

SD500

Industrial Diesel Generator Set

EPA CERTIFIED STATIONARY EMERGENCY

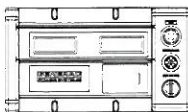
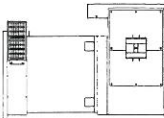
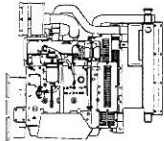
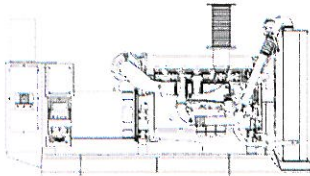
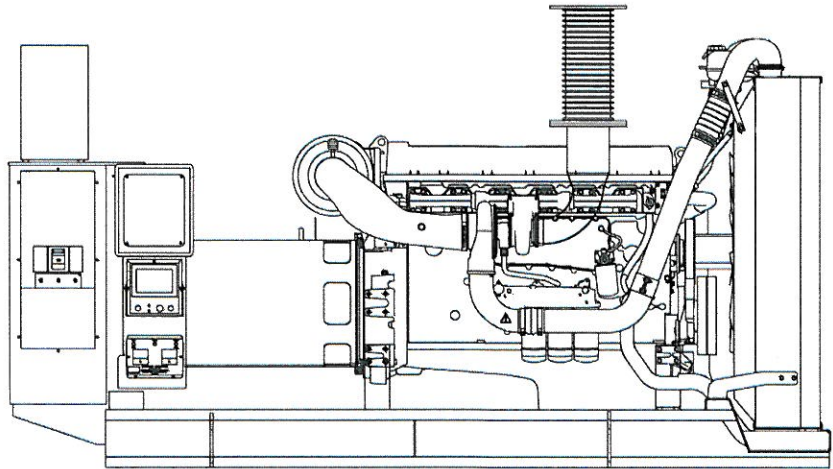
500 kW Diesel

1 of 5

Standby Power Rating
500KW 60 Hz

Prime Power Rating
450KW 60 Hz

EPA Certified Prime ratings are not available in the U.S. or its Territories for engine model year 2011 and beyond



features

benefits

Generator Set

- PROTOTYPE & TORSIONALLY TESTED
- UL2200 TESTED
- RHINOCOAT PAINT SYSTEM
- WIDE RANGE OF ENCLOSURES AND TANKS

- ▶ PROVIDES A PROVEN UNIT
- ▶ ENSURES A QUALITY PRODUCT
- ▶ IMPROVES RESISTANCE TO ELEMENTS
- ▶ PROVIDES A SINGLE SOURCE SOLUTION

Engine

- EPA TIER COMPLIANT
- INDUSTRIAL TESTED, GENERAC APPROVED
- POWER-MATCHED OUTPUT
- INDUSTRIAL GRADE

- ▶ ENVIRONMENTALLY FRIENDLY
- ▶ ENSURES INDUSTRIAL STANDARDS
- ▶ ENGINEERED FOR PERFORMANCE
- ▶ IMPROVES LONGEVITY AND RELIABILITY

Alternator

- TWO-THIRDS PITCH
- LAYER WOUND ROTOR & STATOR
- CLASS H MATERIALS
- DIGITAL 3-PHASE VOLTAGE CONTROL

- ▶ ELIMINATES HARMFUL 3RD HARMONIC
- ▶ IMPROVES COOLING
- ▶ HEAT TOLERANT DESIGN
- ▶ FAST AND ACCURATE RESPONSE

Controls

- ENCAPSULATED BOARD W/ SEALED HARNESS
- 4-20mA VOLTAGE-TO-CURRENT SENSORS
- SURFACE-MOUNT TECHNOLOGY
- ADVANCED DIAGNOSTICS & COMMUNICATIONS

- ▶ EASY, AFFORDABLE REPLACEMENT
- ▶ NOISE RESISTANT 24/7 MONITORING
- ▶ PROVIDES VIBRATION RESISTANCE
- ▶ HARDENED RELIABILITY

primary codes and standards



SD500

application and engineering data

ENGINE SPECIFICATIONS

General

Make	Volvo
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Engine Reference	See Emissions Data Sheet
Cylinder #	6
Type	In-Line
Displacement - L (cu. in.)	16.12(983.7)
Bore - mm (in.)	144(5.67)
Stroke - mm (in.)	165(6.5)
Compression Ratio	16.5:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	7 with one thrust
Connecting Rod Type	I-Beam Section
Cylinder Head Type	One piece cast iron
Piston Type	Aluminum w/ cooling cavity, oil cooled
Crankshaft Type	Case Hardened, Die Forged

