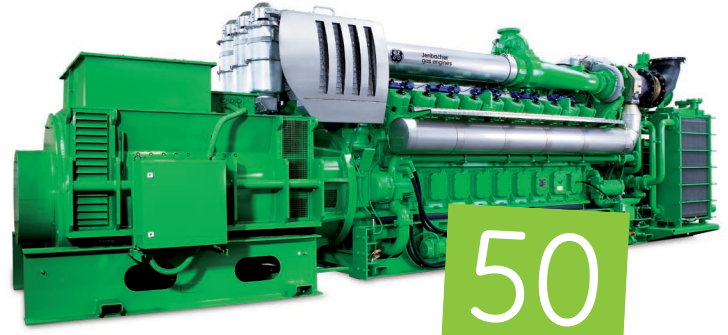


Jenbacher type 6



50
years of power

Jenbacher gas engines

cutting-edge technology

Continuously refined based on our extensive experience, the Jenbacher type 6 engines are reliable, advanced products serving the 1.8 to 3 MW power range. Its 1,500 rpm engine speed results in a high power density and low installation costs. The type 6 pre-combustion chamber achieves maximum efficiency with low emissions. Proven design and optimized components enable a service life of 60,000 operating hours before the first major overhaul.

reference installations

model, plant

key technical data

description

J612 GS
Beretta, industry;
Gardone, Italy

Fuel Natural gas
Engine type 1 x JMS 612 GS-N.L
Electrical output 1,457 kW
Thermal output 5,241 MBTU/hr
Commissioning December 1998

The generated electricity covers the entire electricity requirement of the Beretta factory, while the heat is used for the production process. By using our cogeneration system, Beretta was able to reduce the energy supply costs for the factory by 30%.



J616 GS
Mussafah Industrial
City, residential area;
Abu Dhabi, UAE

Fuel Natural gas
Engine type 3 x JGS 616 GS-N.L
Electrical output 6,018 kW
Commissioning June 2003

Three Jenbacher generator sets supply power generation for continuous operation of compressor chillers to provide chilled water for cooling to a residential area that incorporates apartments, shopping centers, mosques, a police station, and a cinema complex.



J616 GS
Van der Arend Roses;
Maasland,
The Netherlands

Fuel Natural gas
Engine type 2 x JMS 616 GS-N.LC
Electrical output 4,376 kW
Thermal output 17,950 MBTU/hr
Commissioning February
and December 2003

The Jenbacher cogeneration systems provide power for artificial lighting, heat and CO₂ to increase the greenhouse rose production capabilities. The CO₂ produced from the exhaust gas of the engines is used for fertilization in the greenhouses.



J620 GS
Biomass power plant;
Güssing, Austria

Fuel Wood gas
Engine type 1 x JMS 620 GS-S.L
Electrical output 1,964 kW
Thermal output 8,504 MBTU/hr
(district heating 158°F/194°F)
Commissioning April 2002

The wood gas produced and cleaned in a fluidized bed/steam reactor is converted into heat and power in the Jenbacher cogeneration plant and forms an important component in an innovative project aimed at meeting 100% of the region's energy needs from renewable sources.



technical features

feature	description	advantages
Four-valve cylinder head	Centrally located purged pre-combustion chamber, developed using advanced calculation and simulation methods (CFD)	<ul style="list-style-type: none"> - Minimized charge-exchange losses - Highly efficient and stable combustion - Optimal ignition conditions
Heat recovery	The oil heat exchanger can be specified as a two-stage plate heat exchanger	<ul style="list-style-type: none"> - Maximum thermal efficiency, even at high and fluctuating return temperatures
Air/fuel mixture charging	Fuel gas and combustion air are mixed at low pressure before entering the turbocharger	<ul style="list-style-type: none"> - Main gas supply with low gas pressure - Mixture homogenized in the turbocharger
Pre-combustion chamber	The ignition energy of the spark plug is amplified in the pre-combustion chamber	<ul style="list-style-type: none"> - Highest efficiency - Lowest NOx emission values - Stable and reliable combustion
Special gas mixer	Specific version for special gases with low calorific values	<ul style="list-style-type: none"> - Trouble-free operation with special gases with large calorific value differences

technical data

Configuration	V 60°		
Bore (inch)	7.48		
Stroke (inch)	8.66		
Displacement/cylinder (cu.in)	380.7		
Speed (rpm)	1,500 with gearbox (60 Hz)		
Mean piston speed (in/s)	433		
Scope of supply	Generator set, cogeneration system		
Applicable gas types	Natural gas, flare gas, biogas, landfill gas, sewage gas. Special gases (e.g., coal mine gas, coke gas, wood gas, pyrolysis gas)		
Engine type	J612 GS	J616 GS	J620 GS
No. of cylinders	12	16	20
Total displacement (cu.in)	4,568	6,090	7,613

Dimensions l x w x h (inch)

Generator set	J612 GS	360 x 90 x 110
	J616 GS	400 x 90 x 110
	J620 GS	420 x 90 x 110
Cogeneration system	J612 GS	360 x 90 x 110
	J616 GS	400 x 90 x 110
	J620 GS	420 x 90 x 110

Weights empty (lbs)

	J612 GS	J616 GS	J620 GS
Generator set	41,240	53,200	66,180
Cogeneration system	42,340	54,300	67,500

outputs and efficiencies

Natural gas

1,500 rpm | 60 Hz

NOx <	Type	Pel (kW) ¹	η_{el} (%)	Pth (MBTU/hr) ²	η_{th} (%)	η_{tot} (%)
1.1 g/bhp.hr	612	1,801	42.9	6,189	43.2	86.1
	616	2,390	42.6	8,295	43.4	86.1
	620	2,994	42.3	10,447	43.3	85.6
0.6 g/bhp.hr	612	1,801	42.2	6,365	43.7	85.9
	616	2,390	42.2	8,368	43.3	85.4
	620	2,994	41.6	10,618	43.3	84.9

Biogas

1,500 rpm | 60 Hz

NOx <	Type	Pel (kW) ¹	η_{el} (%)	Pth (MBTU/hr) ²	η_{th} (%)	η_{tot} (%)
1.1 g/bhp.hr	612	1,432	39.1	5,702	45.6	84.7
	616	1,914	39.2	7,574	45.4	84.6
	620	2,388	39.1	9,481	45.5	84.6
0.6 g/bhp.hr	612	1,432	38.5	5,692	44.8	83.3
	616	1,914	38.6	7,567	44.7	83.3
	620	2,388	38.5	9,471	44.7	83.2

1) Electrical output based on ISO standard output and standard reference conditions according to ISO 3046/I-1991 and p.f. = 1.0 according to VDE 0530 REM with respective tolerance; minimum methane number 80 for natural gas

2) Total heat output with a tolerance of +/- 8%, exhaust gas outlet temperature 248°F, for biogas exhaust gas outlet temperature 356°F

All data according to full load and subject to technical development and modification.