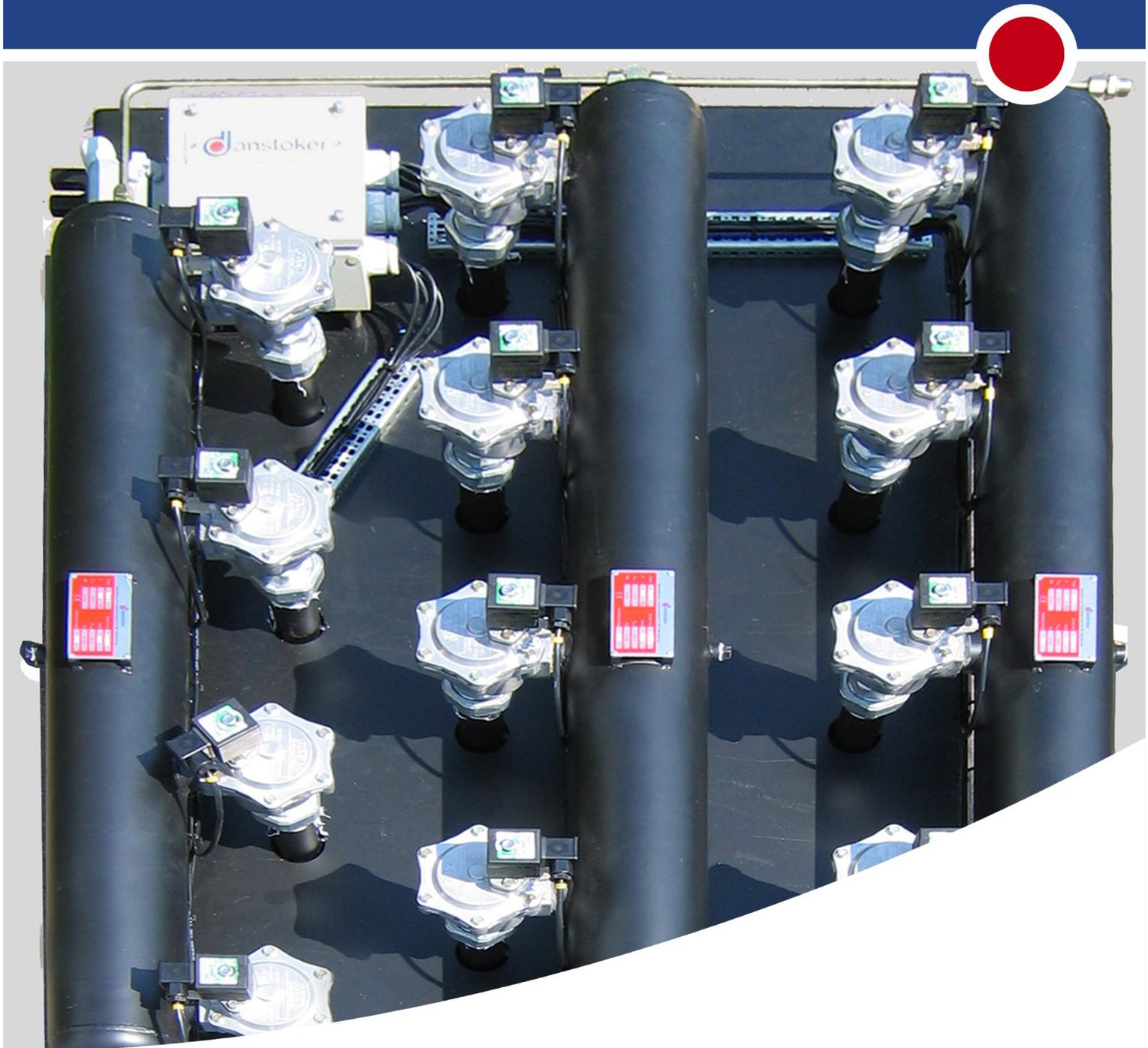


Cleaning of Boiler Tubes

# Automatic, Pneumatic Soot-cleaning of Boiler Tubes

Optimized interaction of shock wave intensity and its range of diffusion



Automatic, pneumatic soot-cleaning is an efficient method of removing soot deposits in boilers burning most types of fuels.

During the last many years Danstoker has gained extensive experience in this specific field and as a result has developed the system Danblast.

A precisely calculated number of special blast valves, will send a shock wave through the boiler, thereby minimizing the build-up of soot and other deposits on plates and in smoke tubes.

