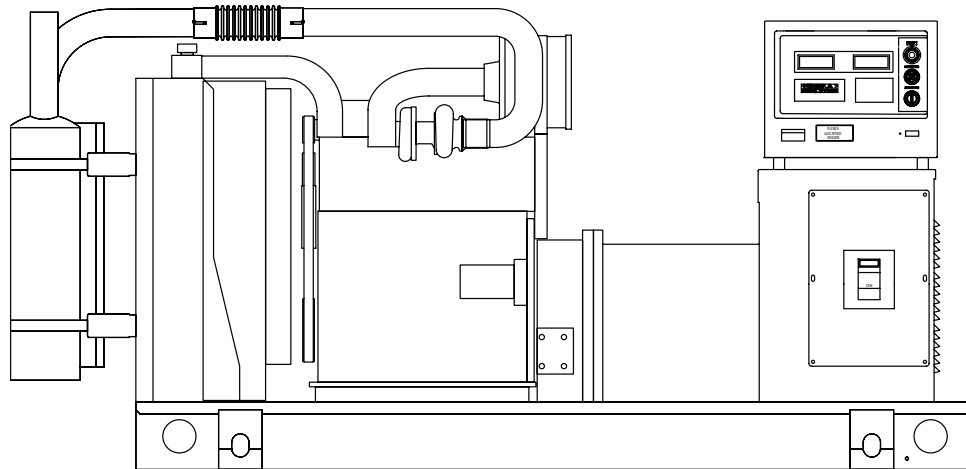


SD020

Liquid Cooled Diesel Engine Generator Sets

Standby Power Rating
20KW 60 Hz / 20KVA 50 Hz

Prime Power Rating
15KW 60 Hz / 15KVA 50Hz



Power Matched
GENERAC 2.4DT ENGINE
Turbocharged

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
 - ✓ PROTOTYPE TESTED
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ ELECTRO-MAGNETIC INTERFERENCE
 - ✓ NEMA MG1 EVALUATION
 - ✓ MOTOR STARTING ABILITY
 - ✓ SHORT CIRCUIT TESTING
 - ✓ UL 2200 COMPLIANCE AVAILABLE
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized
- FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own a GENERAC POWER SYSTEM.
- **ECONOMICAL DIESEL POWER.** Low cost operation due to modern diesel engine technology. Better fuel utilization plus lower cost per gallon provide real savings.
- **LONGER ENGINE LIFE.** GENERAC heavy-duty diesels provide long and reliable operating life.
- **GENERAC TRANSFER SWITCHES, SWITCHGEAR AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, switchgear and controls for total system compatibility.

GENERAC[®]
POWER SYSTEMS, INC.

GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class F
STATOR INSULATION	Class F
TOTAL HARMONIC DISTORTION	<5%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%
LOAD CAPACITY (PRIME)	110%

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

EXCITATION SYSTEM

<input type="checkbox"/> DIRECT	DC excitation system ✓
	Low-velocity brushes and slip rings ✓
<input type="checkbox"/> BRUSHLESS	Magnetically coupled DC current ✓
	Eight-pole exciter w/ battery-driven field boost ✓
	Mounted outboard of main bearing ✓
REGULATION	Solid-state ✓
	±1% regulation ✓

GENERATOR FEATURES

- Four pole, revolving field generator, directly connected to the engine shaft through a heavy-duty, flexible disc for permanent alignment.
- Generator meets the temperature rise standards for class "F" insulation as defined by NEMA MG1-32.6, while the insulation system meets the requirements for the higher class "H" rating.
- All prototype models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- All prototype models are tested for motor starting ability by measuring the instantaneous voltage dip with a waveform data acquisition system.
- All models utilize an advanced wire harness design for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, and T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-32.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and optional main-line circuit breakers capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

ENGINE SPECIFICATIONS

MAKE	DEERE
MODEL	2.4DT
ENGINE FAMILY	7JDXL02.4074
CYLINDERS	4 in-line
DISPLACEMENT	2.4 Liter (149 cu. in.)
BORE	86 mm (3.39 in.)
STROKE	105 mm (4.13 in.)
COMPRESSION RATIO	18:1
INTAKE AIR	Turbocharged
NUMBER OF MAIN BEARINGS	5
CONNECTING RODS	4-Drop forged steel
CYLINDER HEAD	Cast iron w/ overhead valve
PISTONS	4-Aluminum alloy
CRANKSHAFT	Forged Steel