Valve Train

Lifter Type	Solid
Intake Valve Material	High Temp
Exhaust Valve Material	High Temp

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	+/- 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity - Qts (L)	42 (39.7)

Cooling System

Cooling System Type	Closed Recovery
Water Pump	Prelubed, Self Sealing
Fan Type	Pusher
Fan Blade Number	9
Fan Diameter mm (in.)	991 (39)
Coolant Heater Wattage	2x2000W
Coolant Heater Standard Voltage	240VAC

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (microns)	10
Fuel Inject Pump Make	Electronic
Fuel Pump Type	Engine Driven Gear
Injector Type	Multi-hole, Nozzle Type
Engine Type	Direct Injection
Fuel Supply Line - mm (in.)	12.7mm (1/2)
Fuel Return Line - mm (in.)	12.7mm (1/2)

Engine Electrical System

System Voltage	24VDC
Battery Charging Alternator	80 Amps at 24V
Battery Size (at 0 °C)	700CCA, 90AH
Battery Group	Group 27F
Battery Voltage	(2) 12VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Model	Generac WEG
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<3%
Telephone Interference Factor (TIF)	<50
Alternator Type	Self-Ventilated, Drip-Proof
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Load Capacity - Standby	100%
Load Capacity - Prime	110%
Prototype Short Circuit Test	Y

Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	+/- 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99
 NFPA 110
 ISO 8528-5
 ISO 1708A.5
 ISO 3046
 BS5514
 SAE J1349
 DIN6271
 IEEE C62.41 TESTING
 NEMA ICS 1

Rating Definitions:

Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

SD500

operating data (60Hz)

POWER RATINGS (kW)

Single-Phase 120/240VAC @1.0pf
Three-Phase 120/208VAC @0.8pf
Three-Phase 120/240VAC @0.8pf
Three-Phase 277/480VAC @0.8pf
Three-Phase 600VAC @0.8pf

STANDBY	
-	Amps:
500	Amps: 1735
500	Amps: 1504
500	Amps: 752
500	Amps: 601

PRIME	
-	Amps:
450	Amps: 1561
450	Amps: 1353
450	Amps: 677
450	Amps: 541

STARTING CAPABILITIES (sKVA)

		sKVA vs. Voltage Dip											
		480VAC						208/240VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard*	500W	457	686	914	1143	1371	1600	429	643	857	1071	1286	1500
Upsize 1**	600W	471	707	943	1179	1414	1650	543	814	1086	1357	1629	1900
Upsize 2**	792W	743	1114	1486	1857	2229	2600	571	857	1143	1429	1714	2000

*All Generac industrial alternators utilize Class H materials. Standard alternator provides less than or equal to Class F temperature rise. Upsize 1 provides less than or equal to Class A temperature rise

FUEL

Fuel Consumption Rates**

Fuel Pump Lift - in (m)	STANDBY			PRIME		
	Percent Load	gph	lph	Percent Load	gph	lph
40(1.0)	25%	8.7	32.9	25%	7.7	28.3
	50%	15.3	57.9	50%	13.4	50.7
	75%	22.7	85.9	75%	19.9	75.3
	100%	31.3	118.5	100%	28.1	106.4

COOLING

** Refer to "Emissions Data Sheets" for maximum fuel flow for EPA and SCAQMD permitting purposes.

Coolant Capacities - Gal (L)		STANDBY		PRIME	
System	15.9 (60.2)	Coolant Flow per Minute	gpm (lpm)	122 (462)	122 (462)
Engine	8.7 (33)	Heat rejection to Coolant	BTU/min	788,220	723,360
Radiator	7.1 (26.9)	Inlet Air	cfm (m3/hr)	660(23,308)	660(23,308)
		Max. Operating Radiator Air Temp	F° (C°)	60(140)	60(140)
		Max. Operating Ambient Temperature	F° (C°)	50(122)	50(122)

COMBUSTION AIR REQUIREMENTS

Flow at Rated Power	STANDBY		PRIME	
	cfm (m3/min)	45.8 (1617)	44.0 (1554)	

EXHAUST

Exhaust Outlet Size - N.P.T. (female)	STANDBY		PRIME	
	Exhaust Flow (Rated Output)	cfm (m3/hr)	110.4(3899)	100.6 (3553)
1x8" single	Maximum Backpressure	Kpa ("HG) ("H2O)	10(3) [40]	10(3) [40]
	Exhaust Temp (Rated Output)	oF (oC)	893 (479)	817 (436)

