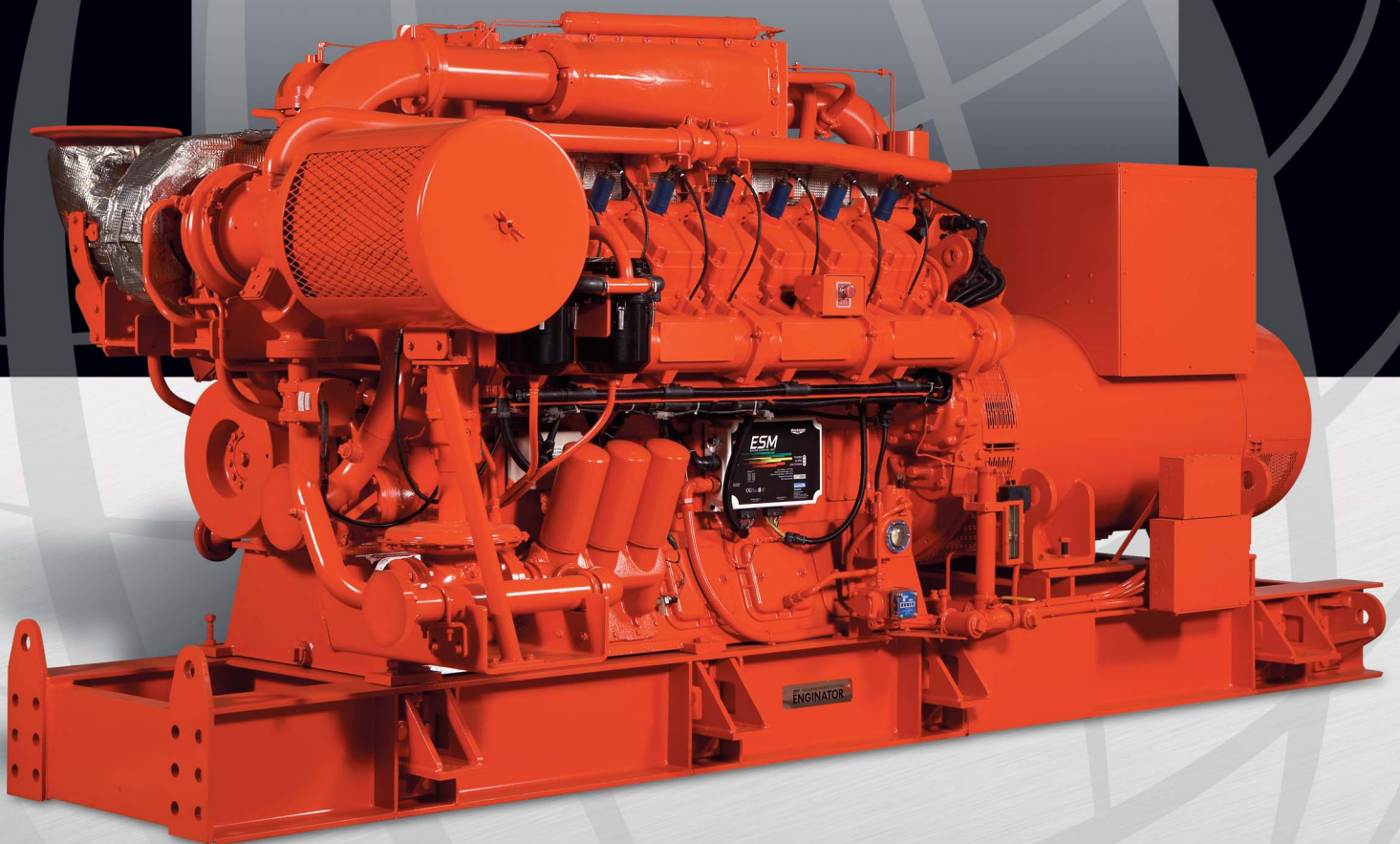


APG



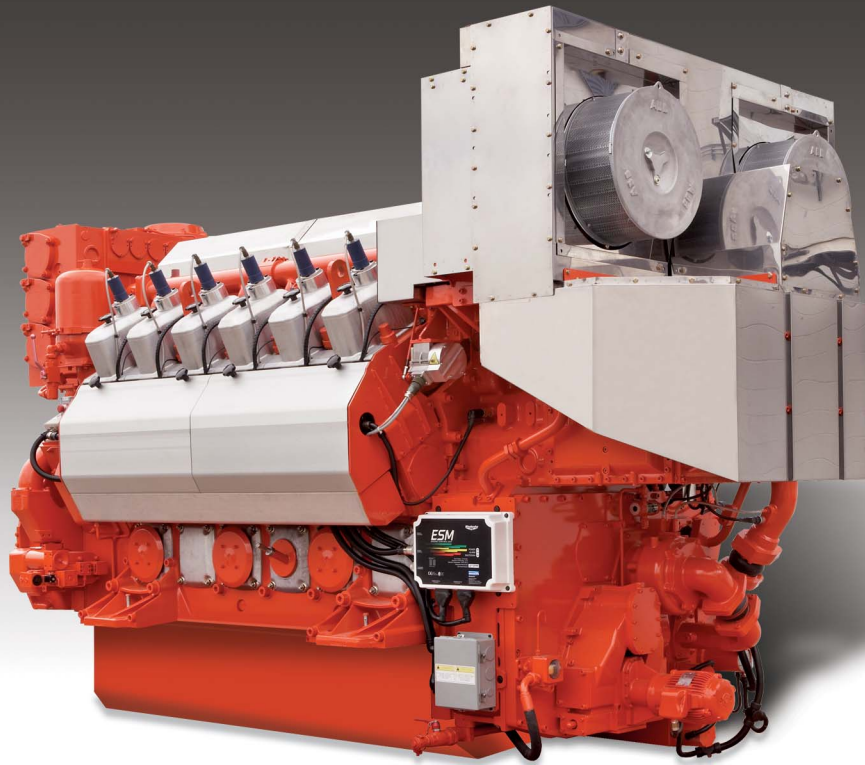
Waukesha

POWERING PERFORMANCE



Waukesha

POWER REVOLUTION.



The APG™ Series A World Class Commitment. Now.

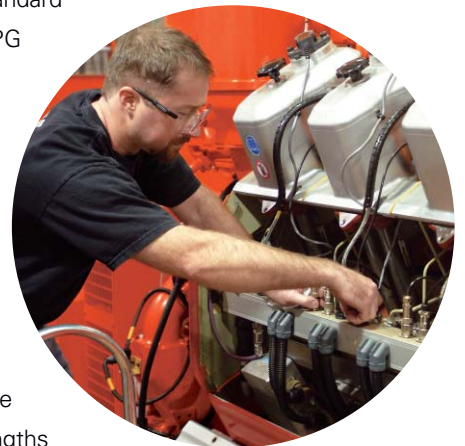
Waukesha® Engine is serious about meeting the challenge of the world's power generation needs. The answer is now. Introducing the APG (Advanced Power Generation) Series of high efficiency, low emission engines and gensets. It's the solution to meet today's – and tomorrow's – global power demand.

The APG Series is comprised of three distinct engine/genset lines – the APG1000, APG2000 and APG3000. Each serving different needs.

All designed with state-of-the-art technology.

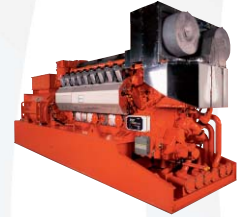
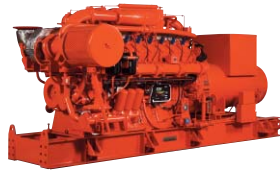
Add to that our patented ESM® control system – standard on the entire APG Series – plus, the Waukesha reputation for a century of product durability and know-how, and a history of delivering strong smart engines that last. It's an incredible combination of strengths culminated in the APG Series.

Simply put, the APG Series is a world-class commitment to the global power generation industry – **The Waukesha Way.**



WORLD CLASS POWER. PROVEN RELIABILITY.

