



CAT[®] CG170 K Series Gas Generator Sets

BUILT FOR IT.™



CAT CG170 K

SMARTER ENERGY SOLUTIONS

COMMERCIAL AND INDUSTRIAL FACILITIES

Facilities such as manufacturing plants, resorts, shopping centers, office or residential buildings, universities, data centers and hospitals reduce operating costs and carbon footprint simultaneously.

ELECTRIC UTILITIES

Caterpillar has led innovation to deliver stationary and containerized gas power plants to electric utilities and district energy facilities around the world for both continuous grid support and peak electricity demand.

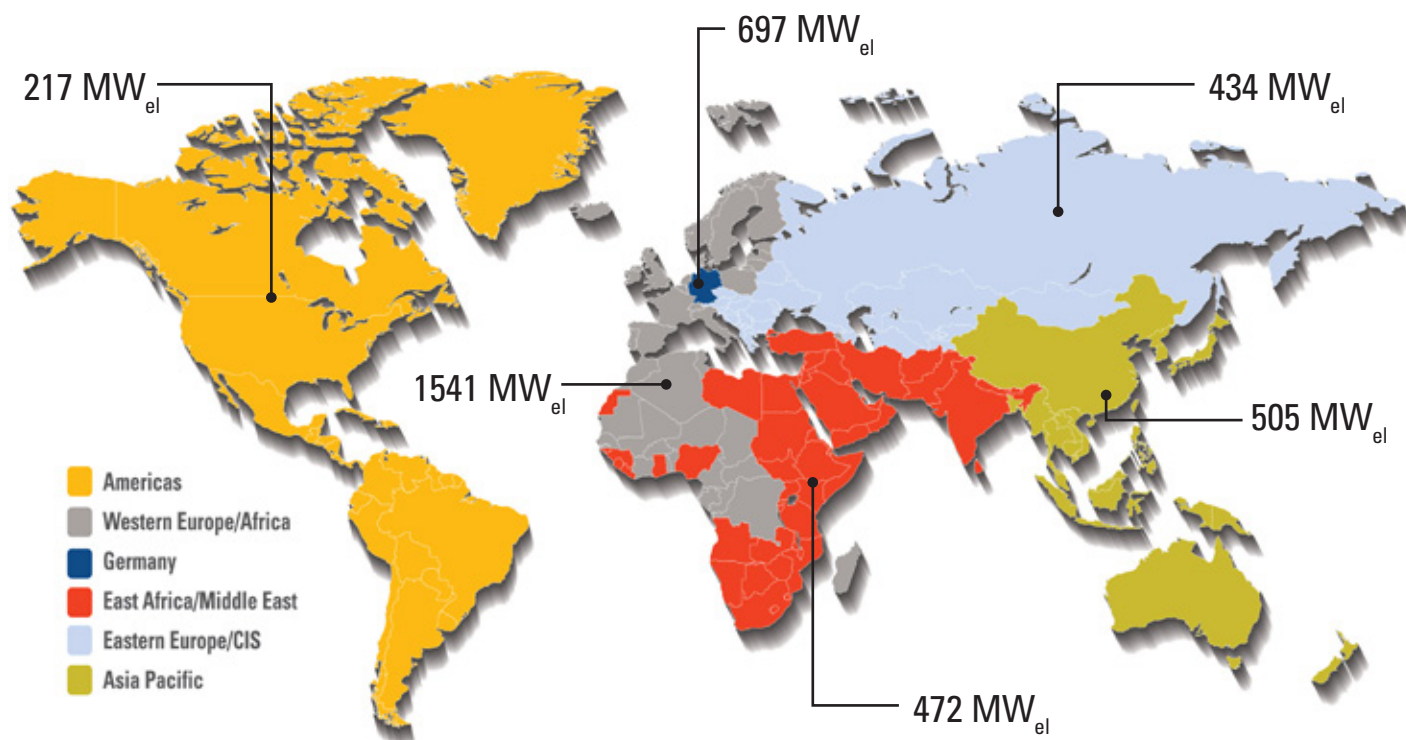
MINES

Mining operators increase mine safety and reduce carbon emissions with coal gas, while many other mining operations are realizing the benefits of onsite gas power generation to support greenfield site development.

GREENHOUSES

In greenhouses, Cat gas generator sets simultaneously deliver electricity for lighting or sale to the local grid, hot water for facility heating, and carbon dioxide as an organic fertilizer for increased crop production.

Installed capacity of 3,866 MW_{el} with more than 2,854 generator sets worldwide



MEETING YOUR NEEDS HAS SHAPED OUR HISTORY

At Caterpillar, we understand what it takes to deliver a successful gas power generation system, and it starts with a core machine that is designed for efficiency and reliability. Since the 1920s, Caterpillar has been designing and building engines for power production. Although the technology has changed over the years, the philosophy hasn't: to deliver the most reliable power generation at the lowest possible cost of ownership and operation. Today, Caterpillar not only manufactures power generation equipment, but we also provide customized project financing and trade solutions via Cat Financial.