Via refinement of the Danblast system Danstoker has succeeded in considerably enhancing the shock wave intensity and the diffusion of the wave.

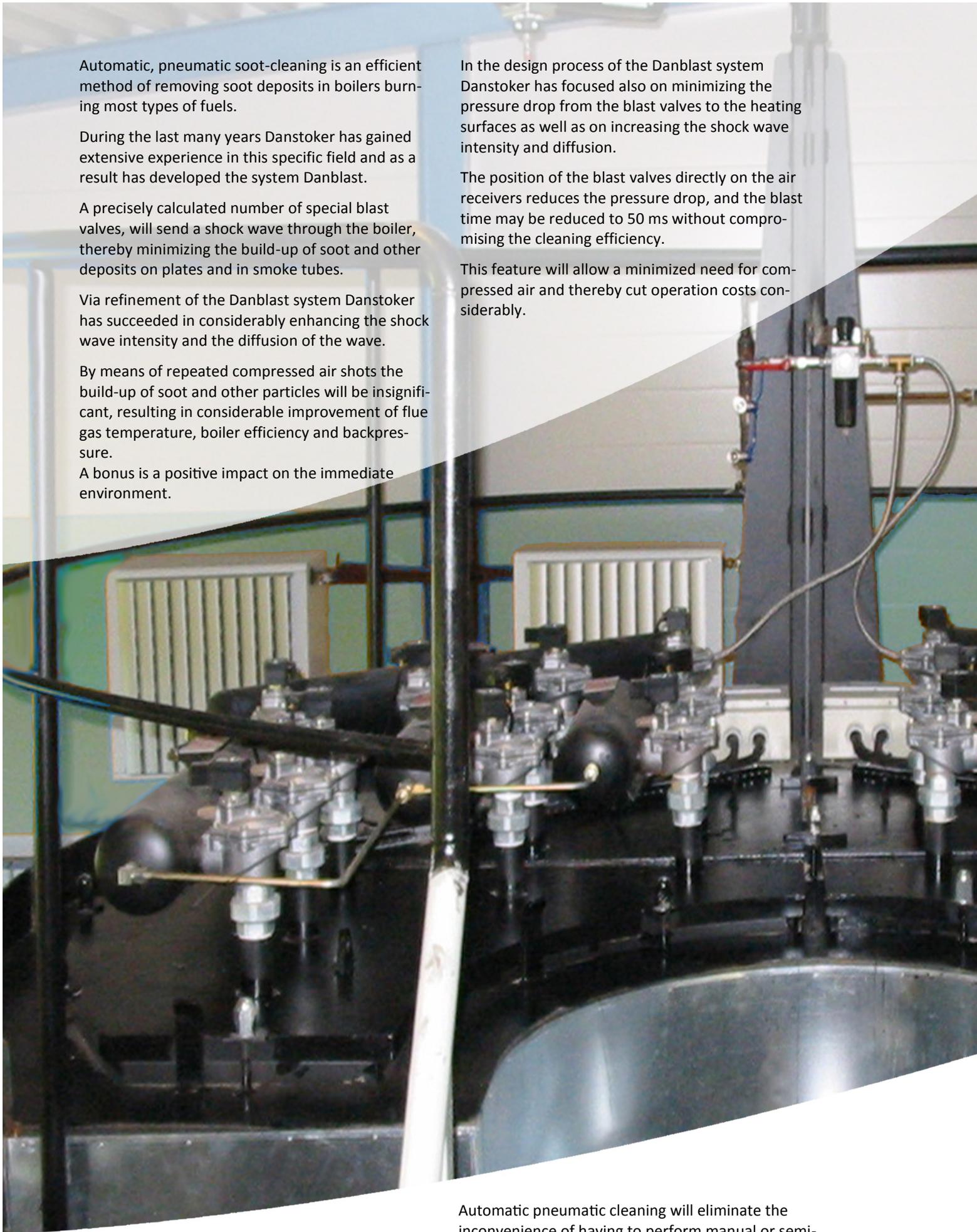
By means of repeated compressed air shots the build-up of soot and other particles will be insignificant, resulting in considerable improvement of flue gas temperature, boiler efficiency and backpressure.

A bonus is a positive impact on the immediate environment.

In the design process of the Danblast system Danstoker has focused also on minimizing the pressure drop from the blast valves to the heating surfaces as well as on increasing the shock wave intensity and diffusion.