ENGINE

Rated Engine Speed	STANDBY		PRIME	
	rpm	1800	1800	
Horsepower at Rated kW***	hp	757	681	
Piston Speed	ft/min (m/min)	1956 (594)	1956 (594)	
BMEP	psi	339	302	

*** Refer to "Emissions Data Sheets" for maximum bHP for EPA and SCAQMD permitting purposes.

SD500

standard features and options

- ☒ Genset Vibration Isolation
- ☐ IBC Seismic Certified/Seismic Rated Vibration Isolators
- ☐ Extended warranty
- ☐ Export boxing
- ☐ Gen-Link Communications Software
- ☐ Steel Enclosure
- ☐ Aluminum Enclosure

Std

Opt

Opt

Opt

Opt

Opt

Opt

ENGINE SYSTEM

General

- ☐ Oil Drain Extension
- ☐ Oil Make-Up System
- ☐ Oil Heater

Std

Opt

Opt

Fuel System

- ☒ Fuel lockoff solenoid
- ☒ Secondary fuel filter
- ☒ Stainless steel flexible exhaust connection
- ☒ Industrial Exhaust Silencer
- ☐ Critical Exhaust Silencer
- ☐ Flexible fuel lines
- ☐ Primary fuel filter
- ☐ ULC/UL142 Fuel Tank

Std

Std

Std

Std

Opt

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Cooling System

- ☐ 120VAC Coolant Heater
- ☐ 208VAC Coolant Heater
- ☐ 240VAC Coolant Heater
- ☐ Other Coolant Heater
- ☒ Closed Coolant Recovery System
- ☒ UV/Ozone resistant hoses
- ☒ Factory-Installed Radiator
- ☒ Radiator Drain Extension

Opt

Opt

Opt

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Std

Std

Std

Std

Engine Electrical System

- ☒ Battery charging alternator
- ☒ Battery cables
- ☒ Battery tray
- ☐ Battery box
- ☐ Battery heater
- ☒ Solenoid activated starter motor
- ☒ Air cleaner
- ☒ Fan guard
- ☒ Radiator duct adapter
- ☐ 2A battery charger
- ☐ 10A UL float/equalize battery charger
- ☒ Rubber-booted engine electrical connections

Std

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ALTERNATOR SYSTEM

- ☒ UL2200 GENprotect™
- ☐ Main Line Circuit Breaker
- ☐ 2nd Circuit Breaker
- ☐ 3rd Circuit Breaker
- ☐ Alternator Upsizing
- ☐ Anti-Condensation Heater
- ☐ Tropical coating

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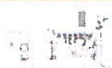
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Control Panel

- ☒ Digital H Control Panel - Dual 4x20 Display
- ☐ Digital G-100 Control Panel - Touchscreen
- ☐ Digital G-200 Paralleling Control Panel - Touchscreen
- ☒ Programmable Crank Limiter
- ☐ 21-Light Remote Annunciator
- ☐ Remote Relay Panel (8 or 16)
- ☒ 7-Day Programmable Exerciser
- ☒ Special Applications Programmable PLC
- ☒ RS-232
- ☒ RS-485
- ☒ All-Phase Sensing DVR
- ☐ Full System Status
- ☐ Utility Monitoring (Req. H-Transfer Switch)
- ☐ 2-Wire Start Compatible
- ☐ Power Output (kW)
- ☐ Power Factor
- ☒ Reactive Power
- ☐ All phase AC Voltage
- ☐ All phase Currents
- ☐ Oil Pressure
- ☐ Coolant Temperature
- ☐ Coolant Level
- ☐ Oil Temperature
- ☐ Fuel Pressure
- ☐ Engine Speed
- ☐ Battery Voltage
- ☐ Frequency
- ☒ Date/Time Fault History (Event Log)
- ☒ UL2200 GENprotect™
- ☐ Low-Speed Exercise
- ☒ Isochronous Governor Control
- ☐ -40deg C - 70deg C Operation
- ☐ Waterproof Plug-In Connectors
- ☐ Audible Alarms and Shutdowns
- ☐ Not in Auto (Flashing Light)
- ☐ On/Off/Manual Switch
- ☒ E-Stop (Red Mushroom-Type)
- ☐ Remote E-Stop (Break Glass-Type, Surface Mount)
- ☐ Remote E-Stop (Red Mushroom-Type, Surface Mount)
- ☐ Remote E-Stop (Red Mushroom-Type, Flush Mount)
- ☒ NFPA 110 Level I and II (Programmable)
- ☐ Remote Communication - RS232
- ☐ Remote Communication - Modem
- ☐ Remote Communication - Ethernet
- ☐ 10A Run Relay

Std

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Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)

