

VGF® H24SE

With ESM® 2 and emPact Emission Control System

415 - 738 bhp (310 - 550 kWb)

Technical Data

Cylinders	Inline 8
Piston displacement	1,462 cu. in. (24 L)
Compression ratio	8.6:1
Bore & stroke	5.98" x 6.5" (152 x 165 mm)
Jacket water system capacity	20 gal. (75 L)
Lube oil capacity	56 gal. (212 L)
Fuel Pressure Range	25 - 50 psi (1.72 - 3.45 bar)
Starting system	120 psi max. air/gas 24V DC electric
Emissions	U.S. EPA Mobile and Stationary Certified (optional)

The Waukesha® VGF® series of high-speed engines are built with the durability expected from a medium-speed engine. The SE family of VGF engines with ESM® 2 features the most advanced and comprehensive control capability in its class. Non-road EPA mobile and stationary certification is available direct from INNIO. Additionally, system reliability and performance upgrades have been integrated into the turbocharging/wastegate, oil filtration, oil cooling, crankcase breathing, and cylinder heads. Reliability enhancements on the H24SE engine include:

- **Point-to-Point (P2P) harnessing** system featuring modular, technician friendly construction and robust connectors, designed to improve durability and simplify service.
- **Control Module Cabinet (CMC)**, an IP65 enclosure containing all sensitive electronics including the ESM® 2, ignition module, and power distribution. The CMC provides easier access to the main harnessing connections, and features a single point grounding strategy, simplifying engine installation and enhancing protection from environmental elements.

ESM®2 and emPact

The H24SE is equipped with ESM®2, Waukesha's next-generation engine

Dimensions l x w x h inch (mm)
96.5 (2,453) x 48 (1,218) x 68.4 (1,737)
Weights lb (kg)
8,300 (3,773)

controller, which features a full-color customer interface panel. This interface allows users to monitor engine parameters, trend data, access manuals, and follow step-by-step troubleshooting guidance, supporting efficient operation and service.

Waukesha's emPact Emission Control System combines an engine, catalyst, and air/fuel ratio control, factory-designed for enhanced interaction and improved performance. It consists of a factory supplied catalyst, pre- and post-catalyst oxygen sensing, and differential temperature and pressure sensors.

The emPact display panel provides real-time engine operating parameters, including faults, alarms, logs, and shutdowns. Waukesha's emPact Emission Control System provides a one-stop shop for compliance and a simple method of obtaining and meeting emission permits.

The VGF Series simplifies maintenance procedures. The engine design allows easy access to the oil pump, main bearings and rod bearings—without the need to lower the oil pan or remove the engine from the site. Commonality of parts between VGF models reduces the amount of inventory needed for servicing a fleet. Standard design features, such as independent heads, simplify maintenance work.



Product Features:

- Advanced ESM 2/AFR2 Controls
- Wide range of ISO duty cycle-power ratings
- Closed crankcase breather
- Spin-on oil filters
- Optional emPact emissions control system (U.S. EPA Mobile and Stationary Certified)

A POWERFUL FUTURE

Waukesha

VGF H24SE

Performance Data

Jacket Water Temperature 200°F (93°C) Intercooler Water Temperature 130°F (54°C)		Continuous Power		Prime Power		Limited Time Prime Power / Standby Power	
		1,500 RPM 50Hz	1,800 RPM 60 Hz	1,500 RPM 50Hz	1,800 RPM 60 Hz	1,500 RPM 50Hz	1,800 RPM 60 Hz
	Power bhp (kWb)	443 (330)	532 (396)	559 (417)	671 (501)	615 (458)	738 (550)
	BSFC (LHV) Btu/bhp-hr (kJ/kWh)	7638 (10806)	8014 (11338)	7665 (10844)	7976 (11284)	7722 (10925)	8003 (11323)
	Fuel Consumption Btu/hr x 1000 (kW)	3384 (992)	4261 (1249)	4287 (1257)	5353 (1569)	4747 (1391)	5903 (1730)
Engine-Out Emissions	NOx g/bhp-hr (g/Nm3 @ 5% O2)	12.3 (4.7)	12.7 (4.9)	11.6 (4.4)	11.8 (4.5)	11.2 (4.3)	13.5 (5.2)
	CO g/bhp-hr (g/Nm3 @ 5% O2)	10.3 (3.9)	10.9 (4.1)	10.3 (3.9)	10.8 (4.1)	10.5 (4.0)	11.4 (4.4)
	NMHC g/bhp-hr (g/Nm3 @ 5% O2)	0.36 (0.07)	0.33 (0.06)	0.35 (0.06)	0.33 (0.06)	0.23 (0.03)	0.21 (0.02)
	THC g/bhp-hr (g/Nm3 @ 5% O2)	1.3 (0.48)	1.1 (0.43)	1.1 (0.42)	1.0 (0.37)	0.5 (0.17)	0.4 (0.16)
Heat Balance	Heat to Jacket Water Btu/hr x 1000 (kW)	847 (248)	1069 (313)	1073 (315)	1464 (429)	1193 (350)	1638 (480)
	Heat to Auxiliary Water Btu/hr x 1000 (kW)	198 (58)	268 (79)	261 (76)	387 (113)	297 (87)	448 (131)
	Heat to Radiation Btu/hr x 1000 (kW)	142 (42)	157 (46)	151 (44)	171 (50)	155 (45)	171 (50)
	Total Exhaust Heat Btu/hr x 1000 (kW)	949 (278)	1259 (369)	1247 (366)	1638 (480)	1403 (411)	1823 (534)
Intake/ Exhaust System	Induction Air Flow scfm (Nm3/hr)	625 (942)	786 (1184)	791 (1191)	987 (1486)	876 (1319)	1085 (1634)
	Exhaust Flow lb/hr (kg/hr)	2907 (1319)	3655 (1658)	3678 (1668)	4588 (2081)	4070 (1846)	5047 (2289)
	Exhaust Temperature °F (°C)	1136 (613)	1197 (647)	1180 (638)	1241 (672)	1198 (648)	1254 (679)
Cooling Water Flow	Jacket Water gpm (l/m)	103 (390)	130 (492)	103 (390)	130 (492)	103 (390)	130 (492)
	Auxiliary Water gpm (l/m)	24 (92)	35 (132)	24 (92)	35 (132)	24 (92)	35 (132)

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.

In accordance with ISO 8528, the Rating for Emergency Standby Power (ESP) is defined as follows: The maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hours of operation per year with maintenance intervals and procedures being carried out as prescribed by the manufactures. The permissible average power output over 24 hours of operation shall not exceed 70% of the ESP rating.