing tunnel? No problem with the new flameless Gas blower burner from promeos®. „Old“ flame burner out, new burners in – energy savings and improved process: no more hot spots, no soot, continuously adjustable power and reduced material wear.

DIRECTLY HEATED CIRCULATION FAN

High-end solution for absolutely uniform temperature management. promeos® offers directly heated circulation fans, both for new tunnels and for retrofitting. No more burners, no more internal tubes, no hot spots, no soot, no streams. promeos® – best solutions for stress-free manufacturing.

FINISHING



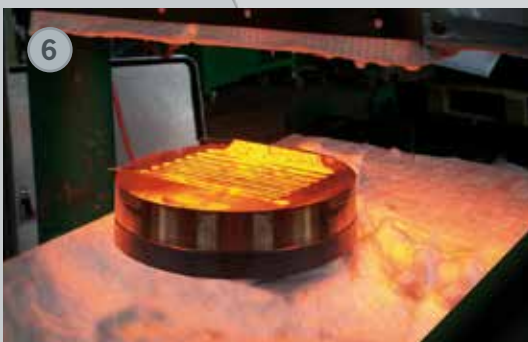
TEMPERING FURNACE FOR TABLE WARE

Curing furnaces with the combination of IR radiation and uniform convection from promeos® line burners. A multiply demonstrated scrap reduction of more than 10 % speaks for itself!



TEMPERING FURNACE FOR AMPOULES

Stress relief demanding pharmaceutical glasses in walking beam furnace. Gas furnaces with electric quality through useful combination of IR radiation and air circulation.

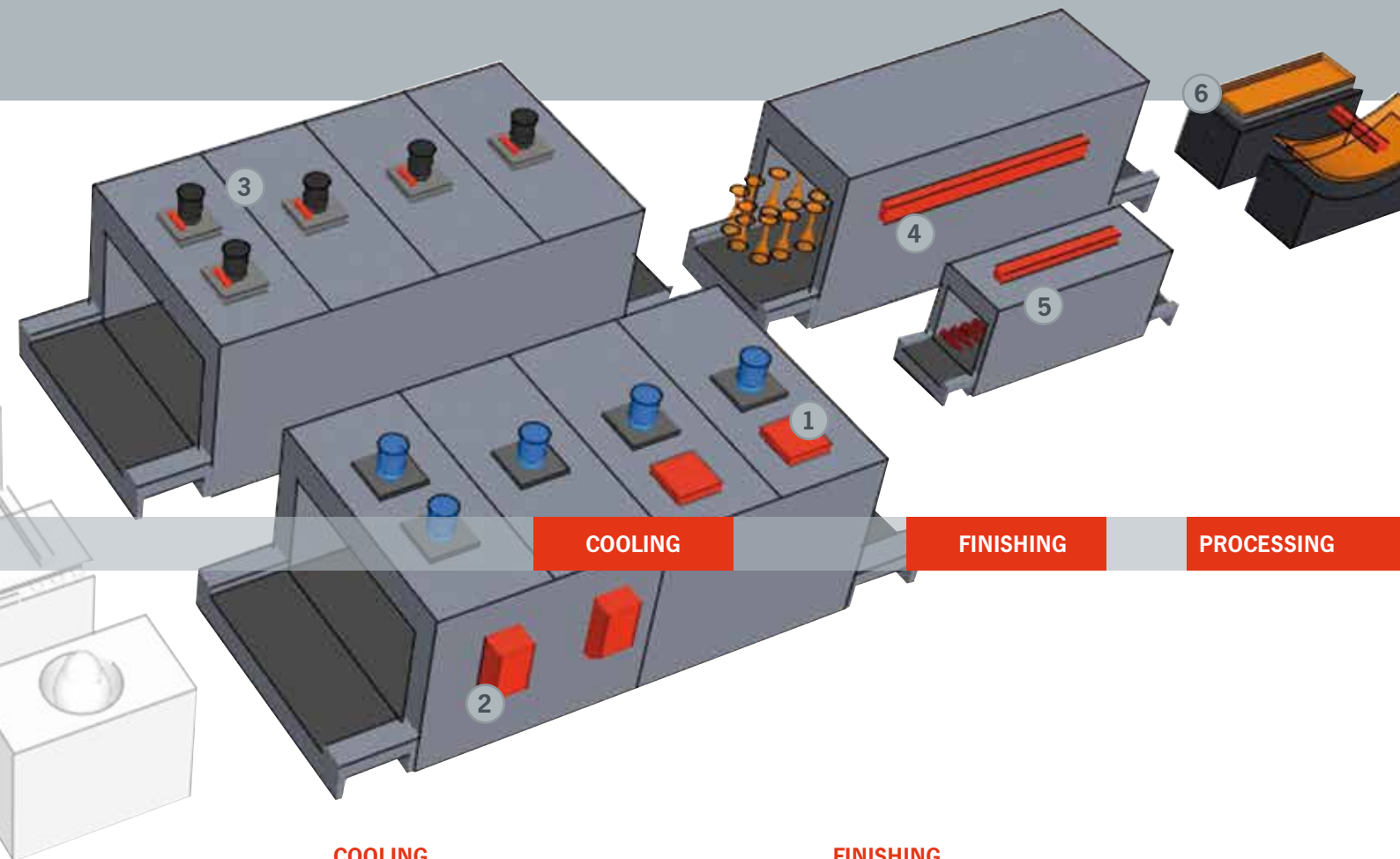


GLASS BENDING

The uniform softening of glass for gravity bending or vacuum forming utilizes both the IR radiation absorbed by the glass and the laminar off-gas flowing over the glass surface – best quality for the best products.

... TO THE COLD END!

Plug & Play solutions with the flameless gas burner technology!



COOLING

Directly heated circulation fan or flameless gas blower burner. The best technology for optimum cooling tunnels.

Controlled cooling requires precise temperature-time curves and uniform temperature fields. promeos® provides burner modules to be integrated into furnace wall or ceiling for „plug & play“ – retrofit of existing tunnels, as well as „high-end“ directly heated fan modules for ultra-homogenous circulation air heating in annealing lehrs. The glass is not exposed to any flame or „hot spot“. That saves energy and reduces scrap!

Fields of application

- unlimited
- all glasses / processes
- Temperatures up to 1.300 °C

FINISHING

Optimum heat treatment for stress relief, finishing and better products.

Flameless line type burners with high power modulation integrated into furnace wall or ceiling turn process control in refining into a „childs play“. The products pass through individually selected temperature segments – thus the end of the process chain defines the highlight. Best products for satisfied customers!

Fields of application

- Tempering furnace
- Stress relief furnaces
- Curing furnaces
- Surface refining
- Edge fusing / sealing
- Bending furnace

SIMPLY TOGETHER!

In more than 20 countries. More than 500 projects.

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