THE COMPLETE SOLUTION

Caterpillar is your complete gas solutions partner. From mechanical systems such as gas fuel train and heat recovery systems, to exhaust aftertreatment that complies with the world's most stringent emission requirements, Cat Gas Solutions engineering works with your local Cat dealer to deliver a complete scope of supply. Caterpillar also provides electrical systems such as master controls and paralleling switchgear, electrical distribution switchgear and uninterruptible power supplies (UPS) that can meet either UL or IEC requirements.

PRODUCT SUPPORT WORLDWIDE

Your gas power system is supported by our factory-trained global network of Cat dealers. Therefore, you can rest assured that your equipment will be ordered, delivered, installed and commissioned in consultation with a local expert. You'll also have the confidence that Caterpillar will be there to keep you up and running. Cat dealers have over 1,600 dealer branch stores operating in 200 countries to provide the most extensive post-sales support including oil and fuel monitoring services, preventive maintenance and comprehensive customer support agreements.

LOWER LIFE CYCLE COST

With longer maintenance intervals, higher fuel efficiency and competitive repair options, Caterpillar delivers the lowest total owning and operating costs. When you design your facility within the Cat Application and Installation Guidelines, you can expect generator set availability up to 99 percent of planned operating hours annually. It all adds up to a strong return on your investment, year after year.

CG170 K: HIGH PERFORMANCE



HIGH TRANSIENT RESPONSE

When your facility requires operation isolated from the electric utility grid, an optimized CG170 K turbocharging system is provided to ensure transient load response that will keep your operation running.



LOWER OPERATING COSTS

An optimized lubrication system means that the CG170 K consumes up to 1,900 liters (500 gallons) less lubricating oil each year than competing gas generators, which means more money stays in your company's pockets.



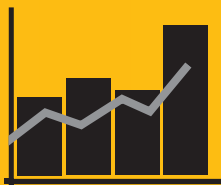
GREATER AVAILABILITY

The CG170 K utilizes soot-free combustion with chamber plugs for extended maintenance intervals up to 4,000 hours. Newly optimized blow-by gas recirculation reduces turbocharger maintenance intervals and boosts efficiency.



