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## Next generation of sustainable HICON/H2® bell-type furnace systems

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Bell-type furnaces are an integral part of cold rolling mills for carrying out the annealing process. The technology of high convection in a hydrogen atmosphere (HICON/H2®) was introduced to the market as early as 1972. Continuous further developments have increased performance, quality, efficiency and reduced costs.

This next generation of sustainable bell-type furnace systems, called GREENBAFx®, has an innovative system for heating energy into the process (direct heating) and returning the energy released during cooling (heat exchange).

In the new system, the heating energy is introduced directly into the process gas. For this purpose, an electrical heating system is arranged inside the annealing base.

The impeller is designed so that it flows through the heater without flow losses.

To prevent lubricant residues from adhering to the electrical heating elements, a special temperature/atmosphere program cleans the heating elements before each annealing process.

The heating hood, cooling hood and protective hood are replaced by a process hood. Cooling is provided by a cooler integrated into the annealing base.

There is no need to change heating bell and cooling bell. Fewer handling and operating costs represent a significant operational and logistical simplification.

Furthermore, less space is required than with conventional systems.

The system is highly efficient and emission-free thanks to the reduction in heat loss. CO2 and NOx emissions are completely avoided.

It is also possible to configure a hybrid-heated system. This is additionally equipped with a heating hood and can now be operated either with the integrated electric direct heating and/or with a gas-fired heating hood (natural gas, hydrogen).

This offers the advantage of being able to flexibly select the type of heating depending on the current media availability or costs.

Retrofitting in existing systems is possible.

Compared to a classic, gas-fired system, enormous amounts of CO2 and NOx can be saved.

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