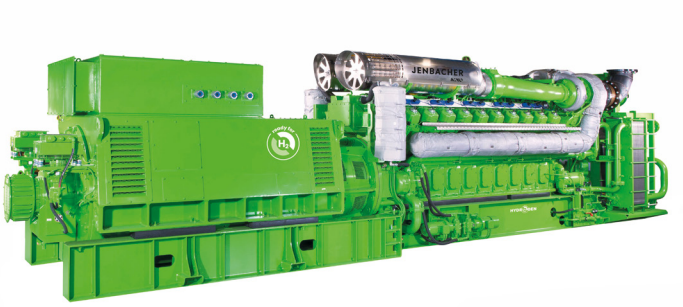
JENBACHER

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 and total efficiencies combined with improved flexibility over a wide range of ambient conditions.



Reference installations

J612 Biomont Énergie SEC, Canada

Energy source	Engine type	Electrical output	Thermal output	Commissioning
Landfill gas	3 x J612	16,378 MBTU/hr	17,742 MBTU/hr	2017



Since 2017, the Biomont Énergie SEC plant has converted the biogas generated from landfill into valuable renewable electricity and thermal energy. The cogeneration plant is centered on three Jenbacher J612 engines, each with a capacity of 5,459 MBTU/hr of electrical output. A major Canadian utility company buys the green electricity produced by the plant, which generates enough electricity to power the equivalent of about 2,000 homes*.

*The Daily — Households and the Environment Survey: Energy use, 2019, https://www150.statcan.gc.ca/n1/daily-quotidien/220502/dq220502b-eng.htm

J624 IMG Energy Solutions, U.S.

Energy source	Engine type	Electrical output	Commissioning
Pipeline gas	5 x J624	71,652 MBTU/hr	2019



IMG Energy Solutions' Wolf Run project consists of five Jenbacher containerized 14,330 MBTU/hr J624 engines for a total of 71,652 MBTU/hr. IMG, a leading producer in distributed generation, leverages high efficiency Jenbacher engine technology for its flexible, quick start, base load power generation capabilities. IMG's plants are designed to optimize intermittent renewables while maintaining a reliable, low carbon intensity power grid.

J620 Shandong Minhe Biological Technology Co., LTD, China

Energy source	Engine type	Electrical output	Thermal output	Commissioning
Biogas	3 x J320 1 x J620	21,155 MBTU/hr	22,520 MBTU/hr	2009, 2018



The farm's biogas power generation project uses chicken manure and sewage fermentation to produce biogas. Commissioned in 2009, the facility is powered by three Jenbacher J320 biogas-fueled engines, and a J620 biogas-fueled engine was added in 2018.

J616 & J620 BMW Group, Germany

Energy source	Engine type	Electrical output	Thermal output	Commissioning
Pipeline gas	5 x J616, 2 x J620	67,558 MBTU/hr	64,248 MBTU/hr	2009, 2011 2012, 2016



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

* © Copyright BMW AG

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 NO_x 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 (inch)	7.48
Stroke (inch)	8.66
Displacement / cylinder (cu.in)	381
Speed (rpm)	1,500 with gearbox (60 Hz)
Mean piston speed (in/s)	433 (1,500 rpm)
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 (cu.in)	4,568	6,090	7,613	9,135

Dimensions l x w x h (inch)		
Containerized package	J612–J624	475 – 810 x 120 – 240 x 295
Generator set	J612 J616 J620 J624	360 x 90 x 110 400 x 90 x 110 420 x 90 x 110 570 x 100 x 120
Cogeneration system	J612 J616 J620 J624	360 x 90 x 110 400 x 90 x 110 420 x 90 x 110 570 x 100 x 120

Weights empty (lbs)	J612	J616	J620	J624
Generator set	53,360	67,470	80,030	112,680
Cogeneration system	54,460	68,570	81,360	112,680

Outputs and efficiencies

Natural gas **1,500 rpm | 60 Hz**

NO_x <	Type	Pel (kW) [1]	Pth (MBTU/hr) [2]	ηel (%) [1]	ηth (%) [2]	ηtot (%)
1.0 g/bhp.hr	J612	1,979	6,495	44.7	43.0	87.8
	J616	2,646	8,540	45.2	42.7	87.9
	J620	3,331	10,823	45.2	43.0	88.2
	J624	4,481	13,501	46.6	41.1	87.7
0.5 g/bhpr	J612	1,979	6,517	44.0	42.5	86.5
	J616	2,646	8,632	44.4	42.4	86.8
	J620	3,331	10,888	44.4	42.5	86.9
	J624	4,481	13,726	45.7	41.0	86.7

Biogas **1,500 rpm | 60 Hz**

NO_x <	Type	Pel (kW) [1]	Pth (MBTU/hr) [2]	ηel (%) [1]	ηth (%) [2]	ηtot (%)
1.0 g/bhp.hr	J612	1,979	6,039	44.1	39.5	83.6
	J616	2,646	8,053	44.3	39.5	83.7
	J620	3,328	10,066	44.5	39.5	84.0
0.5 g/bhpr	J612	1,979	6,227	43.2	39.8	83.0
	J616	2,646	8,298	43.3	39.8	83.1
	J620	3,328	10,380	43.6	39.8	83.4

[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 engine versions available on request.

Contact us:
jenbacher.com/en/contact
jenbacher.us

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In general, "Ready for H_2" Jenbacher units can be converted to operate on up to 100% hydrogen in the future. Details on the cost and timeline for a future conversion may vary and need to be clarified individually.

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