VALVE TRAIN

LIFTER TYPE	Solid
INTAKE VALVE MATERIAL	High Temp
EXHAUST VALVE MATERIAL	High Temp

ENGINE GOVERNOR

<input type="checkbox"/> ELECTRONIC	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD	Isochronous
STEADY STATE REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full flow, cartridge
CRANKCASE CAPACITY	7.5 qts.

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, closed recovery
WATER PUMP	Pre-lubed, self-sealing
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	6
DIAMETER OF FAN	457.2 mm (18.0 in.)
COOLANT HEATER	120V, 1000 W

FUEL SYSTEM

FUEL	#2D Fuel (Min Cetane #40)
	(Fuel should conform to ASTM Spec.)
FUEL FILTER	10 Micron
FUEL INJECTION PUMP	Bosch (VE)
FUEL PUMP	Engine Driven Gear Type
INJECTORS	Pintel Type, 2100 PSI
ENGINE TYPE	Pre-combustion, swirl chamber
FUEL LINE (Supply)	6.35 mm (0.25 in.)
FUEL RETURN LINE	3.17 mm (0.125 in.)

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	42 Amps at 12 V
STARTER MOTOR	12 V 290A @ 0 °C
RECOMMENDED BATTERY	(1) - 12 V, 90 A.H., 27F
GROUND POLARITY	Negative

