JENBACHER

JENBACHER TYPE 3

Efficient, durable, and reliable for hot and humid countries

Long service intervals, maintenance-friendly engine design, and low fuel consumption support efficient operation in our Type 3 Jenbacher engines. Enhanced components prolong service life when operating on natural gas as well as on special gases such as landfill gas. Our Type 3 engines offer a service interval with up to 80,000 operating hours until the major overhaul. This engine type stands out within 400 to 1,100 kW power range due to its technical maturity and high degree of reliability.



Reference installations

J320 – Wangdee Biogas Power Plant, Thailand



Centered on four Jenbacher J320 engines running on biogas, the plant uses wastewater and solid waste of the raw cassava roots process to generate electricity. Because the biogas power plant delivers 4.27 MW of output, which is more than enough to supply all the electricity needed for the processing plant, the facility can earn extra profits by selling excess power back to the local grid.

Engines	4 x J320
Electrical output	4.27 MW
Thermal output	-
Energy source	Biogas
Commissioning	2015, 2021, 2023

J320 – Arif Habib Group Business Building, Karachi, Pakistan



Two Jenbacher generator sets generate 1,394 kW of electricity for the headquarters of the Arif Habib Group, a business conglomerate company based in Karachi. The J320 exhaust gas is used to run an absorption chiller, producing 100 USRT.

Engines	1 x J208, 1 x J320
Electrical output	1.4 MW
Thermal output	540 kW
Energy source	Natural gas
Commissioning	2009

J320 – K&C Valley Sewage Treatment Plant, India



A combined heat and power (CHP) plant offset the need for K&C Valley sewage treatment plant to buy power from the grid by providing the heat and power needed to treat an average of 41.83 million liters of water per day[1]. Key to the 1,067 kWel power plant's success is the proven Jenbacher J320 engine, which runs on sewage gas to generate power for the plant and recovers the exhaust flue gas waste heat for use in the plant's wastewater treatment process.

Engine	1 x J320
Electrical output	1.1 MW
Thermal output	1.15 MW
Energy source	Sewage gas
Commissioning	2018

J320 – Changsha Xiangjiang Happy City Distributed Energy Project, China



The Changsha Xiangjiang Happy City Distributed Energy project supports the region's energy transition from coal-burning plants to greener solutions. The combined cooling, heat, and power (CCHP) plant is centered on two 1 MW Jenbacher J320 gensets operating on natural gas. The plant supplies electricity, heat, and cooling to the resort, which has a total construction area of about 277,000 square meters.

Engines	2 x J320
Electrical output	2 MW
Thermal output	2.28 MW
Energy source	Natural gas
Commissioning	2019

[1] Based on data from May 2018 to July 2022

JENBACHER

Technical data

Configuration	V 70°		
Bore (mm)	135		
Stroke (mm)	170		
Displacement/cylinder (lit)	2.43		
Speed (rpm)	1,500 (50 Hz) 1,200/1,800 (60 Hz)		
Mean piston speed (m/s)	8.5 (1,500 1/min) 6.8 (1,200 1/min) 10.2 (1,800 1/min)		
Scope of supply	Generator set, cogeneration system, generator set / cogeneration in container		
Applicable gas types	Natural gas, flare gas, propane, biogas, landfill gas, sewage gas, special gases (e.g., coal mine gas, coke gas, wood gas, pyrolysis gas)		
Engine type	J312	J316	J320
No. of cylinders	12	16	20
Total displacement (lit)	29.2	38.9	48.7

		Dimensions l x w x h (mm)
Generator set	J312	4,900 x 1,800 x 2,300
	J316	5,200 x 1,800 x 2,300
	J320	6,000 x 1,800 x 2,300
Cogeneration system	J312	4,700 x 2,300 x 2,300
	J316	5,300 x 2,300 x 2,300
	J320	6,000 x 2,200 x 2,300
Container[2] 40-foot	J312	12,200 x 2,500 x 2,600 – 5,300
	J316	12,200 x 2,500 x 2,600 – 5,300
	J320	12,200 x 2,500 x 2,600 – 5,300
		Weights empty (kg)
Generator set	J312	8,100
	J316	10,100
	J320	13,900
Cogeneration system	J312	9,500
	J316	11,200
	J320	14,400

Outputs and efficiencies

Natural gas — **1,500 1/min | 50 Hz**

NO_x<	Type	Pel (kW)[3]	Pth (kW)[5]	Heat rate (kJ/kWhe)[4]	ηel (%)[4]	ηth (%)	ηtot (%)
500 mg/m³$_N$	J312	635	696	8526	42.2	46.2	88.5
	J316	850	950	8600	41.9	46.8	88.6
	J320	1066	1293	9008	40.0	48.4	88.4
	J320	1066	1188	8573	42.0	46.8	88.8

[2] The dimensions refer to the standard base models with horizontal exhaust silencer.
[3] Type 3 gas engine with site condition ≤ 50 m above sea level and T1 ≤ 40°C
[4] Technical data according to ISO 3046
[5] Total heat output @ hot water 90°C – 70°C

All data according to full load and subject to technical development and modification. Additional engine versions available on request.

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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