

BASIC SPECIFICATIONS

AIR CLEANERS – Dry type with rain shield and service indicators.

BARRING DEVICE – Manual.

BEARINGS – Heavy duty, replaceable, precision type.

BREATHER – Closed system.

CONNECTING RODS – Forged steel, rifle drilled.

COOLING SYSTEM – Choice of mounted radiator with pusher fan, core guard and duct adaptor, heat exchanger with surge tank, or connection for remote radiator cooling.

CRANKCASE – Integral crankcase and cylinder frame.

CRANKSHAFT – Counterweighted, forged steel, hardened journals, dynamically balanced, with sealed viscous vibration damper.

CYLINDER HEADS – Twelve interchangeable. Two hard faced intake and two hard faced inconel exhaust valves per cylinder. Hard faced intake and exhaust valve seat inserts.

CYLINDERS – 9.375" (238 mm) bore x 8.5" (216 mm) stroke. Removable wet cylinder liners. Number of cylinders - Twelve.

ENGINATOR BASE – Engine, generator and radiator or heat exchanger are mounted and aligned on a welded steel, wide flange base, designed for solid mounting on an inertia block, with standard through-base holes for lifting.

ENGINE PROTECTION SHUTDOWN CONTACTS – For high water temperature, low oil pressure, high intake manifold temperature (standard engine mounted thermocouples with two thermocouple relays – shipped loose), and overspeed (electronic speed switch – shipped loose). Also includes engine detonation sensing, alarm and shutdown, as standard (see separate description of Detonation Sensing Module). Two on/off pushbuttons are supplied, one on each side of the engine. Use all of the above in conjunction with a DC control panel for unit shutdown, (reference WPS Engomatic® controls).

Note: DC shutdown control panel is not supplied as standard.

EXHAUST SYSTEM – Water cooled exhaust manifold with single vertical exhaust at rear. Flexible stainless steel exhaust connection 8" (203 mm) long with 8" outlet flange.

FUEL SYSTEM – Dual natural gas carburetors and Fisher gas regulators (model 99 for GSI, model 133L for GSID). 24V DC gas solenoid valve (shipped loose). 20-25 PSI (1.4-1.7 bar) gas pressure recommended on GSI; 12" - 60 psi (304 mm - 4 bar) recommended on GSID. Single fuel connection point for GSI. Two connection points on GSID.

GENERATOR - Open, dripproof, direct connected, fan cooled, 2/3 pitch, A.C. revolving field type, single bearing generator with brushless exciter, short circuit sustain (PMI, AREP or PMG type maintains 270% of rated generator current for up to 10 seconds on 105° C temperature rise generators; maintains 250% of current on 130° C rise generators) and damper windings. TIF and Deviation Factor within NEMA MG-1.22. Voltage 480/277, 3 phase, 4 wire, Wye 60 Hz and 400/230, 3 phase, 4 wire, Wye 50 Hz. Other voltages are available, consult factory. Insulation material NEMA Class F. Temperature rise within NEMA (105° C) for continuous power duty, within NEMA (130° C) for standby duty. All generators are rated at 0.8 Power Factor, are mounted on the engine flywheel housing and have multiple steel disc flexible coupling drive. All continuous power gensets have 10% overload capacity.

GOVERNOR – Woodward Model EG3P electric actuator (mounted) and magnetic pickup (mounted). Requires a separate electric governor control, Woodward Model 2301A or similar, (not included).

IGNITION – Waukesha Custom Engine Control Ignition Module. Electronic digital ignition system.

INSTRUMENT CONNECTIONS – Engine mounted junction box includes ungrounded type K thermocouples wired to a bulk head connector for jacket water temperature, lube oil temperature and intake manifold temperature. A 25 ft. (7.6 m) customer interface harness and standard thermocouple harness are provided for making connections to a customer supplied panel. A single header block for lube oil pressure and intake manifold pressure is engine mounted. Instruments and panel are by others. Recommend optional Model 4000 remote engine instrument panel, especially for continuous power installations.

INTERCOOLER – Air to water.

JUNCTION BOXES – Separate AC, DC, and instrument/thermocouple junction boxes for engine wiring and external connections.

LUBRICATION – Full pressure, positive displacement pump. Full flow oil filter (shipped loose) and flexible connections (shipped loose). 50 or 60 Hz, 230 volt AC, single phase electric motor driven intermittent prelube pump with motor starter (other voltages can be specified).

Note: External control logic required to start/stop prelube pump.

OIL COOLER – Shell and tube type (mounted).

OIL PAN – Cast alloy iron base type with removable doors.

PAINT – Oilfield Orange.

PISTONS – Aluminum with floating pin. Oil cooled. Naturally aspirated engines supplied with high compression ratio pistons.

