

# Jenbacher type 2



50  
years of power

Jenbacher gas engines

## continuous development for 30 years

Introduced in 1976, the Jenbacher type 2 engine offers extremely high efficiency in the 350 kW power range. Its robust design and stationary engine concept result in excellent component durability and a service life of 60,000 operating hours before the first major overhaul. Optimized components and a proven control and monitoring concept give this engine outstanding reliability.

## reference installations

### model, plant

**J208 GS**  
**Sewage treatment plant; Strass im Zillertal, Austria**

### key technical data

Fuel ..... Sewage gas  
Engine type ..... 1 x JMS 208 GS-B.LC  
Electrical output ..... 330 kW  
Thermal output ..... 1,434 MBTU/hr  
Commissioning ..... April 2001

### description

In addition to two existing Jenbacher systems, a J208 GS engine has been installed at this sewage treatment plant. Due to the high efficiency of this new engine, the annual electricity output could be increased by more than 20% while maintaining the fuel gas consumption at the same level. Our three cogeneration systems cover 85% of the electricity requirement and 100% of the heat requirement of the sewage treatment plant.



**J208 GS**  
**Containerized solution**  
**Biogas plant Wolfring; Fensterbach, Germany**

Fuel ..... Biogas  
Engine type ..... 1 x JMC 208 GS-B.L  
Electrical output ..... 330 kW  
Thermal output ..... 1,438 MBTU/hr  
Commissioning ..... November 2002

Renewable resources such as grass, corn, and chicken dung are fermented to produce biogas that fuels our gas engine. The generated electricity is entirely fed into the public grid; the heat produced is used for heating purposes at the Wolfring estate. During summer, the exhaust gas from the engine is used to dry grain and wood chips. The substrate from the biomass fermentation serves as fertilizer for the Wolfring farm. Due to the exceptional technical and operational characteristics, in November 2005 the German Federal Ministry of Consumer Protection, Food and Agriculture declared the plant to be a "model solution for the ecological and economical generation of energy using agricultural biogas".



**J208 GS**  
**Biogas plant**  
**Lamping; Emstek, Germany**

Fuel ..... Biogas  
Engine type ..... 1 x JMS 208 GS-B.L  
Electrical output ..... 330 kW  
Thermal output ..... 1,383 MBTU/hr  
Commissioning ..... December 2003

The gas engine runs on biogas produced from liquid manure and corn from the Lamping farm. The generated electricity is entirely fed into the public grid, and the produced heat is used for heating of the digester, housing and stables.



# technical data

Configuration	In line
Bore (inch)	5.31
Stroke (inch)	5.71
Displacement/cylinder (cu.in)	126.6
Speed (rpm)	1,800 (60 Hz)
Mean piston speed (in/s)	343
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	J208 GS
No. of cylinders	8
Total displacement (cu.in)	1,013

## Dimensions l x w x h (inch)

Generator set	200 x 70 x 80
Cogeneration system	200 x 70 x 80
Container 20-foot (generator set)	240 x 100 x 110
Container 40-foot (cogeneration)	480 x 100 x 110

## Weights empty (lbs)

Generator set	10,740
Cogeneration system	12,450
Container 20-foot (generator set)	28,900
Container 40-foot (cogeneration)	37,590

# outputs and efficiencies

## Natural gas

1,800 rpm | 60 Hz

NOx <	Type	Pel (kW) <sup>1</sup>	$\eta_{el}$ (%)	Pth (MBTU/hr) <sup>2</sup>	$\eta_{th}$ (%)	$\eta_{tot}$ (%)
1.1 g/bhp.hr	208	335	37.2	1,384	45.0	82.2
0.6 g/bhp.hr	208	335	35.8	1,396	43.7	79.5

## Biogas

1,800 rpm | 60 Hz

NOx <	Type	Pel (kW) <sup>1</sup>	$\eta_{el}$ (%)	Pth (MBTU/hr) <sup>2</sup>	$\eta_{th}$ (%)	$\eta_{tot}$ (%)
1.1 g/bhp.hr	208	335	36.2	1,334	42.3	78.5

1) Electrical output based on ISO standard output and standard reference conditions according to ISO 3046/I-1991 and p.f. = 1.0 according to VDE 0530 REM with respective tolerance; minimum methane number 70 for natural gas

2) Total heat output with a tolerance of +/- 8%, exhaust gas outlet temperature 248°F, for biogas exhaust gas outlet temperature 356°F

All data according to full load and subject to technical development and modification.