

VHP Series Four L5794/L7044GSI-EPA

Multi-Fuel Mobile Power Generation

1,380/1,680 BHP (1,029/1,253 kWb)

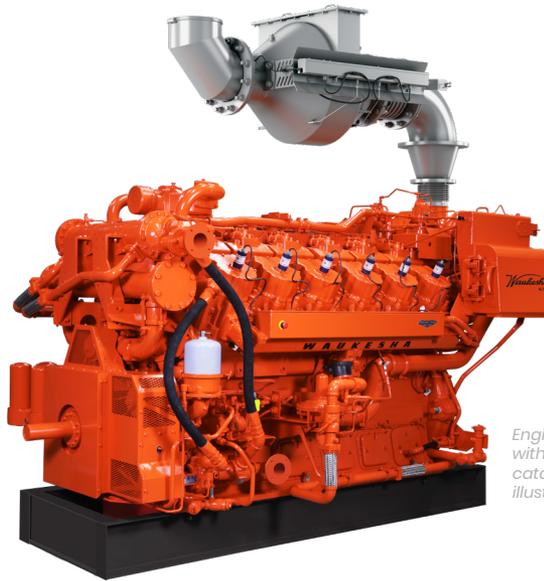
Technical Data

VHP* L7044GSI EPA

Cylinders	V12
Piston displacement	7,040 cu. in. (115 L)
Compression ratio	8:1
Bore & stroke	9.375" x 8.5" (238 x 216)
Jacket water system capacity	100 gal. (379 L)
Lube oil capacity	190 gal. (719 L)
Starting system	90 - 150 psi air/gas; optional 24V electric

VHP L5794GSI EPA

Cylinders	V12
Piston displacement	5,788 cu. in. (95 L)
Compression ratio	8.25:1
Bore & stroke	8.5" x 8.5" (216 x 216 mm)
Jacket water system capacity	107 gal. (405 L)
Lube oil capacity	190 gal. (719 L)
Starting system	90 - 150 psi air/gas; optional 24V electric



Engine supplied with 3-way catalyst but without exhaust piping. Engine-out and catalyst-out exhaust piping shown for illustrative purposes only.

With over 100 years of engine design, development and manufacturing experience, Waukesha* gas engines are redefining oil field power generation in drill rig applications with a non-road EPA mobile certified solution that provides diesel-like performance, fuel flexibility to run on natural gas/field gas and low emissions output for excellent engine performance.

Operation – runs and provides power like a diesel without the cost of diesel fuel

Flexibility – reliable, proven fuel flexibility across a wide BTU range

Emissions – non-road mobile certified by the US EPA

Mobility – Simple to package with a pony skid or tailboard skid for plug and play operation

Power – maintains consistent power output across changing field conditions.

Standard Engine Features

1. Flywheel machined for generator coupling
2. Side inlet jacket water pump header
3. Jacket water outlet includes Dresser coupling
4. Auxiliary water thermostatic valve
5. Main bearing temperature sensors
6. Exhaust temperature sensors
7. Front stub shaft
8. Standard air/gas starter, optional electric starters
9. Three-way catalytic converter, includes housing, elements, flexible bellows; integrated catalyst silencer option
10. I/O box with display and MIL functionality
11. Single point fuel Inlet
12. 5 spin-on oil filters
13. Closed breather system

Engine Power Ratings At Site Conditions

L5794GSI using 91 WKI fuel, BHP

Ambient temperature °F	Elevation ft.							
	1000	2000	3000	4000	5000	6000	7000	8000
77	1,380	1,380	1,380	1,380	1,380	1,380	1,380	1,376
86	1,380	1,380	1,380	1,380	1,380	1,380	1,380	1,376
100	1,380	1,380	1,380	1,380	1,380	1,380	1,380	1,376
104	1,374	1,374	1,374	1,374	1,374	1,374	1,374	1,374
120	1,352	1,352	1,352	1,352	1,352	1,352	1,352	1,352

