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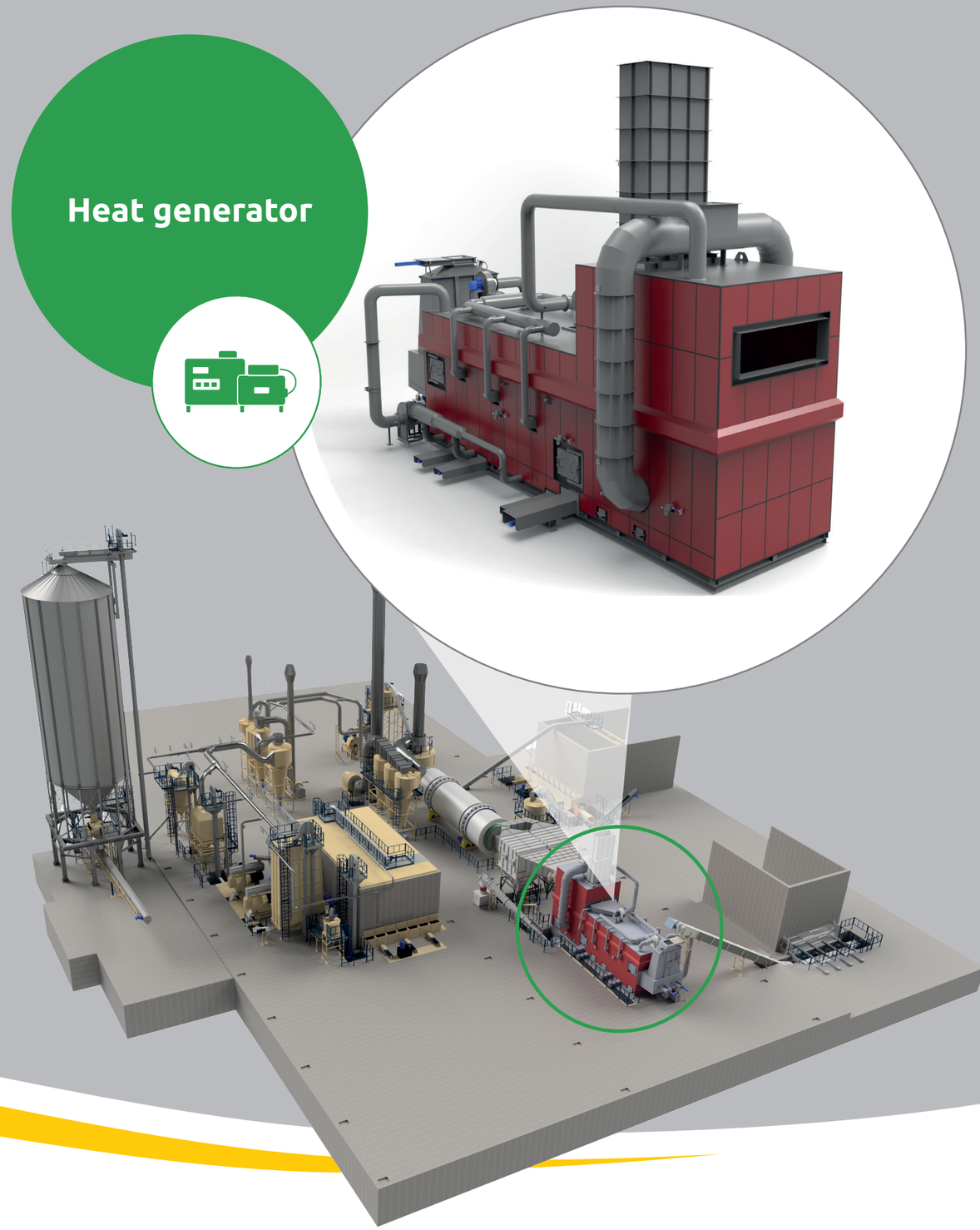
ul. Podbiałowa 9, 61-680 Poznań,
tel. +48 61 875 07 15, e-mail: office@comerc.pl,
www.comerc.pl



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Heat generator

Heat generator with movable grate is designed for biomass combustion and heat generation for drum dryer. As a fuel heat generator uses wood chips, bark, wood wastes, peat or even lignin with humidity from 30 to 55%.

Heat generator consists of a solid body with inner ceramic thermal insulation, external insulation layer (100-150 mm), movable grate, fuel tank with feeding mechanism, air ducts and air supply fans, hydraulic drive units for movable grate, fuel feeding scrapers, ash removal scrapers, chimney for discharging combustion products.

Movable grate consists of two frames - movable and fixed one and as well as fire-bars mounted on them. Fire-bars are made of cast iron with addition of chromium (not less than 20%) and can work at temperature above 1000°C.

Principle of operation

According to applied program, fuel for heat generator is fed by chain conveyor into grate located in the first area, where fuel is dried with hot air and with heat which radiates from generator's walls. Dried fuel is fed into the second area by movable grate. In second zone fuel is gasified and partly combusted due to high temperature and the first stage air coming from under the grate. The second stage air is supplied in order to burn gas, arising above the fuel layer. Complete fuel combustion takes place in the third area by third stage airflow.

Ash generated in the fuel combustion process goes to ash removal channel, from which is removed by scraper mechanism into special tank.

The entire process of feeding fuel into furnace, fuel combustion and ash removal is carried out automatically according to programmed parameters.

Basic technical parameters of heat generator	
Model/Type	CGCA / for solid fuel, with movable grate
Material	boiler steel and stainless steel
Overlay	heat resistant paint (600°C), galvanized steel
Type of furnace	with buffer tank, automatic water dosing system, movable grate, fuel feeding hydraulic cylinders, automatic ash removal
Fuel	low quality wood, wood wastes, sawdust with humidity from 35% to 55%, wood chips, bark (ability to work with feeding by up to 90% of bark)
Minimum acceptable fuel calorific value	1700 kcal
Fuel consumption (per hour)	approx. 500 kg/1 MW
Maximum fuel size	5x20x50 mm
Maximum ash content	5,5%
Thermal power	2 – 15 MW
Temperature of combustion products at the output of heat generator	750 – 850 °C
Temperature of combustion products at the input of dryer's drum	450 – 500 °C
Thickness of ceramic thermal insulation	120 mm
Thickness of mineral thermal insulation	100 mm
Manufacturer	Axis

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