SD020

OPERATING DATA

	STANDBY				PRIME				
	SD020				SD020				
GENERATOR OUTPUT VOLTAGE/KW-60Hz	<u>Rated kW</u>		<u>Rated AMP</u>		<u>Rated kW</u>		<u>Rated AMP</u>		
120/240V, 1-phase, 1.0 pf	20		83.0		15		62.0		
120/208V, 3-phase, 0.8 pf	20		69.4		15		52.0		
120/240V, 3-phase, 0.8 pf	20		60.0		15		45.0		
277/480V, 3-phase, 0.8 pf	20		30.0		15		23.0		
600V, 3-phase, 0.8 pf	20		24.0		15		18.0		
	NOTE: Consult your Generac dealer for additional voltages.								
GENERATOR OUTPUT VOLTAGE/KVA-50Hz	<u>Rated kVA</u>		<u>Rated AMP</u>		<u>Rated kVA</u>		<u>Rated AMP</u>		
110/220V, 1-phase, 1.0 pf	16		73.0		12		55.0		
115/200V, 3-phase, 0.8 pf	20		57.7		15		43.0		
100/200V, 3-phase, 0.8 pf	20		57.7		15		43.0		
231/400V, 3-phase, 0.8 pf	20		28.9		15		22.0		
480V, 3-phase, 0.8 pf	20		24.1		15		18.0		
	NOTE: Consult your Generac dealer for additional voltages.								
MOTOR STARTING KVA	<u>200/240V</u>		<u>400/480V</u>		<u>200/240V</u>		<u>400/480V</u>		
Maximum at 35% instantaneous voltage dip	41 / 50		47 / 56		41 / 50		47 / 56		
Stand—50/60 Hz									
FUEL									
Fuel consumption—60 Hz	Load	<u>25%</u>	<u>50%</u>	<u>75%</u>	<u>100%</u>	<u>25%</u>	<u>50%</u>	<u>75%</u>	<u>100%</u>
	gal./hr.	0.6	1.1	1.6	2.1	0.5	0.9	1.3	1.7
	liters/hr.	2.3	4.3	6.2	8.0	1.8	3.4	4.9	6.4
Fuel consumption—50 Hz	gal./hr.	0.5	0.9	1.3	1.7	0.4	0.7	1.0	1.3
	liters/hr.	1.8	3.4	4.9	6.4	1.5	2.8	3.9	5.1
Fuel pump lift	meters (in.)	0.9 (36)			0.9 (36)				
COOLING									
Coolant capacity	System - lit. (US gal.)	11.2 (3.0)			11.2 (3.0)				
	Engine - lit. (US gal.)	2.6 (0.7)			2.6 (0.7)				
	Radiator - lit. (US gal.)	8.6 (2.3)			8.6 (2.3)				
Coolant flow/min.	60 Hz - lit. (US gal.)	90.8 (24)			90.8 (24)				
	50 Hz - lit. (US gal.)	75.7 (20)			75.7 (20)				
Heat rejection to coolant	BTU/hr.	81,000			64,000				
Inlet air	60 Hz - m ³ /min. (cfm)	130 (4,600)			130 (4,600)				
	50 Hz - m ³ /min. (cfm)	109 (3,800)			109 (3,800)				
Max. operating air temp onto radiator		60 (140)			60 (140)				
*see note	°C (°F)								
Max. operating ambient temp		50 (122)			50 (122)				
*see note	°C (°F)								
COMBUSTION AIR REQUIREMENTS									
Flow at rated power	60 Hz - m ³ /min. (cfm)	2.2 (78)			1.8 (65)				
	50 Hz - m ³ /min. (cfm)	1.7 (60)			1.4 (50)				
EXHAUST									
Exhaust flow at rated output	60 Hz m ³ /min. (cfm)	5.8 (205)			4.6 (164)				
	50 Hz m ³ /min. (cfm)	4.5 (158)			3.6 (127)				
Max recommended back pressure	Kpa ("Hg)	5.0 (1.5)			5.0 (1.5)				
Exhaust temp at rated output	°C (°F)	510 (950)			496 (925)				
Exhaust outlet size	" N.P.T. (female)	2.5"			2.5"				
ENGINE									
Rated RPM	60 Hz / 50 Hz	1800 / 1500			1800 / 1500				
HP at rated KW	60 Hz / 50 Hz	34.4 / 26.6			28.5 / 22				
Piston speed	60 Hz - m/min. (ft./min.)	377.6 (1239)			377.6 (1239)				
	50 Hz - m/min. (ft./min.)	314.7 (1033)			314.7 (1033)				
BMEP	60 Hz / 50 Hz - psi	103 / 96			86 / 79				
POWER ADJUSTMENTS FOR AMBIENT CONDITIONS									
Temperature									
	5% for every 10°C above - °C	25			25				
	2.77% for every 10°F above - °F	77			77				
Altitude									
	0.8% for every 100 m above - m	183			183				
	-2.7% for every 1000 ft. above - ft.	600			600				

* Note: Values given are maximum temperatures to which power adjustments can be applied. Consult your Generac Power Systems representative if operating conditions exceed these maximums. Altitude and temperature derations are emissions certification contingent by engine manufacturer. Actual power deration may be less than published values.

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Secondary Fuel Filter
- Fuel Lockoff Solenoid

- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation of Unit to Mounting Base
- 12 Volt, Solenoid-activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Coolant Heater
- Radiator Duct Adaptor

OPTIONS

■ OPTIONAL COOLING SYSTEM ACCESSORIES

- 208/240V Coolant Heater

■ OPTIONAL FUEL ACCESSORIES

- Flexible Fuel Lines
- UL Listed Fuel Tanks
- Base Tank Low Fuel Alarm
- Primary Fuel Filters

■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer (Std. on enclosed gensets)

■ OPTIONAL ELECTRICAL ACCESSORIES

- Battery, 12 Volt, 90 A.H., 27F
- 2A Battery Charger
- 10A Dual Rate Battery Charger
- Battery Heater

■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Strip Heater
- Alternator Tropicalization
- Voltage Changeover Switch
- Main Line Circuit Breaker

■ CONTROL CONSOLE OPTIONS

- H-100 Digital Controller
- Modem for H-100

■ ADDITIONAL OPTIONAL EQUIPMENT

- Automatic Transfer Switch
- 3 Light Remote Annunciator
- 5 Light Remote Annunciator
- 20 Light Remote Annunciator
- Road Ready Trailer
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

■ OPTIONAL ENCLOSURE

- Weather Protective
- Sound Attenuating
- Aluminum and Stainless Steel
- Enclosed Muffler

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