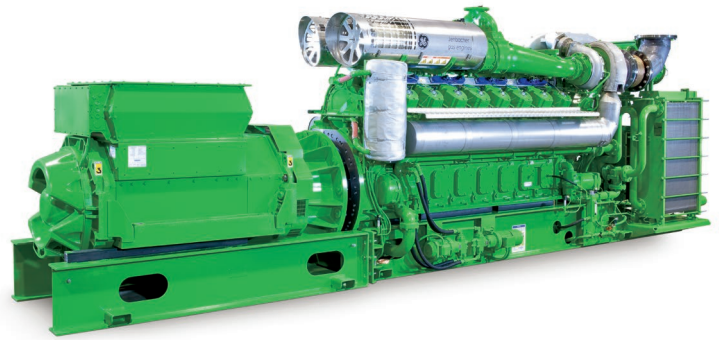


Jenbacher type 6



cutting-edge technology

Continuously refined based on our extensive experience, the Jenbacher type 6 engines are reliable, advanced products serving the 1.5 to 4.4 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. The new J624 model is available with the new technology of 2-stage turbocharging, which offers high electrical efficiency combined with maximized flexibility regarding ambient conditions.

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 1,536 kW
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 centres, mosques, a police station, and a cinema complex.



J620 GS
Wijnen Paprika; Egchel,
The Netherlands

Fuel Natural gas
Engine type 3 x JMS 620 GS-N.LC
Electrical output 9,123 kW
Thermal output 10,773 kW
Commissioning June 2006 (1st, 2nd engine),
March 2007 (3rd engine)

The Jenbacher cogeneration systems provide power, heat and CO₂ to increase the Wijnen greenhouse paprika production. The CO₂ produced from the exhaust gas of the engines is cleaned and used for fertilization in the greenhouse.



**J624 GS 2-stage
turbocharged**
Serres Vinet
greenhouse, Forclum
Machecoul, France

Fuel Natural gas
Engine type 2 x J624 GS-N.
..... 2-stage turbocharged
Electrical output 8,800 kW
Thermal output 8,024 kW
Commissioning January 2011

At this greenhouse facility, two Jenbacher J624 2-stage turbocharged gas engines enable French grower Serres Vinet to generate all of the hot water and electricity required for its extensive tomato and lettuce greenhouse operations. These are the first 2-stage turbocharged gas engines in France and give Serres Vinet the flexibility to switch among electrical energy, thermal energy and fuel sources as economics dictate.



J620 GS
Barakatullah Electro
Dynamics Ltd. (BEDL),
Fenchuganj,
Bangladesh

Fuel Natural gas
Engine type 19 x J620 GS-N.
Electrical output 51 MW
Commissioning October 2009

The plant in the town of Fenchuganj is the first of several emergency "rental" power plants that the Bangladesh government installed to help end widespread chronic energy shortages occurring throughout the Southeast Asian nation. The plant features 19 of GE's low-emission, J620 Jenbacher gas engine generator sets that run on natural gas. The electricity produced by the power plant, which was commissioned in October 2009, is sold to the national grid.



technical features

feature	description	advantages
Four-valve cylinder head	Centrally located purged pre-combustion chamber, developed using advanced calculation and simulation methods (CFD)	Minimized charge-exchange losses, highly efficient and stable combustion, optimal ignition conditions
Heat recovery	Flexible arrangement of heat exchanger, two stage oil plate heat exchanger on demand	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	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	Highest efficiency, lowest NOx emission values, stable and reliable combustion
Gas dosing valve	Electronically controlled gas dosing valve with high degree of control accuracy (for natural gas)	Very quick response time, rapid adjustment of air/gas ratio, large adjustable calorific value range
Miller valve timing	Camshaft with special inlet cam profile (for natural gas)	Reduced maximum compression temperature and increased safety margin to knocking limits, high efficiency through optimized ignition timing
2-stage turbocharging	Next generation turbo charging technology concept (for J624 only)	Improved performance in terms of output and efficiency, increased flexibility regarding ambient conditions
Steel piston	Strong design and material properties for high peak pressure	Increased output, reduced emissions, increased efficiency