The position of the blast valves directly on the air receivers reduces the pressure drop, and the blast time may be reduced to 50 ms without compromising the cleaning efficiency.

This feature will allow a minimized need for compressed air and thereby cut operation costs considerably.



**danblast**

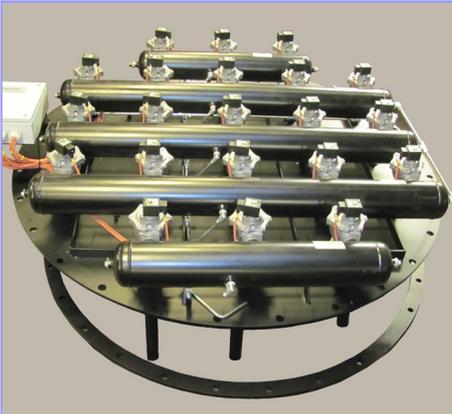
Automatic pneumatic cleaning will eliminate the inconvenience of having to perform manual or semi-automatic cleaning, flushing or steam cleaning – methods representing risks of expelling soot flakes into the environment or causing corrosion on the heating surfaces.



The PLC-programme in the control panel is conceived with easy service and minimized operation costs in mind. The system is adjustable in terms of operating and pausing intervals of each individual blast valve.

This feature thereby allows perfect cleaning and match to the boiler design and the possible need to adjust shot intervals in parts of the boiler. Hence, the number of shots and pausing intervals may be optimized in accordance with the experience accumulated by the operating personnel.

The process is monitored and features alarm functions and a trouble shooting programme.



All new boilers from Danstoker may be fitted with the Danblast system. However, the simplicity of the system makes it perfectly suited for retro-fitting on most existing boiler types and makes. Danstoker shall be pleased to prepare an offer for this service.

Mounting and retro-fitting is quite fast and easy. All internal compressed air connections are factory-fitted, internal electrical connections are pre-wired and connected using temperature-resistant cables and multi plugs to the junction box.



The Danblast system is supplied with an air train complete with the necessary components for operation, safety and pressure surveillance.



Constant high efficiency  
and reduced CO<sub>2</sub>  
emissions



The Danstoker horizontal and vertical bio-fuel boilers are fire-tube boilers, and if required combined with water-tube sections. Capacities ranging from 200 kW to 24,000 kW or 40 t/h steam up to 86 barg.

Typical fuels would be:

Forest residue, bark, sawmill/construction waste, saw dust, wood pellets, fruit stones, straw, agrifibres or traditional solid fuels.

All boiler are adapted to suit the special characteristics of the fuel to be used, and designed in a close co-operation with the supplier of the combustion and fuel-handling equipment.



During the last decades Danstoker has delivered more than 2500 exhaust gas boiler on a world-wide scale. The boilers are mounted after gas or diesel engines.

Design and development of special boilers and economisers for heat recovery of hot flue gases originating from chemical and industrial pro-cesses.

The waste heat is recovered in single, double or triple pass boilers, provided with low-temperature economisers or with integrated superheaters in the steam boilers. Capacities until 35 MW, 55 ton/h Steam. Design pressure up to 32 barg.



The development and manufacture of high-performance oil and gas boilers for the energy sector has made Danstoker known as one of Europe's leading boilermakers, featuring a wide range of shell and tube boilers with capacities ranging from 800 to 50,000 kW or 0,2 to 55 ton/h steam up to 40 barg and superheated unto 450°C.

Special boilers as combined watertube-radiation section with a firetube convection section until 50MW, 55 ton/h steam at max. 86 barg and superheated unto 500°C.



One of the greatest challenges that the World is facing within this decade will be to encourage market players to act in a way so as to protect and improve the environment.

At Danstoker we are of the firm belief that there are no conflicting interests between economic development and environment-protection – we must have a common goal now and for the future generations.

Danstoker has elaborated upon their own Environment Charter, based on the Environment Charter of the ICC: “The Business Charter for Sustainable Development - 16 principles”.



The service staff in the Danstoker after-sales division has many years of experience within a broad variety of jobs regarding energy-technical plants, thereby enabling them to provide quick and efficient service on Danstoker boilers as well as on boilers of other makes.

As we are often already acquainted with the plants, we are able to quickly conduct the necessary adjustments and/or repairs.

Contact: [service@danstoker.com](mailto:service@danstoker.com)