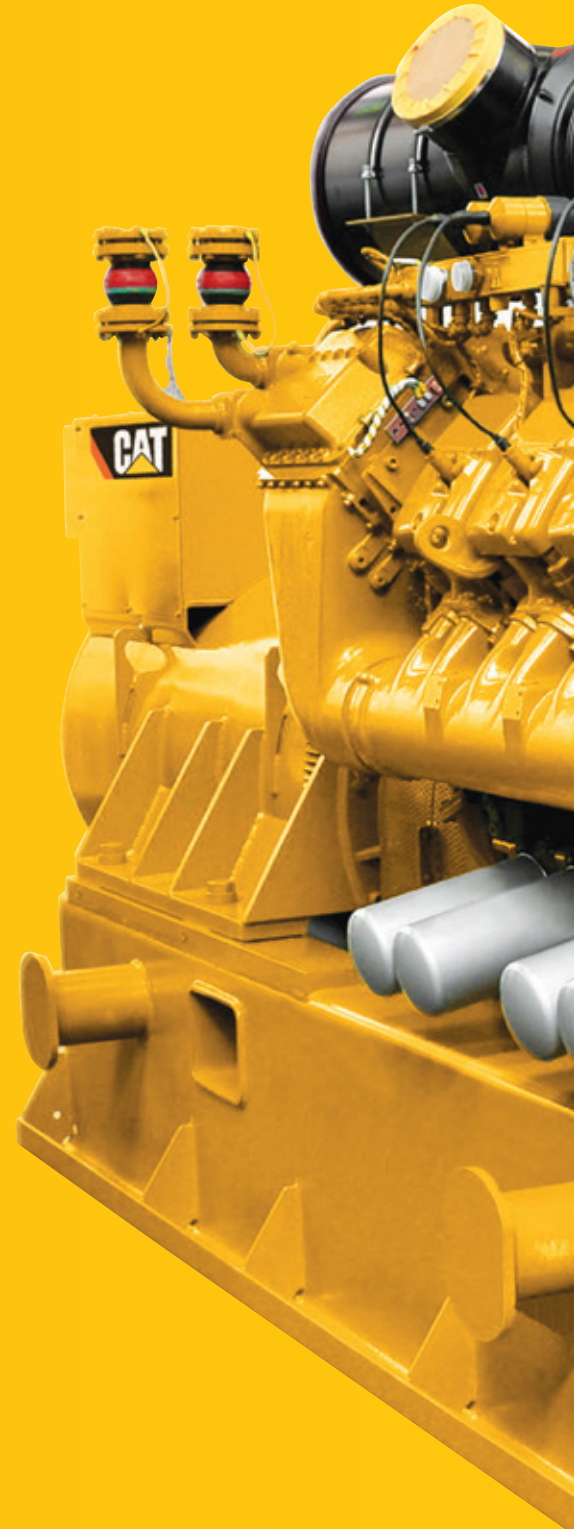
SYSTEM CONTROL

Control the entire system, not just the engine, with the Cat Total Electronic Management System. Control or monitoring of ancillary equipment such as heat recovery modules, exhaust aftertreatment and fuel treatment systems becomes seamless. Features like temperature monitoring for each cylinder and anti-knock control allow for maximum power output and the best possible fuel utilization, even with fluctuating gas composition.

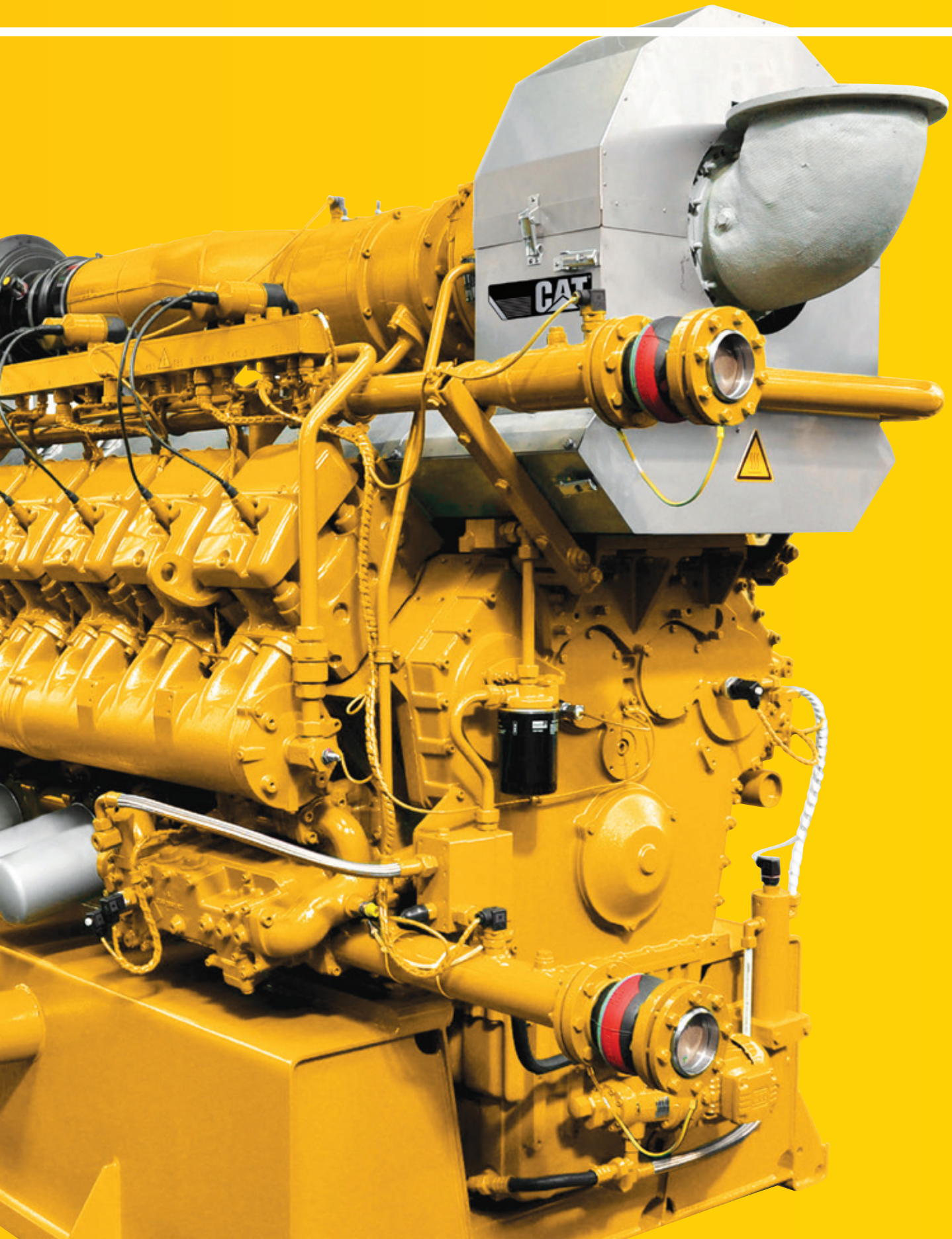


HIGHLY EFFICIENT

With recent improvements of inlet ducting, combustion chamber design and high-efficiency spark plugs, the CG170 K gas generator delivers up to 40.9 percent electrical efficiency and more recoverable heat while reducing carbon emissions.