- ☐ Low Fuel
- ☒ Oil Pressure (Pre-programmed Low Pressure Shutdown)
- ☒ Coolant Temperature (Pre-programmed High Temp Shutdown)
- ☒ Coolant Level (Pre-programmed Low Level Shutdown)
- ☐ Oil Temperature
- ☐ Fuel Pressure
- ☒ Engine Speed (Pre-programmed Overspeed Shutdown)
- ☒ Voltage (Pre-programmed Overvoltage Shutdown)
- ☐ Battery Voltage

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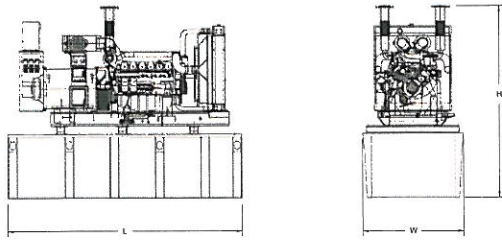
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Other Options

- ☐
- ☐
- ☐

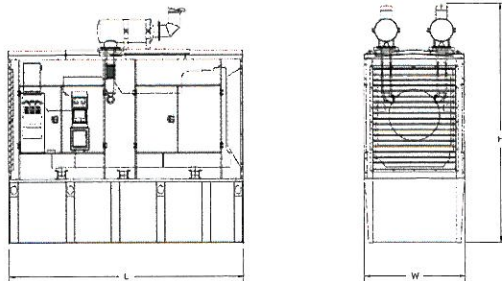
SD500

dimensions, weights and sound levels



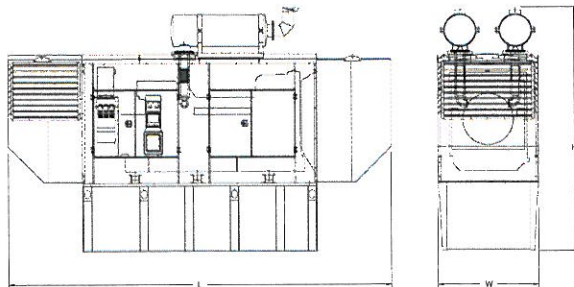
OPEN SET

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dba*
NO TANK	-	138.8	50.8	80.7	9311	91
8	265	151.6	63	97.8	11131	
13	396	151.6	63	103.6	11169	
18	550	151.6	63	109.2	11513	
25	793	185.2	63	112.9	12111	
31	960	185.2	63	120.1	12389	



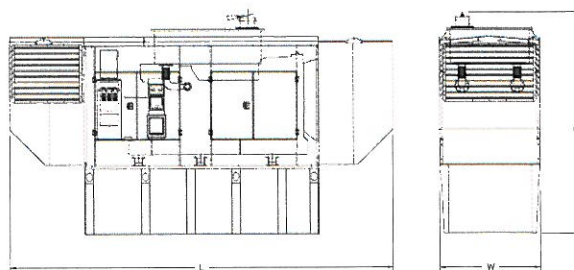
WEATHERPROOF ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dba*
NO TANK	-	151.6	63	118	11599	87
8	265	151.6	63	135.16	13419	
13	396	151.6	63	140.95	13457	
18	550	151.6	63	146.54	13801	
25	793	185.2	63	150.24	14399	
31	960	185.2	63	157.37	14677	



LEVEL 1 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dba*
NO TANK	-	229.2	63	118	11402	83.7
10	313	229.2	63	134	13064	
15	469	229.2	63	139.25	13194	
22	685	151.6	63	146.54	13952	
30	936	185.2	63	147.1	14072	
43	1347	185.2	63	157.37	15172	



LEVEL 2 SOUND ENCLOSURE

RUN TIME HOURS	USABLE CAPACITY (GAL)	L	W	H	WT	dba*
NO TANK	-	269.5	70.9	104.1	14672	75
10	313	269.5	70.9	120.1	16334	
15	469	269.5	70.9	125.35	16464	
22	685	269.5	70.9	132.64	17222	
30	936	269.5	70.9	133.16	17342	
43	1347	269.5	70.9	143.47	18442	

Tank Options

- | | |
|---|----------------------------|
| <input type="radio"/> MDEQ | <input type="radio"/> OPT |
| <input type="radio"/> Florida DERM/DEP | <input type="radio"/> OPT |
| <input type="radio"/> Chicago Fire Code | <input type="radio"/> OPT |
| <input type="radio"/> IFC Certification | <input type="radio"/> CALL |
| <input type="radio"/> ULC | <input type="radio"/> CALL |

Other Custom Options Available from your Generac Industrial Power Dealer

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

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