

MWM DIGITAL POWER

www.mwm.net



TCG 3042

Big on performance,
small on space.

MWM
Energy. Efficiency. Environment.

Future through tradition.

With MWM you benefit from around 150 years of experience in gas engine technology and power generation. As part of Caterpillar's international network, since 2011, we have had access to products and resources that will benefit you in the development of individual complete solutions. Together with Kiel and Rostock locations, we now have an expanded product portfolio of 400 - 10,300 kW_{el}.

Take advantage of the safety and experience of a specialist with thousands of units installed worldwide, setting standards in efficiency and reliability.

150 years

Caterpillar

Reliability

Efficiency

On the way into the digital age.

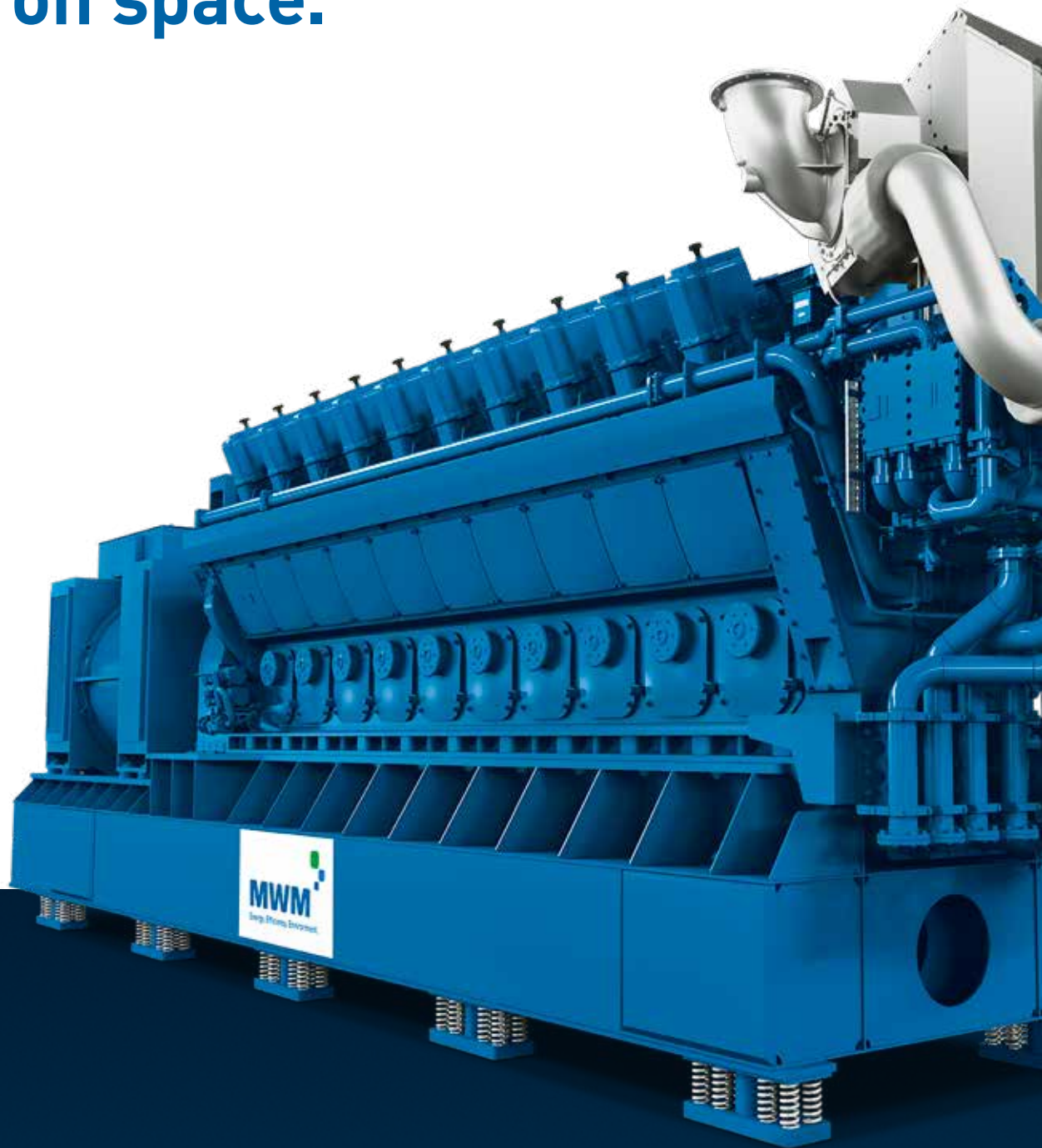
With MWM Digital Power, the energy market is also entering a new era with this series. Modern components, combined with an intelligent and safe data analysis, increase efficiency in maintenance and utilization of your plant.

