The Inova Grate
New standard in combustion technology
The Inova Grate – new standard in combustion technology

Designed for superior cost-effectiveness and comprehensive environmental soundness, the latest Hitachi Zosen Inova grate fulfils all customer requirements expected from an efficient, state-of-the-art combustion system for energy-from-waste applications.

Backed by the know-how and decades of experience accrued by the Hitachi Zosen Inova Group’s leading combustion specialists, the Inova grate defines the new benchmark in combustion technology for energy-from-waste plants.

The key enhancements at a glance

Improved cost-effectiveness thanks to optimised design and improved materials
- Improved materials and design modifications to critical wear parts ensure a longer service life, higher availability, and simplified maintenance procedures.
- Longer grate bars result in better space utilisation and simplify access to moving parts. This expedites assembly, maintenance, and service work.
- The smaller inclination angle of the grate reduces the overall height of the structure as well as construction costs.
- Smart assembly procedures make overhaul work easier.

Thanks to these optimisation measures, the Inova grate is a future-oriented, modern and effective high-performance combustion system.

The Inova grate – reliable and stable in operation

The fuel from the waste pit is fed to the combustion chamber via the feed hopper. The ram feeder uniformly distributes the fuel across the four-zone grate. The process steps – drying, ignition, combustion, and burnout – can be controlled separately. Swift adjustment of airflows and grate motion in every zone at all times responds to process fluctuations. The inclination of the grate, the drop-off after the main combustion zone, and the horizontal burnout zone ensure excellent burnout of all waste fractions.
Excellent burnout quality for every fuel quality

The Inova grate is customized so that it can continually guarantee excellent combustion control and burnout quality to match the respective calorific value range.

Three configurations ensure the reliable treatment of fuels with different calorific value. With an inclination of 10° in the drying and main combustion zone as well as the horizontal burnout zone, fuels are continuously conveyed and treated according to the process needs. This results in homogeneous combustion and optimised burnout of different waste qualities.

Combustion is controlled even when fuel compositions fluctuate

Regardless of the quality of the waste, the individually controllable ram feeders ensure consistent fuel bed thickness on the grate resulting in a uniform thermal load on the grate, a more stable combustion process, and a long grate service life.

Flexible grate cooling optimises operating costs

Depending on the requirements, the grate is either air-cooled or configured for combined water/air cooling. While the air-cooled grate is adequate for low calorific values, water-cooled grate elements in the first two zones ensure more precise process control for high calorific values, resulting in a longer service life. The coolant piping is optimally integrated into the design of the grate.
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