VHP® Series Five P9394GSI S5

With ESM® 2 and emPact Emission Control System

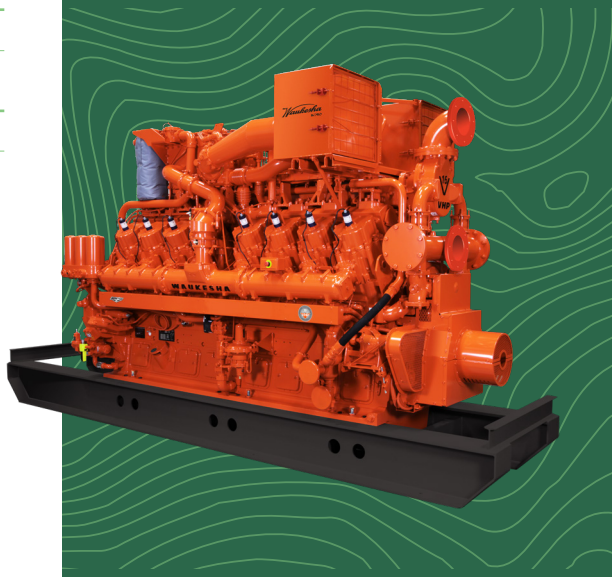
1,875 - 2,500 hp (1,400 - 1,865 kWb)

Technical Data

Cylinders	V16
Piston displacement	9,388 cu. in. (154 L)
Compression ratio	9.7:1
Bore & stroke	9.375" x 8.5" (238 x 216)
Jacket water system capacity	148 gal. (560 L)
Lube oil capacity	239 gal. (904 L)
Starting system	Single air/gas starter: 90-150 psi Single air/gas starter: 50-90 psi Dual air/gas starters: 90-150 psi Dual air/gas starters: 50-90 psi 2 electric starters, 24V each

Dimensions l x w x h inch (mm)
170 (4,318) x 78 (1,981) x 113 (2,870)

Weights lb (kg)
34,000 (15,422)



The Series Five family of Waukesha® VHP® engines gets more powerful with the addition of the 2500 hp P9394GSI S5. The P9394GSI S5 has the same features and benefits as the 1900 hp L7044GSI S5 and 1500 hp L7042GSI S5, creating a family of engines with common controls, operation, and service parts.

Series Five rich-burn engines combine the most advanced technology available with the history and experience of the VHP platform, resulting in a 16-cylinder engine with more power, better fuel flexibility, lower fuel consumption and lifecycle costs, and 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.

The Miller Cycle moves work from the piston to the turbocharger, reducing combustion and exhaust temperatures and making Series Five engines the most fuel efficient VHP engines 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, Waukesha's next-generation engine controller. ESM 2 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 Waukesha-supplied 3-way (NSCR) catalyst to maintain emissions compliance even as engine speed, load, fuel, and environmental conditions change.

SKIDIQ

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A POWERFUL FUTURE

VHP Series Five P9394GSI S5

Performance Data

Intercooler Water Temperature 130°F (54°C)		1200 RPM	1000 RPM
	Power bhp (kWb)	2,500 (1,864)	2,085 (1,555)
	BSFC (LHV) Btu/bhp-hr (kJ/kWh)	6,974 (9,867)	6,982 (9,878)
	Fuel Consumption Btu/hr x 1000 (kW)	17,435 (5,110)	14,557 (4,267)
Engine-Out Emissions	NOx g/bhp-hr (mg/Nm^3 @ 5% O_2)	12.02 (5,155)	11.52 (4,934)
	CO g/bhp-hr (mg/Nm^3 @ 5% O_2)	6.08 (2,606)	6.52 (2,791)
	NMHC g/bhp-hr (mg/Nm^3 @ 5% 0_2)	0.17 (74)	0.15 (63)
	THC g/bhp-hr (mg/Nm^3 @ 5% O_2)	0.50 (214)	0.51 (219)
Heat Balance	Heat to Jacket Water Btu/hr x 1000 (kW)	4,810 (1,410)	4,222 (1,237)
	Heat to Lube Oil Btu/hr x 1000 (kW)	683 (200)	493 (145)
	Heat to Intercooler Btu/hr x 1000 (kW)	670 (196)	455 (133)
	Heat to Radiation Btu/hr x 1000 (kW)	627 (184)	595 (174)
	Total Exhaust Heat Btu/hr x 1000 (kW)	4,635 (1,358)	3,776 (1,107)
Intake/ Exhaust System	Induction Air Flow scfm (Nm^3/hr)	3,267 (4,921)	2,726 (4,106)
	Exhaust Flow lb/hr (kg/hr)	15,190 (6,890)	12,676 (5,750)
	Exhaust Temperature °F (°C)	1,093 (589)	1,067 (575)

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.

SKIDIQ

Engine ships “ready to connect” with SkidIQ full skid monitoring system. SkidIQ is a cloud-based digital solution that integrates real-time engine analytics and compressor monitoring technology. The result is a unified platform that reduces operating expenses and emissions while enhancing uptime

Waukesha – an INNIO brand - INNIO’s Waukesha engines are at the forefront of the energy transition, providing reliable and compliant energy solutions for distributed gas compression and power generation applications. The brand’s rich and lean-burn engines, ranging from 335 hp to 5,000 hp, set an industry standard for low emissions, high reliability, and fuel flexibility.

Waukesha products are continuously upgraded to help operators stay emission-compliant without sacrificing operational excellence. These upgrades include new and remanufactured engines and parts, as well as conversion and modification kits, all of which are backed by OEM warranty and more than 115 years of engine expertise. Additionally, our Waukesha digital solutions include a collaborative solution with Detechtion Technologies for gas compression applications and INNIO’s myPlant platform for power generation applications. Both solutions provide customers with enhanced monitoring and optimization capabilities, resulting in improved performance and reduced downtime.

We connect locally with our customers to enable a rapid response to their service needs, providing enhanced support through our broad network of distributors and solution providers with parts, services, and digital offerings.

Waukesha engines are engineered in Waukesha, Wisconsin, U.S., and manufactured in Welland, Ontario, Canada. To learn more about the company’s products and services, please visit INNIO’s website at **www.waukeshaengine.com** or follow Waukesha engines on **LinkedIn**.

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