The TCG 3042 gas engine is perfectly tailored to the challenges of industry 4.0 and the changed conditions of a dynamic energy market in the age of global value chains.

Experience

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TCG 3042. Big on performance, small on space.



Strong & efficient.

Among the MWM power gensets, the TCG 3042 gas engine is a specialist for natural gas applications. Apart from high profitability, flexibility, and reliability, the unit boasts the highest output in the MWM product range with maximum electrical efficiency.

MWM DIGITALPOWER



- **Maximum efficiency**
 - ✓ Output range from 9,830 kW_{el} to 10,300 kW_{el}
 - ✓ Best total efficiency of 93 percent
 - ✓ Best electrical efficiency of 48 percent

- **Future-proof through high flexibility**
 - ✓ Suitable for all natural gas applications in 50 Hz and 60 Hz networks
 - ✓ Available for high altitude installations, high intake air temperatures, and various fuel gas types with different methane numbers
 - ✓ Can be optimized for combined heat and power (CHP) generation or for power generation only (depending on the application scenario)
 - ✓ Switchable between summer and winter mode for cogeneration power plant applications
 - ✓ Two differently designed coolant circuits can be combined with three different thermodynamic engine layouts

- **Easy installation in small spaces**
 - ✓ Reduced complexity of standard modular design allows an easy and quick installation
 - ✓ Modest need for space between multiple engine installations

- **Easy maintenance, low operating costs**
 - ✓ High reliability, modular design, and integral structure reduce the number of components and facilitate the maintenance
 - ✓ Long maintenance intervals
 - ✓ One-piece, dry cylinder crankcase with integrated charge air duct and oil line

- **Reliability and availability**
 - ✓ Reliable, proven, highly efficient single-stage turbocharging system
 - ✓ Smart simplicity ensures a robust engine platform
 - ✓ Optimized maintenance plans ensure high availability and durability

- **Optimized for isolated operation and non-ISO conditions**
 - ✓ Excellent transient response, six load steps up to full rated power
 - ✓ Fast and reliable supply in the event of grid failures or in island mode
 - ✓ The modular structure optimizes the engine for operation with low methane number, setup at high altitudes, or high outside temperatures

Performance data TCG 3042 50 Hz

Natural gas applications

$\text{NO}_x \leq 500 \text{ mg/Nm}^3$ ¹⁾

Engine type	TCG 3042 V20	50 Hz
Electrical output	kW	10,300
Mean effective pressure	bar	22.0
Thermal output	±8 % kW	9,711
Electrical efficiency ²⁾	%	48.0
Thermal efficiency	%	45.0
Total efficiency	%	93.0
CHP coefficient ³⁾		1.06

Specifications and service intervals

Dimensions and weights

Engine type	TCG 3042 V20	50 Hz
Length	mm	14,280
Width	mm	3,910
Height	mm	5,101
Dry weight genset	kg	164,000
Bore/stroke	mm	340/420

Service intervals

Engine type	First service ⁴⁾	Charge air cooler cleaning	Cylinder head inspection ⁵⁾	First major maintenance interval
Natural gas	2,000 Bh	32,000 Bh	16,000 Bh	n. a.

1) With 5% O₂ and dry exhaust gas
2) El. efficiency according to ISO 3046/1 incl. 5% O₂
3) The CHP coefficient is calculated by dividing the

electrical efficiency by the thermal efficiency. Please remember that this is a theoretical value that may diverge from actually measures values.

4) "after go live"
5) Exchange valve spindles without cylinder head replacement

Performance data TCG 3042 60 Hz

Natural gas applications

$\text{NO}_x \leq 500 \text{ mg/Nm}^3$ ¹⁾

Engine type	TCG 3042 V20	60 Hz
Electrical output	kW	9,830
Mean effective pressure	bar	21.9
Thermal output	±8 % kW	9,255
Electrical efficiency ²⁾	%	48.0
Thermal efficiency	%	45.0
Total efficiency	%	93.0
CHP coefficient ³⁾		1.06

Specifications and service intervals

Dimensions and weights

Engine type	TCG 3042 V20	60 Hz
Length	mm	14,280
Width	mm	3,910
Height	mm	5,101
Dry weight genset	kg	164,000
Bore/stroke	mm	340/420

Service intervals

Engine type	First service ⁴⁾	Charge air cooler cleaning	Cylinder head inspection ⁵⁾	First major maintenance interval
Natural gas	2,000 Bh	32,000 Bh	16,000 Bh	n. a.

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