At the core of the Waukesha APG Series are three distinct products with the power to perform. Each engine is designed for maximum compatibility and productivity. When engines are combined with generators in the APG series, the result is the APG1000, APG2000 and APG3000 Enginator® gensets.



Series / Model	APG1000 Enginator 16V150LTD Engine	APG2000 Enginator 12V220GL Engine	APG3000 Enginator 18V220GL Engine
Power	1 MW of power	2 MW of power	3 MW of power
Brake Thermal Efficiency	43.5% efficiency	43.9% efficiency	43.9% efficiency
Standard Emissions	T/A Luft	T/A Luft	T/A Luft
Engine Speed	1800 rpm @ 60 Hz 1500 rpm @ 50 Hz	1200 rpm @ 60 Hz 1500 rpm @ 50 Hz	1200 rpm @ 60 Hz 1500 rpm @ 50 Hz
Bore & Stroke	152 x 165 mm	220 x 240 mm	220 x 240 mm
Cylinders	16-cylinder	12-cylinder	18-cylinder
Weight	17,000 lbs (7730 kg) – Engine 30,200 lbs (13,730 kg) – Genset	32,849 lbs (14,900 kg) – Engine 60,000 lbs (27,216 kg) – Genset	43,652 lbs (19,800 kg) – Engine 80,100 lbs (36,333 kg) – Genset

BUILT SMART. PERFORMANCE

These days, the importance of squeezing the maximum value out of every energy dollar has made combined heat and power (CHP) installations increasingly desirable. The APG Series is ideal for CHP applications. Its two-stage intercooling design maximizes total heat recovery and lowers overall energy cost.