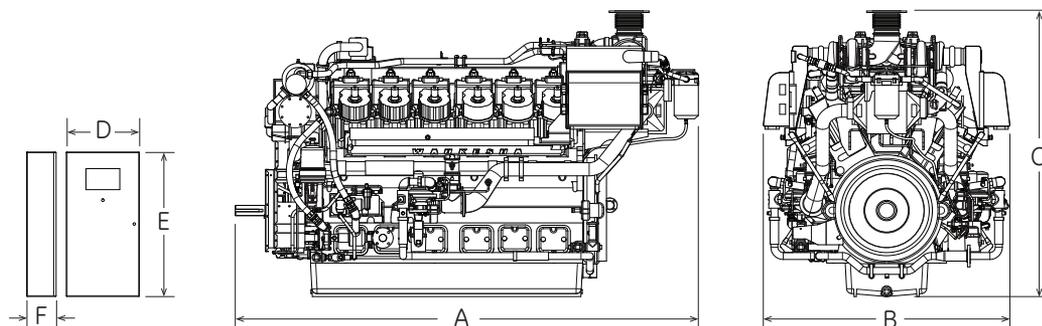
L7044GSI using 91 WKI fuel, BHP

Ambient temperature °F	Elevation ft.							
	1000	2000	3000	4000	5000	6000	7000	8000
77	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,675
86	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,627
100	1,680	1,680	1,680	1,680	1,680	1,680	1,680	1,515
104	1,673	1,673	1,673	1,673	1,673	1,673	1,663	1,476
120	1,646	1,646	1,646	1,646	1,620	1,593	1,481	1,289

Fuel Standard: All natural gas engine ratings are based on 900 BTU/ft³ (35.38 MJ/m³) SLHV, 91 WKI minimum, commercial quality natural gas. Refer to S-7884-7 (latest version) for full gaseous fuel specifications.

Dimensions/Weight

model	A in (mm)	B in (mm)	C in (mm)	D in (mm)	E in (mm)	F in (mm)	weight lb (kg)
L5794GSI EPA	147 (3,734)	85 (2,159)	97.83 (2,485)	24 (610)	48 (1,219)	10.80 (274)	24,760 (11,230)
L7044GSI EPA	147 (3,734)	85 (2,159)	97.83 (2,485)	24 (610)	48 (1,219)	10.80 (274)	24,250 (11,000)



*I/O Panel shipped loose.

**Engine shipped on shipping skid

Three-Way Catalyst (TWC)

Newly designed, cost effective and durable three-way catalytic (TWC) converters are an integral part of our system for US EPA Mobile Certification, which eliminates the need for costly on site emissions testing.

Designed to reduce nitrogen oxides (NOx), carbon monoxide (CO) and hydrocarbons (HC's) by >95% on engines fueled with field gas, LNG, CNG and HD-5 propane. Count on our catalytic converters to deliver easy maintenance, and maximum performance. The TWC has been sized to work in conjunction with our air fuel ratio control to meet the US EPA's stringent requirements for Tier 2 mobile certification.

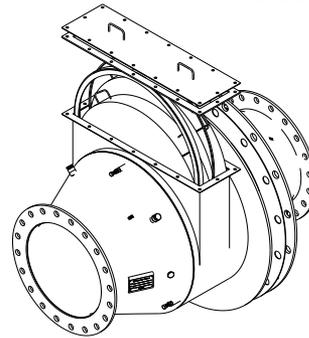
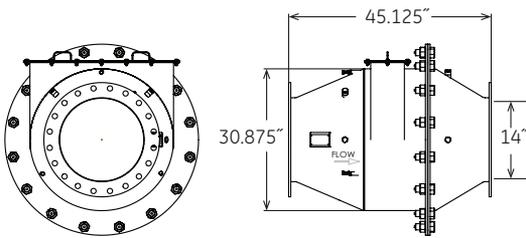
At the heart of the TWC converter is the catalyst element, which is manufactured using sufficient amounts of durable and highly dispersed Platinum Group Metals (PGM). Our metal monoliths supporting the PGM, are brazed, thin-walled stainless steel honeycomb, which are nearly impervious to damage from mechanical or thermal shock and metallurgic erosion.

Meeting the new US EPA standards for NOx, CO and hydrocarbon (HC) emissions from mobile and stationary SI (spark ignited) engines is made easier with these new TWC converters. The TWC converters are formulated to achieve high

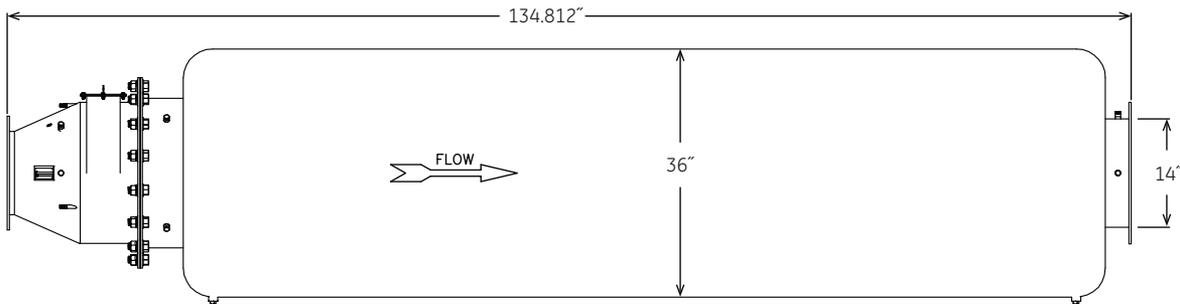
conversion of formaldehyde and CO as well as NOx. The unique design and construction of our catalyst element also reduces backpressure: This means fuel savings and longer catalyst life.