WITH LOW OPERATING COSTS



50 Hz PRODUCT PERFORMANCE

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Bore / Stroke	mm in	170 / 195	6.7 / 7.7	170 / 195	6.7 / 7.7
Displacement	l in ³	53.1	3,240	70.8	4,320
Speed	rpm	1,500		1,500	
Mean piston speed	m/s ft/s	9.8	32	9.8	32
Length ¹⁾	mm in	4,790	188	5,430	214
Width ¹⁾	mm in	1,810	71	1,810	71
Height ¹⁾	mm in	2,210	87	2,210	87
Dry weight genset	kg lb	11,700	25,795	13,300	29,325

NATURAL GAS @500 mg/Nm³ (1g/bhp-hr)

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Electrical power ²⁾	kW _e	1,125		1,500	
Mean effective pressure	bar psi	17.4	253	17.5	254
Thermal output (+/- 8%) ³⁾	kW Btu/m	1,253	71,320	1,675	95,341
Electrical efficiency ²⁾	%	40.9		40.9	
Thermal efficiency ³⁾	%	45.6		45.7	
Total efficiency	%	86.5		86.6	

NATURAL GAS @250 mg/Nm³ (0.5g/bhp-hr)

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Electrical power ²⁾	kW _e	1,125		1,500	
Mean effective pressure	bar psi	17.4	253	17.5	254
Thermal output (+/- 8%) ³⁾	kW Btu/m	1,322	75,248	1,766	100,520
Electrical efficiency ²⁾	%	39.7		39.7	
Thermal efficiency ³⁾	%	46.7		46.7	
Total efficiency	%	86.4		86.4	

1) Transport dimensions of genset; components set up separately must be taken into consideration.

2) According to ISO 3046/1 at voltage = 400v, PF = 1.0 for 50 Hz, and a minimum methane number of MN 70 for natural gas.

3) Cooling of the exhaust gases to 120° C (248° F) for natural gas, plus engine jacket water heat.

NO_x emissions: Measured as NO₂ dry exhaust gas @ 5% O₂

Engine configuration with dry exhaust manifolds.

Data is representative and non-binding. Contact your Cat dealer for site and fuel specific performance.

60 Hz PRODUCT PERFORMANCE

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Bore / Stroke	mm in	170 / 195	6.7 / 7.7	170 / 195	6.7 / 7.7
Displacement	l in ³	53.1	3,240	70.8	4,320
Speed	rpm	1,500		1,500	
Mean piston speed	m/s ft/s	9.8	32	9.8	32
Length ¹⁾	mm in	5,970	235	6,640	261
Width ¹⁾	mm in	1,790	71	1,790	71
Height ¹⁾	mm in	2,210	87	2,210	87
Dry weight genset	kg lb	13,000	28,660	14,900	32,850

NATURAL GAS @500 mg/Nm³ (1g/bhp-hr)

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Electrical power ²⁾	kW _e	1,125		1,500	
Mean effective pressure	bar psi	17.5	254	17.6	255
Thermal output (+/- 8%) ³⁾	kW Btu/m	1,262	71,833	1,686	95,966
Electrical efficiency ²⁾	%	40.7		40.6	
Thermal efficiency ³⁾	%	45.6		45.7	
Total efficiency	%	86.3		86.3	

NATURAL GAS @250 mg/Nm³ (0.5g/bhp-hr)

ENGINE TYPE	UNITS	CG170-12 K		CG170-16 K	
Electrical power ²⁾	kW _e	1,125		1,500	
Mean effective pressure	bar psi	17.5	254	17.6	255
Thermal output (+/- 8%) ³⁾	kW Btu/m	1,331	75,760	1,777	101,146
Electrical efficiency ²⁾	%	39.5		39.4	
Thermal efficiency ³⁾	%	46.7		46.7	
Total efficiency	%	86.2		86.1	

1) Transport dimensions of genset; components set up separately must be taken into consideration.

2) According to ISO 3046/1 at voltage = 480v, PF = 1.0 for 60 Hz, and a minimum methane number of MN 80 for natural gas.

3) Cooling of the exhaust gases to 120° C (248° F) for natural gas, plus engine jacket water heat.

NO_x emissions: Measured as NO₂ dry exhaust gas @ 5% O₂

Engine configuration with dry exhaust manifolds.

Data is representative and non-binding. Contact your Cat dealer for site and fuel specific performance.

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**For more information and to contact your local Cat dealer,
visit catelectricpowerinfo.com/gas**

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