STARTING EQUIPMENT – Two 24V DC electric starting motors, crank termination switch (shipped loose).

TURBOCHARGERS – Dry type, wastegate controlled.

VOLTAGE REGULATOR – SCR static automatic type providing 1% regulation from no load to full load. Single phase sensing and automatic subsynchronous speed protection. Includes voltage adjustment rheostat (shipped loose).

WATER CIRCULATING SYSTEM

Auxiliary Circuit – For oil cooler and intercooler. Pump is belt driven from crankshaft pulley.

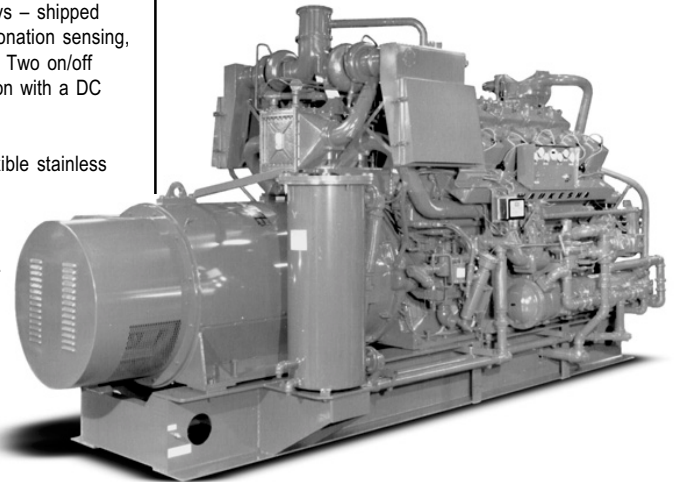
Engine Jacket – Belt driven water pump, 175 – 180° F (79 – 82° C) thermostatic temperature regulation full flow bypass. Single ANSI flange connections for inlet and outlet on water connect units.

WAUKESHA CUSTOM ENGINE CONTROL DETONATION SENSING MODULE (DSM) – Includes individual cylinder sensors, Detonation Sensing Module and filter, all factory mounted. Device is compatible with Waukesha CEC Ignition Module only. 24V DC power is required. The DSM meets Canadian Standards Association Class 1, Division 2, Group D hazardous location requirements.



VHP7100GSI

Gas Enginator®
Generating System
765 - 1350 kW



Enginator shown with options.

Model VHP7100GSI
Turbocharged and Intercooled
Gas Fueled Enginator

SPECIFICATIONS

Engine	Jacket Water Capacity
L7042GSI, Four Cycle, Overhead Valve	100 gal. (379 L)
Cylinders	Starting System
V 12	24 V Electric
Piston Displacement	Fuel LHV
7040 cu. in. (115 L)	900 Btu/ft ³ (33.5 J/cm ³)
Bore & Stroke	Lube Oil Capacity
9.375" x 8.5" (238 x 216 mm)	73 gal. (276 L)
Compression Ratio	
8:1	



PERFORMANCE DATA: VHP7100GSI GAS ENGINATOR® GENERATING SYSTEM

HEAT EXCHANGER COOLING Intercooler Water: 85°F (29°C)	CONTINUOUS POWER*			STANDBY POWER	
	1200 rpm	900 rpm	1000 rpm	1200 rpm	1000 rpm
	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz
kW RATING	1100	825	920	1350	1125
Fuel Consumption x 1000 Btu/h (kW)	12234 (3586)	8825 (2586)	9972 (2923)	14563 (4268)	11875 (3480)
Jacket Water x 1000 Btu/h (kW)	3543 (1038)	2594 (760)	2955 (866)	4125 (1209)	3434 (1006)
Intercooler x 1000 Btu/h (kW)	365 (107)	163 (48)	229 (67)	575 (169)	359 (105)
Lube Oil x 1000 Btu/h (kW)	356 (104)	291 (85)	314 (92)	389 (114)	344 (101)
Heat Radiated x 1000 Btu/h (kW)	854 (250)	742 (217)	761 (223)	813 (238)	708 (207)
Exhaust Heat** x 1000 Btu/h (kW)	3363 (986)	2220 (651)	2574 (754)	4055 (1188)	3192 (936)
Exhaust Flow lb/h (kg/h)	10467 (4748)	7550 (3425)	8537 (3872)	12607 (5719)	10286 (4666)
Exhaust Temperature °F (°C)	1161 (627)	1057 (569)	1090 (588)	1177 (636)	1121 (605)
Induction Air Flow scfm (m³/min)	2297 (65)	1657 (47)	1874 (53)	2769 (78)	2259 (64)

