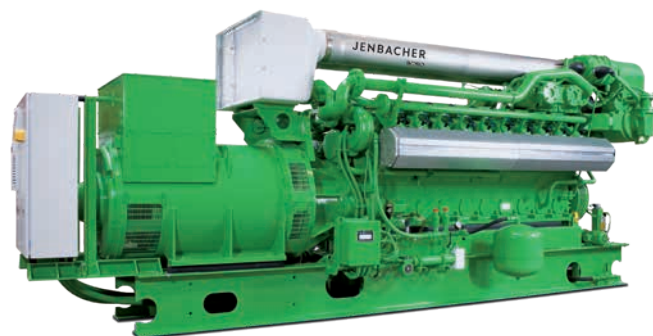


## Jenbacher type 3

### 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 & J320 Landfill Site in Durban, South Africa

Fuel	Engine type	Electrical output	Commissioning
Landfill gas	1 x J312	526 kW	2006
	1 x J320	1,064 kW	

At the Durban Landfill, two containerized Jenbacher generator sets with a total electrical output of 1,590 kW generate electricity for the local municipal grid. Moreover, the use of landfill gas for power generation curbs environmental pollution and health problems associated with the escaping landfill gas.



#### J316 Combined Cooling, Heat & Power Plant at the Hospital in Beijing Qinghe, China

Fuel	Engine type	Electrical output	Thermal output	Commissioning
Natural gas	2 x J316	3,189 kW	1,851 kW	2012

The Qinghe Hospital building and facility installed two J316 engines with a total electrical output of 3,189 kW. With a total efficiency of more than 70%, the J316 units improve the facility's energy supply security while also providing exhaust heat and hot water.



#### J320 Ensign Drilling Jonah Field in Wyoming, US

Fuel	Engine type	Electrical output	Commissioning
Natural gas	24 x J320	24,168 kW	2011

In southwest Wyoming, a major gas producer has deployed 24 J320 engines to repower a drilling rig using natural gas instead of diesel. In the Jonah field, available site gas allows the producer to capture cost savings and reduce overall site emissions.



#### J320 Amtex Textile Center in Punjab, Pakistan

Fuel	Engine type	Electrical output	Commissioning
Natural gas	12 x J320	12,072 kW	2002, 2003, 2004, 2005, 2008

A dozen J320 natural gas-driven units generate electricity for spinning mills in one of Pakistan's most important textile centers. The plant relies on the Jenbacher engines' ability to operate efficiently in a difficult environment that includes high ambient temperatures, dusty inlet air, and island mode operation.



## Technical data

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

Dimensions l x w x h (mm)		
<b>Generator set</b>	J312	4,700 x 1,800 x 2,300
	J316	5,200 x 1,800 x 2,300
	J320	5,700 x 1,700 x 2,300
<b>Cogeneration system</b>	J312	4,700 x 2,300 x 2,300
	J316	5,300 x 2,300 x 2,300
	J320	5,700 x 1,900 x 2,300
<b>Container</b>	J312	12,200 x 2,500 x 2,600
	J316	12,200 x 2,500 x 2,600
	J320	12,200 x 2,500 x 2,600

Weights empty (kg)		
<b>Generator set</b>	J312	8,100
	J316	10,100
	J320	13,900
<b>Cogeneration system</b>	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					1,200 1/min   60 Hz				
NOx <	Type	Pel (kW) <sup>1</sup>	ηel (%) <sup>1</sup>	Pt (kW) <sup>2</sup>	ηth (%) <sup>2</sup>	ηtot (%)	Pel (kW) <sup>1</sup>	ηel (%) <sup>1</sup>	Pt (kW) <sup>2</sup>	ηth (%) <sup>2</sup>	ηtot (%)	Pel (kW) <sup>1</sup>	ηel (%) <sup>1</sup>	Pt (kW) <sup>2</sup>	ηth (%) <sup>2</sup>	ηtot (%)
500 mg/m <sup>3</sup> <sub>N</sub>	J312	391	39.4	508	51.2	90.6										
	J312	635	40.8	739	47.4	88.2	633	39.2	815	50.4	89.6	475	40.9	539	46.4	87.2
	J316	851	40.7	991	47.3	88.0	847	39.3	1,087	50.4	89.7	636	41.0	720	46.5	87.5
	J320	999	41.2	1,140	47.0	88.2										
	J320	1,067	40.9	1,241	47.6	88.6	1,062	39.4	1,360	50.4	89.8	795	41.0	900	46.4	87.4
250 mg/m <sup>3</sup> <sub>N</sub>	J312	635	39.5	766	47.6	87.1	633	38.3	835	50.5	88.8	475	40.1	548	46.3	86.4
	J316	851	39.5	1,028	47.8	87.3	847	38.4	1,113	50.4	88.9	636	40.3	730	46.2	86.5
	J320	1,067	39.9	1,293	48.4	88.3	1,062	38.6	1,391	50.5	89.0	795	40.3	914	46.3	86.5

Biogas		1,500 1/min   50 Hz					1,800 1/min   60 Hz				
NOx <	Type	Pel (kW) <sup>1</sup>	ηel (%) <sup>1</sup>	Pt (kW) <sup>2</sup>	ηth (%) <sup>2</sup>	ηtot (%)	Pel (kW) <sup>1</sup>	ηel (%) <sup>1</sup>	Pt (kW) <sup>2</sup>	ηth (%) <sup>2</sup>	ηtot (%)
500 mg/m <sup>3</sup> <sub>N</sub>	J312	548	41.9	557	42.6	84.5					
	J312	635	40.4	709	45.1	85.5	633	39.2	785	48.5	87.7
	J320	999	41.4	1,069	44.2	85.6					
	J316	851	40.7	935	44.7	85.4	847	39.3	1,046	48.5	87.8
	J320	1,067	40.9	1,179	45.2	86.1	1,062	39.4	1,307	48.5	87.9
250 mg/m <sup>3</sup> <sub>N</sub>	J312	635	39.0	730	44.8	83.8	633	38.3	807	48.8	87.1
	J316	851	39.3	964	44.5	83.7	847	38.4	1,077	48.9	87.3
	J320	1,067	39.3	1,225	45.1	84.4	1,062	38.6	1,347	48.9	87.4

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 engines versions available on request.



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