The TWC converter is a dual element design for the VHP L5794/L7044GSI - EPA engines. Its removable cover allows easy access for maintenance and catalyst element replacement.

As an option; Waukesha TWC converter-silencers are recommended for use where equipment must operate continuously in quiet locations—near hospitals, schools, stores, apartments, hotels and residential areas.



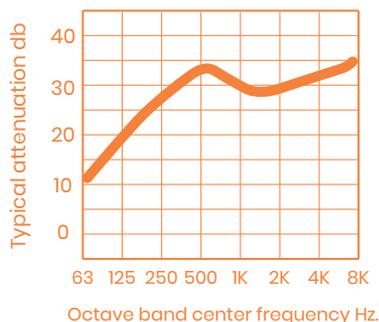
Standard Catalyst - only configuration



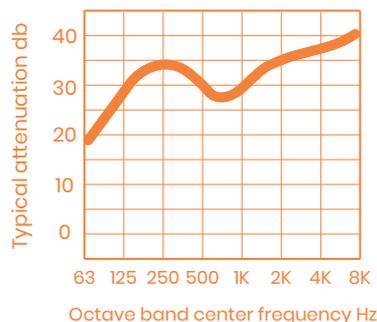
Optional integrated catalyst/silencer

Silencer Sound Attenuation

Critical grade silencer
25-30 dbA



Hospital grade silencer
30-35 dbA



Technical Features

Feature	Description	Advantages
Emissions	US EPA Mobile Certification	Mobile 365 days per year, our package simplifies emissions permitting & compliance
Fuel Flexibility	Dual fuel certified (NG & HD-5 propane)	950 – 1650 BTU HHV on field gas, and on HD-5 propane
Transient Response	Operates load steps like a diesel	Up to 65% load steps and 100% load shed, No load banks Rich burn technology enables low cost onsite power
Packageability	Available engine & genset configurations	<ul style="list-style-type: none"> Includes TWC, skid, and I/O box with display and MIL functionality Meets standard on-road dimensions and weight
Unparalleled Support		<ul style="list-style-type: none"> Providing unparalleled support for all North America Waukesha factory trained technicians service entire engine/genset Providing a range of preventative maintenance programs

Performance Data

Intercooler Water Temperature 130°F (54°C)
for 1200 RPM/60 Hz Operation

		L5794GSI EPA	L7044GSI EPA
	Power bhp (kWb)	1,380 (1,029)	1,680 (1,253)
	BSFC @ 100% Load (LHV) Btu/bhp-hr (kJ/kWh)	7,665 (10,846)	7,881 (11,149)
	Fuel Consumption @ 100% load Btu/hr x 1000 (kW)	10,578 (3,100)	13,240 (3,881)
	Fuel Consumption @ 75% load Btu/hr x 1000 (kW)	8,305 (2,434)	10,323 (3,026)
	Fuel Consumption @ 50% load Btu/hr x 1000 (kW)	6,200 (1,817)	7,495 (2,197)
	Fuel Consumption @ 25% load Btu/hr x 1000 (kW)	3,981 (1,167)	4,628 (1,357)
	Fuel Consumption @ 10% load Btu/hr x 1000 (kW)	2,798 (820)	3,412 (1,000)
Emissions	NOx g/bhp-hr (mg/Nm ³ @ 5% O ₂)	0.5 (185)	0.5 (185)
	CO g/bhp-hr (mg/Nm ³ @ 5% O ₂)	1.8 (667)	1.2 (444)
	NMHC g/bhp-hr (mg/Nm ³ @ 5% O ₂)	0.15 (56)	0.20 (74)
	THC g/bhp-hr (mg/Nm ³ @ 5% O ₂)	1.39 (513)	1.70 (630)
Heat Balance	Heat to Jacket Water Btu/hr x 1000 (kW)	3,037 (890)	3,849 (1,128)
	Heat to Lube Oil Btu/hr x 1000 (kW)	470 (138)	567 (166)
	Heat to Intercooler Btu/hr x 1000 (kW)	132 (39)	179 (53)
	Heat to Radiation Btu/hr x 1000 (kW)	674 (198)	724 (212)
	Total Exhaust Heat Btu/hr x 1000 (kW)	2,959 (867)	3,900 (1,143)
Intake/Exhaust System	Induction Air Flow scfm (Nm ³ /hr)	2,001 (3,014)	2,424 (3,651)
	Exhaust Flow lb/hr (kg/hr)	8,984 (4,075)	11,273 (5,113)
	Exhaust Temperature °F (°C)	1,136 (613)	1,179 (637)

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.

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

This engine meets all the requirements of the US EPA off road mobile regulation 40 CFR Part 1048 for SI engines. The emission values expressed are for reference only.

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