



# VHP Series Five VHP7104GSID S5

With Low Fuel Pressure System

ESM2 and emPact Emission Control Systems

1235 kWe @ 1000 rpm for 50 Hz Applications

## Technical Data

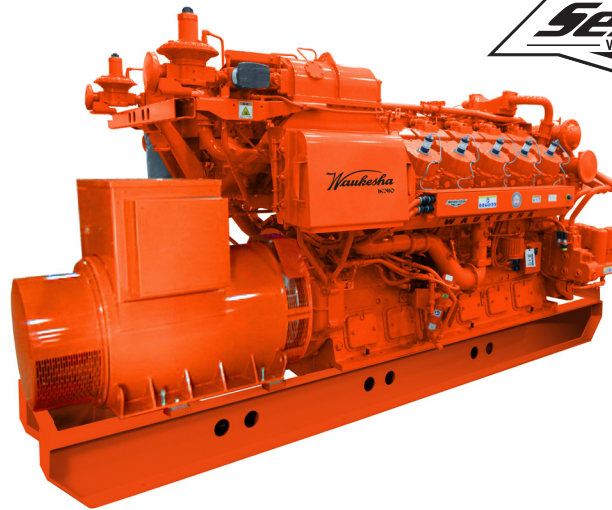
<b>Waukesha engine</b>	<b>L7044GSI S5, four cycle with Low Fuel Pressure System</b>
Cylinders	V12
Piston displacement	7040 cu. in. (115 L)
Compression ratio	9.7:1
Bore & stroke	9.375" x 8.5" (238 x 216 mm)
Jacket water system capacity	100 gal. (379 L)
Lube oil capacity	190 gal. (719 L)
Starting system	24V electric
Minimum Fuel Pressure	1.7 psig (11.7 kPa)

### Dimensions l x w x h inch (mm)

**Water connection**  
205 (5,208) x 85 (2,160) x 103 (2,620)

### Weights lb (kg)

**Water connection** 42,400 (19,232)



INNIO's Waukesha\* VHP\* Series Five rich-burn engines combine the most advanced technology available with the history and experience of the VHP platform, resulting in an engine with 13% more power, better fuel flexibility, 10% lower fuel consumption, up to 20% lower lifecycle costs, and over 30% longer service intervals.

Although Series Five engines are capable of higher power levels than previous versions, the stresses on the components have not increased. This is made possible by enhanced rich-burn combustion through the Miller Cycle, an improved cylinder head design that reduces temperatures in key regions, and an optimized piston design.

Used previously on the P9394GSI engine, the Miller Cycle moves work from the piston to the turbocharger, reducing combustion and exhaust temperatures and making the L7044GSI S5 the most fuel efficient VHP engine ever.

The improved cylinder head design reduces key internal temperatures by up to 40%, increasing reliability and extending the life of the head.

The Series Five piston design has been optimized to reduce unburned hydrocarbons, which improves emissions and fuel consumption while lowering the temperature of the piston itself, improving fuel flexibility even at a higher power rating.

Improvements to the ignition system allow for 4,000-hour spark plug intervals with low-cost, non-precious metal plugs. Matching 4,000 oil change intervals reduce operating costs and trips to site.

Series Five engines come standard with ESM\*2, the next-generation engine controller. ESM2 uses a 12" full color customer interface panel, allowing users to see all engine parameters, trend data, view manuals, and walk through troubleshooting steps, eliminating the need for a laptop computer.

Waukesha's emPact Emission Control System is the option of choice for reducing emissions. emPact optimizes the interaction between the Series Five engine, AFR2 air/fuel ratio control, and the factory-supplied 3-way (NSCR) catalyst to maintain emissions compliance even as engine speed, load, fuel, and environmental conditions change.

## Performance Data

		Continuous Power
		50 Hz 1000 RPM
<b>Intercooler Water Temperature 130°F (54°C)</b>		
	Power kW <sub>e</sub> (water connection cooling)	1,235
	BSFC (LHV) Btu/bhp-hr (kJ/kWh)	7,303 (10,332)
	Fuel Consumption Btu/hr x 1000 (kW)	12,729 (3,731)
Engine-Out Emissions	NO <sub>x</sub> g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	10.83 (4,420)
	CO g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	7.48 (3,050)
	NMHC g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	0.12 (49)
	THC g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	0.48 (200)
Heat Balance	Heat to Jacket Water Btu/hr x 1000 (kW)	3,628 (1,063)
	Heat to Lube Oil Btu/hr x 1000 (kW)	424 (124)
	Heat to Intercooler Btu/hr x 1000 (kW)	785 (230)
	Heat to Radiation Btu/hr x 1000 (kW)	520 (152)
	Total Exhaust Heat Btu/hr x 1000 (kW)	3,184 (933)
Intake/Exhaust System	Induction Air Flow scfm (Nm <sup>3</sup> /hr)	2,382 (3,588)
	Exhaust Flow lb/hr (kg/hr)	11,077 (5,024)
	Exhaust Temperature °F (°C)	1,057 (570)

Rating Standard: The Waukesha Enginotor ratings are based on ISO 3046/1-1995 with an engine mechanical efficiency of 90% and auxiliary water temperature T<sub>cra</sub> as specified limited to ±10°F (±5°C). Ratings also valid for ISO 8528 and DIN 6271, BS 5514 standard atmospheric conditions.

Continuous Power Rating: The highest electrical power output of the Enginotor available for an unlimited number of hours per year, less maintenance.

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

emPact catalyst-out emissions valid from 100% - 75% load and 1200 rpm to 900 rpm and assume proper engine/catalyst maintenance and manual adjustment as necessary.

Consult your local Waukesha representative for system application assistance. The manufacturer reserves the right to change or modify without notice, the design or equipment specifications as herein set forth without incurring any obligation either with respect to equipment previously sold or in the process of construction except where otherwise specifically guaranteed by the manufacturer.

INNIO\* is a leading solutions provider of gas engines, power equipment, a digital platform and related services for power generation and gas compression at or near the point of use. With our Jenbacher\* and Waukesha\* product brands, INNIO pushes beyond the possible and looks boldly toward tomorrow. Our diverse portfolio of reliable, economical and sustainable industrial gas engines generates 200 kW to 10 MW of power for numerous industries globally. We can provide life cycle support to the more than 48,000 delivered gas engines worldwide. And, backed by our service network in more than 100 countries, INNIO connects with you locally for rapid response to your service needs. Headquartered in Jenbach, Austria, the business also has primary operations in Welland, Ontario, Canada, and Waukesha, Wisconsin, US.

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