

# VHP® Series Five P9394GSI S5

## With ESM® 2

### Upgrade Offering

INNIO's Waukesha® reUp® Engine Program converts and upgrades existing engines to the latest specification, equivalent to new units. The addition of new technology increases engine performance and reliability. Downtime is reduced by providing a swing engine at site before the existing engine is removed or utilizing Waukesha's stock reUp engine program in the event of an unexpected failure.

#### Product details

- Zero hour overhaul engine with new & reUp components
- Each upgraded VHP includes:
  - xCooled heads
  - ESM® 2 control system
  - Air-fuel ratio control (AFR2)
  - Advanced crankcase breather system
  - emPact emission control system (optional)
- Upgraded engines are dynamometer tested at full load and come with an updated bill of material
- Same as new engine warranty

#### Customer benefits

**Improved Package Economics:** VHP reUp Engines use the latest technology to increase engine horsepower and compressor flow at the lowest capital cost. Upgraded remanufactured engines also have increased service intervals (identical to new) and reduced oil consumption. Increased power and reduced operational expense combine to greatly improve package economics.

**Latest Technology:** Each reUp VHP includes the latest parts and control systems to ensure equivalent to new engine performance and reliability. Newly designed power cylinder components allow increased horsepower. ESM 2 and AFR2 improve engine fuel flexibility and the speed and load response required in gas compression applications. The emPact system attains low emissions with little to no operator adjustment.

**Reliability:** VHP reUp Engine components are remanufactured in production environments with supporting quality systems. Engine assembly is completed by trained personnel with the same equipment, processes, and tools used to build new units.

**Component fallout:** Core credit is determined based on a pre-teardown inspection of the core engine. No added fees are applied if components fall out later in the remanufacturing process.

**Warranty:** Waukesha Extended Limited Warranty applies - one year from date of service or two years from sale.

#### Enhanced Design Improves Engine Life and Saves Money

The 9394 VHP Series Five engine builds on the existing VHP platform to make it the most powerful, fuel-efficient engine for gas compression and power generation applications.



Up to 12% lower fuel consumption



Up to 14% lower operating costs



Longer service intervals and reduced lifecycle costs

#### Units available

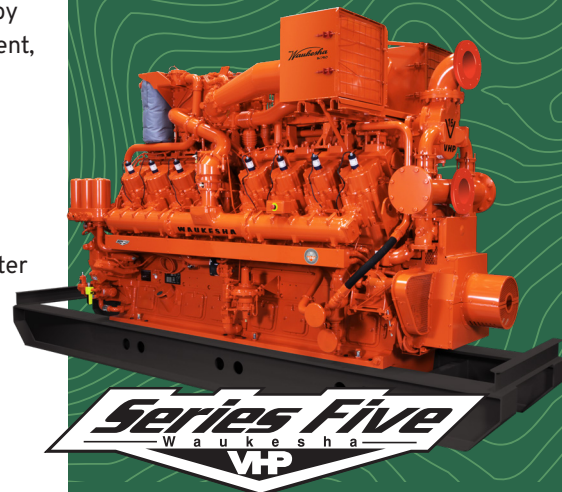
Model	Core Exchange *	reUp Engine
VHP	P9394GSI	P9394GSI S5
	P9390GSI	
	P9390G	
	P9390GL	

\* Available for engines 1997 and newer



See back for more information on SkidIQ

# reUp®



## VHP P9394GSI Series Five Benefits



Factory-direct technical support readily available.



Designed to run on nearly any fuel from field gas and propane to commercial quality natural gas. No derate until 1,250 BTU.



Performs in extreme heat or altitude - No derate up to 5,000 ft at 100° F.



Increased power: Up to 2,500 BHP/1,864 kWb, allowing for multi-well injection or greater power generation.



Upgrading to a VHP P9394GSI S5 reduces emissions up to 90% and reduces CO2e up to 18% generation.

## 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 <sup>3</sup> @ 5% O <sub>2</sub> )	12.02 (5,155)	11.52 (4,934)
	CO g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	6.08 (2,606)	6.52 (2,791)
	NMHC g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	0.17 (74)	0.15 (63)
	THC g/bhp-hr (mg/Nm <sup>3</sup> @ 5% O <sub>2</sub> )	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 <sup>3</sup> /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.



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 Detection 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](http://www.waukeshaengine.com) or follow Waukesha engines on [LinkedIn](https://www.linkedin.com/company/waukeshaengine).

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