technical data

Configuration	V 60°			
Bore (mm)	190			
Stroke (mm)	220			
Displacement/cylinder (lit)	6.24			
Speed (rpm)	1,500 (50 Hz); 1,500 with gearbox (60 Hz)			
Mean piston speed (m/s)	11 (1,500 1/min)			
Scope of supply	Generator set, cogeneration system, containerized package			
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	J624 GS*
No. of cylinders	12	16	20	24
Total displacement (lit)	74.9	99.8	124.8	149.7

Dimensions l x w x h (mm)¹

Containerized package	J612 - J620	15,000 x 6,000 x 7,300
Generator set	J612 GS	7,600 x 2,200 x 2,800
	J616 GS	8,300 x 2,200 x 2,800
	J620 GS	8,900 x 2,200 x 2,800
	J624 GS*	12,100 x 2,450 x 2,900
Cogeneration system	J612 GS	7,600 x 2,200 x 2,800
	J616 GS	8,300 x 2,200 x 2,800
	J620 GS	8,900 x 2,200 x 2,800
	J624 GS*	12,100 x 2,450 x 2,900

Weights empty (kg)¹

	J612 GS	J616 GS	J620 GS	J624 GS*
Generator set	20,600	26,000	30,700	49,900
Cogeneration system	21,100	26,500	31,300	49,500

1) Dimensions and weights are valid for 50 Hz applications.
*J624 with 2-stage turbocharging

outputs and efficiencies

Natural Gas

1,500 rpm | 50 Hz

1,500 rpm | 60 Hz

NOx <	Type	Pel (kW) ¹	ηel (%)	Pth (kW)	ηth (%)	ηtot (%)	Pel (kW) ¹	ηel (%)	Pth (kW)	ηth (%)	ηtot (%)
500 mg/m ³ _N	612	2,004	44.8	1,883	42.0	86.8	2,004	44.8	1,883	42.0	86.8
	616	2,679	44.9	2,510	42.0	86.9	2,679	44.9	2,510	42.0	86.9
	620	3,352	44.9	3,110	41.7	86.6	3,352	44.9	3,110	41.7	86.6
	624*	4,401	46.6	3,874	41.0	87.6	4,401	46.6	3,874	41.0	87.6
250 mg/m ³ _N	612	2,004	43.5	1,932	42.0	85.5	2,004	43.5	1,932	42.0	85.5
	616	2,679	43.6	2,575	41.9	85.6	2,679	43.6	2,575	41.9	85.5
	620	3,352	43.7	3,211	41.8	85.5	3,352	43.7	3,211	41.8	85.5
	624*	4,401	45.2	4,044	41.5	86.7	4,401	45.2	4,044	41.5	86.7

*J624 with 2-stage turbocharging

Biogas

1,500 rpm | 50 Hz

1,500 rpm | 60 Hz

NOx <	Type	Pel (kW) ¹	ηel (%)	Pth (kW)	ηth (%)	ηtot (%)	Pel (kW) ¹	ηel (%)	Pth (kW)	ηth (%)	ηtot (%)
500 mg/m ³ _N	612	1,822	42.9	1,787	42.1	84.9	1,822	42.9	1,787	42.1	85.0
	616	2,433	42.9	2,385	42.1	85.0	2,433	42.9	2,385	42.1	85.0
	620	3,044	43.0	2,982	42.1	85.1	3,044	43.0	2,982	42.1	85.1
250mg/m ³ _N	612	1,818	42.3	1,805	42.0	84.3	1,822	42.4	1,805	42.0	84.4
	616	2,433	42.4	2,405	42.0	84.4	2,433	42.4	2,405	42.0	84.4
	620	3,044	43.0	2,982	42.1	85.1	3,044	42.5	3,008	42.0	84.5

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

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