JENBACHER

JENBACHER TYPE 3

Efficient, durable, reliable

Long service intervals, maintenance-friendly engine design and low fuel consumption ensure maximum efficiency in our Type 3 Jenbacher engines. Enhanced components prolong service life even when using non-pipeline gases, such as landfill gas. Our Type 3 engines offer an outstanding service interval with up to 80,000 operating hours until the major overhaul. This engine type stands out in its 400 to 1,100 kW power range due to its technical maturity and high degree of reliability.

Reference installations

J312—Abwasserverband AIZ, Austria

The Achental-Inntal-Zillertal (AIZ) Wastewater Association, based in Strass im Zillertal, uses two sewage gas-fired Jenbacher J312 engines to run the combined heat and power (CHP) system at its wastewater treatment plant. The system has improved the plant's ecological footprint while contributing to the energy transition. The treatment plant cleans 28,270 cubic meters of wastewater per day.

Engines	2 x J312
Electrical output	1.27 MW
Thermal output	1.4 MW
Energy source	Sewage gas
Commissioning	2018, 2020

J312—Abwasserverband Hall in Tirol – Fritzens, Austria

At the Fritzens wastewater treatment plant, two sewage gas-fueled Jenbacher J312 engines with a total capacity of more than 1.27 MW of electricity, providing for the plant's entire annual power demand. The heat generated by the engines is used to process food waste, thus producing additional energy for waste treatment.

Engines	2 x J312
Electrical output	1.27 MW
Thermal output	1.4 MW
Energy source	Sewage gas
Commissioning	2016, 2023

J320—Wangdee Biogas power plant, Thailand

Centered on four Jenbacher J320 engines running on biogas, the plant generates electricity using wastewater and solid waste from raw cassava root processing. The biogas power plant delivers 4.27 MW of output, which is more than enough to supply all of the processing plant's electricity needs. 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—Shandong Minhe Biological Technology Co., LTD, China

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.

Engines	3 x J320, 1 x J620
Electrical output	6.2 MW
Thermal output	6.4 MW
Energy source	Biogas
Commissioning	2009, 2018

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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	4,700 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[1] 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					1,800 1/min / 60 Hz				
NO_x <	**Type**	**Pel (kW)[2]**	**Pth (kW)[3]**	**ηel (%)[2]**	**ηth (%)[3]**	**ηtot (%)**	**Pel (kW)[2]**	**Pth (kW)[3]**	**ηel (%)[2]**	**ηth (%)[3]**	**ηtot (%)**
500 mg/m³$_N$	J312	635	664	43.1	45.0	88.1	-	-	-	-	-
	J312	635	682	42.6	45.7	88.3	635	813	39.1	50.0	89.1
	J316	850	926	42.6	46.3	88.9	849	1,084	39.2	50.0	89.2
	J320	850	901	43.0	45.6	88.7	-	-	-	-	-
	J320	1,066	1,157	42.7	46.3	89.0	1,062	1,361	39.2	50.2	89.4
250 mg/m³$_N$	J312	635	684	42.2	45.4	87.7	635	847	38.1	50.7	88.8
	J316	850	929	42.2	46.0	88.2	849	1,129	38.1	50.7	88.9
	J320	1,066	1,161	42.3	46.1	88.4	1,062	1,399	38.2	50.3	88.5

Biogas		1,500 1/min | 50 Hz					1,800 1/min / 60 Hz				
NO_x <	**Type**	**Pel (kW)[2]**	**Pth (kW)[3]**	**ηel (%)[2]**	**ηth (%)[3]**	**ηtot (%)**	**Pel (kW)[2]**	**Pth (kW)[3]**	**ηel (%)[2]**	**ηth (%)[3]**	**ηtot (%)**
500 mg/m³$_N$	J312	549	531	42.7	41.4	84.1	-	-	-	-	-
	J312	635	649	41.9	42.8	84.7	635	804	38.5	48.7	87.2
	J316	850	883	41.9	43.5	85.3	849	1,072	38.6	48.7	87.3
	J320	1,066	1,103	42.0	43.4	85.4	1,062	1,341	39.0	49.0	87.0
250 mg/m³$_N$	J312	635	661	40.9	42.5	83.4	635	838	37.0	49.0	87.0
	J316	850	901	40.8	43.3	84.1	849	1,119	38.0	50.0	87.0
	J320	1,066	1,125	41.0	43.2	84.2	1,062	1,397	38.0	49.0	87.0

[1] The dimensions refer to the standard base models with horizontal exhaust silencer.
[2] Technical data according to ISO 3046
[3] 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.

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.

Contact us:
jenbacher.com/en/contact