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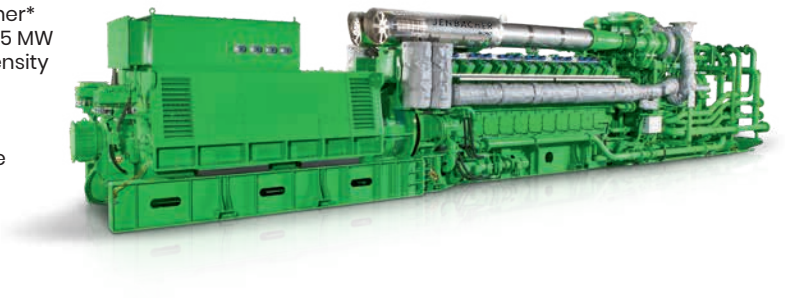
Jenbacher type 6

Cutting-edge technology

Continuously refined based on our extensive experience, Jenbacher* type 6 engines are reliable, advanced products serving the 2 to 4.5 MW power range. The 1,500 rpm engine speed provides high power density and low installation costs. The type 6 pre-combustion chamber enables high efficiency with low emissions. Proven design and enhanced components support a service life of 60,000 operating hours before the first major overhaul. The J624 model features the advanced 2-stage turbocharging technology, which offers high electrical efficiency combined with improved flexibility over a wide range of ambient conditions.



Reference installations

J616 & J620 BMW in Regensburg and Leipzig, Germany

Fuel	Engine type	Electrical output	Thermal output	Commissioning
Natural gas	4 x J616 1 x J620	10,700 kW 3,000 kW	9,600 kW 3,120 kW	2011 2007

The cogeneration plants installed at BMW Group**'s factories in Regensburg and Leipzig can generate on-site power and capture and use engine waste heat to support the factories' production processes. Winter heating is obtained through a combination of the engines' waste heat and heat from existing boilers.

J620 Coca-Cola Hellenic, Romania

Fuel	Engine type	Electrical output	Thermal output	Commissioning
Natural gas	2 x J620	6,082 kW	2,208 kW	2009

Since 2009, two J620 engines have been supplying the Coca-Cola Hellenic Bottling Company with energy and heat, as well as hot and chilled water for its operations. By fulfilling the facility's on-site power needs, the installed engines help reduce the company's carbon footprint and lower its overall operational costs.

J624 Hakha CES in Daejeon, South Korea

Fuel	Engine type	Electrical output	Thermal output	Commissioning
Natural gas	6 x J624	25,182 kW	25,350 kW	2014

With a total of six J624 engines running on natural gas, the Hakha, Daejeon site reaches a total of 25,182 kW of electrical output while achieving total efficiency of 87%. With the installation of these Jenbacher engines, the site has become one of the largest gas engine plants in South Korea.

J624 2-stage turbocharged Serres Vinet Greenhouse in Machecoul, France

Fuel	Engine type	Electrical output	Thermal output	Commissioning
Natural gas	2 x J624 2-stage turbocharged	8,800 kW	8,024 kW	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 the energy sources to either provide electrical energy and thermal energy as economics dictate.

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Technical features

Feature	Description	Advantages
Four-valve cylinder head	Centrally located purged pre-combustion chamber, developed using advanced calculation and simulation methods (CFD)	Reduced 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	High 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	High 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
2-stage turbocharging	Next generation turbocharging technology concept (for J624 only)	Improved performance in terms of output and efficiency, increased flexibility regarding ambient conditions

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	J616	J620	J624
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)		
Containerized package	J612–J620	12,000/15,000 x 3,000/6,000 x 8,100
	J624	17,000 x 6,000 x 8,400
Generator set	J612	7,600 x 2,200 x 2,800
	J616	8,300 x 2,200 x 2,800
	J620	8,900 x 2,200 x 2,800
	J624	12,800 x 2,500 x 2,900
Cogeneration system	J612	7,600 x 2,200 x 2,800
	J616	8,300 x 2,200 x 2,800
	J620	8,900 x 2,200 x 2,800
	J624	12,800 x 2,500 x 2,900

Weights empty (kg)	J612	J616	J620	J624
Generator set	24,000	29,200	36,900	52,100
Cogeneration system	24,500	29,700	37,500	52,100

Dimensions and weights are valid for 50 Hz applications

Outputs and efficiencies

Natural gas

		1,500 1/min | 50 Hz					1,500 1/min | 60 Hz				
NOx <	**Type**	**Pel (kW)[1]**	**ηel (%)[1]**	**Pth (kW)[2]**	**ηth (%)[2]**	**ηtot (%)**	**Pel (kW)[1]**	**ηel (%)[1]**	**Pth (kW)[2]**	**ηth (%)[2]**	**ηtot (%)**
500 mg/m³N	J612	2,017	45.2	1,930	43.3	88.2	2,000	44.4	1,941	43.6	88.0
	J616	2,689	45.5	2,527	42.9	88.4	2,662	45.1	2,541	43.2	88.3
	J620	3,360	45.6	3,172	43.0	88.6	3,328	45.2	3,186	43.2	88.4
	J624	4,502	47.0	3,752	39.2	86.2	4,457	46.5	3,790	39.4	85.9
250 mg/m³N	J612	2,017	44.4	1,936	42.7	86.8	2,000	43.6	1,947	42.9	86.6
	J616	2,676	44.7	2,548	42.5	87.2	2,662	44.3	2,562	42.8	87.0
	J620	3,360	44.8	3,191	42.5	87.3	3,328	44.4	3,205	42.7	87.1
	J624	4,502	45.9	4,010	40.9	86.8	4,457	45.5	4,036	41.0	86.5

Biogas

		1,500 1/min | 50 Hz					1,800 1/min | 60 Hz				
NOx <	**Type**	**Pel (kW)[1]**	**ηel (%)[1]**	**Pth (kW)[2]**	**ηth (%)[2]**	**ηtot (%)**	**Pel (kW)[1]**	**ηel (%)[1]**	**Pth (kW)[2]**	**ηth (%)[2]**	**ηtot (%)**
500 mg/m³N	J612	1,997	44.3	1,799	39.9	84.3	2,000	43.9	1,825	40.5	83.9
	J616	2,676	44.6	2,399	39.9	84.5	2,662	44.2	2,435	40.5	84.2
	J620	3,348	44.6	2,999	39.9	84.6	3,328	44.3	3,029	40.5	84.3
250 mg/m³N	J612	1,817	43.0	1,717	40.6	83.6	1,798	42.5	1,727	40.8	83.3
	J616	2,433	43.1	2,292	40.6	83.8	2,411	42.8	2,305	40.9	83.6
	J620	3,044	43.2	2,863	40.6	83.8	3,022	42.9	2,878	40.8	83.7

1) Technical data according to ISO 3046
2) Total heat output with a tolerance of +/- 8 %, exhaust gas outlet temperature 120°C, for biogas gas outlet temperature 180°C
All data according to full load and subject to technical development and modification.
Further engines versions available on request.

IJB-119006-EN

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