WATER CONNECTION COOLING Intercooler Water: 130°F (54°C)	CONTINUOUS POWER*			STANDBY POWER	
	1200 rpm	900 rpm	1000 rpm	1200 rpm	1000 rpm
	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz
kW RATING	1050	785	875	1300	1075
Fuel Consumption x 1000 Btu/h (kW)	11602 (3400)	8332 (2442)	9436 (2766)	13911 (4077)	11260 (3300)
Jacket Water x 1000 Btu/h (kW)	3499 (1025)	2527 (741)	2893 (848)	4117 (1207)	3382 (991)
Intercooler x 1000 Btu/h (kW)	228 (67)	89 (26)	120 (35)	401 (118)	212 (62)
Lube Oil x 1000 Btu/h (kW)	350 (103)	285 (84)	308 (90)	382 (112)	338 (99)
Heat Radiated x 1000 Btu/h (kW)	447 (131)	708 (207)	766 (224)	878 (257)	781 (229)
Exhaust Heat** x 1000 Btu/h (kW)	3495 (1024)	2045 (599)	2364 (693)	3697 (1084)	2879 (844)
Exhaust Flow lb/h (kg/h)	9927 (4503)	7129 (3234)	8078 (3664)	12044 (5463)	9750 (4423)
Exhaust Temperature °F (°C)	1125 (607)	1031 (555)	1058 (570)	1145 (618)	1096 (591)
Induction Air Flow scfm (m³/min)	2179 (62)	1565 (44)	1773 (50)	2645 (75)	2141 (61)

RADIATOR COOLING - MOUNTED Intercooler Water: 130°F (54°C)	CONTINUOUS POWER*			STANDBY POWER	
	1200 rpm	900 rpm	1000 rpm	1200 rpm	1000 rpm
	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz
kW RATING	1000	765	840	1260	1050
Fuel Consumption x 1000 Btu/h (kW)	11395 (3340)	8307 (2435)	9315 (2730)	13868 (4064)	11201 (3283)
Jacket Water x 1000 Btu/h (kW)	3444 (1009)	2520 (739)	2861 (839)	4106 (1203)	3366 (987)
Intercooler x 1000 Btu/h (kW)	215 (63)	88 (26)	115 (34)	397 (116)	209 (61)
Lube Oil x 1000 Btu/h (kW)	347 (102)	285 (84)	306 (90)	381 (112)	337 (99)
Heat Radiated x 1000 Btu/h (kW)	835 (245)	702 (206)	760 (223)	872 (255)	781 (229)
Exhaust Heat** x 1000 Btu/h (kW)	3040 (891)	2038 (597)	2331 (683)	3686 (1080)	2862 (839)
Exhaust Flow lb/h (kg/h)	9740 (4418)	7106 (3223)	7968 (3614)	12004 (5445)	9696 (4398)
Exhaust Temperature °F (°C)	1123 (606)	1030 (554)	1055 (568)	1145 (618)	1095 (591)
Induction Air Flow scfm (m³/min)	2138 (61)	1560 (44)	1749 (50)	2637 (75)	2130 (60)
Radiator Air Flow scfm (m³/min)	112000 (3172)	80000 (2266)	92000 (2605)	122000 (3455)	97000 (2747)

Typical heat balance data is shown. Consult factory for guaranteed data.

***Continuous Power Rating:** The highest electrical power output of the Enginator available for an unlimited number of hours per year, less maintenance. It is permissible to operate the Enginator with up to 10% overload for two hours in each 24 hour period.

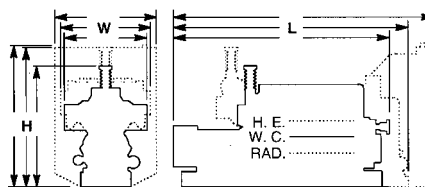
Standby Power Rating: This rating applies to those systems used as a secondary source of electrical power. This rating is the electrical power output of the Enginator (no overload) 24 hours a day, for the duration of the primary power source outage.

Rating Standard: The Waukesha Enginator power rating descriptions are in accordance to ISO 8528, DIN6271 and BS5514. It is also valid for ISO 3046/1-1995 with an engine mechanical efficiency of 90% and Tcr (clause 10.0) is limited to ± 10° F (5° C).

**Heat rejection based on cooling exhaust gas to 85° F (29° C).

Cooling

Equipment	L in (mm)	W in (mm)	H in (mm)	Avg. Wt. lb (kg)
Heat Exchanger	218 (5540)	80 (2030)	108 (2740)	36000 (16330)
Water Cooler	201 (5110)	80 (2030)	108 (2740)	34000 (15425)
Radiator	238 (6050)	114 (2900)	138 (3500)	39750 (18030)



Waukesha

WAUKESHA POWER SYSTEMS

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Consult your local Waukesha Distributor 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.