Waukesha stands behind its product with 1 generator system (engine, generator and ECH before it leaves the factory. Its just another reputation for delivering strong, smart engines

MAXIMUM HEAT RECOVERY. LOWER FUEL CONSUMPTION.

Next Generation Power. Among best in class.

The APG1000, APG2000 and APG3000 are the essential 1 to 3 megawatt building blocks that deliver flexible solutions for today's stationary, gas engine-driven power generation systems. The APG Series. Solutions to meet power needs.

In the 1 megawatt power range, the APG1000 is a leader in efficiency.



Engineered for optimal engine performance, the fuel-injected APG2000 and APG3000 are rated best in class for their transient load capabilities. The APG2000 and APG3000 offer advancements in managing rapid load changes crucial for prime power, off-grid applications without compromising their high fuel efficiency.

Efficiency. Low emissions. High priority.

The Waukesha Engine APG Series is meeting today's rigorous industry demands for high-speed, high efficiency engines. All APG models are turbocharged, intercooled, lean combustion units providing world class efficiency.

The progressive APG Enginator family is among best in class for efficiency and low emissions, with T/A Luft and half T/A Luft capabilities. The APG engines can reach levels as low as 0.5 g/bhp-hr NOx.

Waukesha Engine understands the importance of energy efficiency and low emissions in today's world. We have an ongoing commitment to investing in the development of the technologies that will continue to improve engine operating efficiencies and further reduce emissions levels.

TESTED. QUALITY APPROVED.

100% quality assurance. Every (P panel) is performance tested the way Waukesha has earned its that last.

PTION.



ESM® for complete control.

Standard throughout the APG Series, the Waukesha patented **Engine System Manager (ESM)** control and diagnostics system integrates air-fuel ratio control, spark timing control, speed governing, knock detection, start/stop control, diagnostic tools, fault logging, engine safeties, an engine service program, and ignition power module diagnostics.




ESM ensures maximum performance and uptime around the clock. 24 hours a day, 7 days a week. Ignition timing is optimized for every speed and load, reducing fuel consumption –

the single largest engine operating cost. Plus, ESM allows maximum communication flexibility, improves load response and provides engine protection.

The Waukesha ESM. A total engine management system designed and implemented to optimize engine performance and maximize uptime. Starting day one of operation.




**theAPG
CHOICE**

- Meeting global power demand with essential 1 to 3 megawatt engines and gensets.
- Designed for maximum efficiency.
- Low emissions.
- Built to reduce operating costs.
- State-of-the-art technology.
- ESM standard.
- Waukesha quality assurance.

Enginator® Control Panel (ECP). Seamless communication.

Waukesha's optional Enginator control panel (ECP 5006E) is pre-programmed to interface with Waukesha's ESM engine control system. Addition of the ECP creates a fully-integrated control system that is easily installed and requires only minimal connections.

The ECP panel monitors and displays the Enginator's operating conditions (temperature, pressure levels, speeds, volts, amps, alarms and kW levels). It also offers remote monitoring capability with real-time data collection and e-mail alerts of warnings and shutdowns.

When seamless communication in an integrated package is desired, the ECP panel is a certain addition to the APG Enginator.



Waukesha Engine. The name synonymous with powering performance. Ingenious designs. Endurance tested.

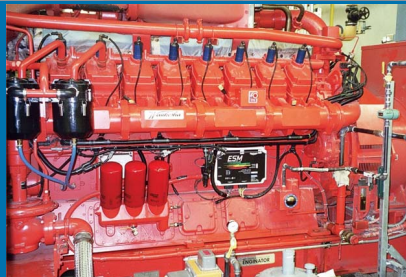
For over a century, Waukesha engines have been built smarter to deliver maximum efficiency and longevity – even in the harshest environments. From remote oil fields in Kazakhstan to critical power generation applications in Chicago, Waukesha spark-ignited, gaseous-fueled reciprocating engines are powering the way energy moves.

Waukesha engines are responsible for developing remote oil and gas resources, supplying bountiful water to communities, and lighting night skies.

Everyday, Waukesha engines are reshaping the quality of life around the world.

www.waukeshaengine.com

APG



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Waukesha

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