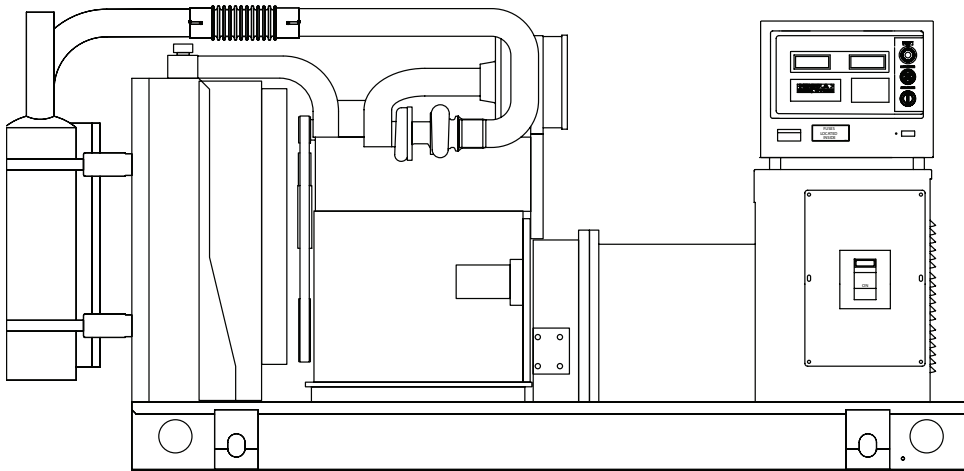


SD020

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
Interim Tier IV Compliant

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 DIGITAL 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®

APPLICATION & ENGINEERING DATA

SD020

GENERATOR SPECIFICATIONS

TYPE	390 mm, Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
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. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

VOLTAGE REGULATOR

TYPE	Full Digital
SENSING	3 Phase
REGULATION	± 1/4%
FEATURES	Built into H-100 Control Panel, V/F Adjustable Adjustable Voltage and Gain

GENERATOR FEATURES

- Revolving field heavy duty generator
- Quiet drive coupling
- Operating temperature rise 120°C above a 40°C ambient
- Insulation is Class H rated at 150°C rise
- All prototype models have passed three phase short circuit testing

CONTROL PANEL FEATURES

- TWO FOUR LINE LCD DISPLAYS READ:
 - Voltage (all phases)
 - Power factor
 - kVAR
 - Engine speed
 - Run hours
 - Fault history
 - Coolant temperature
 - Low oil pressure shutdown
 - Overvoltage
 - Low coolant level
 - Exercise speed
 - Not in auto position (flashing light)
 - Current (all phases)
 - kW
 - Transfer switch status
 - Low fuel pressure
 - Service reminders
 - Oil pressure
 - Time and date
 - High coolant temp shutdown
 - Overspeed
 - Low coolant level
 - ATS selection
- INTERNAL FUNCTIONS:
 - I²T function for alternator protection from line to neutral and line to line short circuits
 - Emergency stop
 - Programmable auto crank function
 - 2 wire start for any transfer switch
 - Communicates with the Generac HTS transfer switch
 - Built-in 7 day exerciser
 - Adjustable engine speed at exerciser
 - RS232 port for GenLink[®] control
 - RS485 port remote communication
 - Canbus addressable
 - Governor controller and voltage regulator are built into the master control board
 - Temperature range -40°C to 70°C

ENGINE SPECIFICATIONS

MAKE	DEERE
MODEL	See Exhaust Emission Sheet
ENGINE FAMILY	First digit is Cert. Yr. (i.e. 7, 8, 9) _JDXL02.4074
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	Isocronous
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 120/240V, 1-phase, 1.0 pf 120/208V, 3-phase, 0.8 pf 120/240V, 3-phase, 0.8 pf 277/480V, 3-phase, 0.8 pf 600V, 3-phase, 0.8 pf		<u>Rated kW</u>		<u>Rated AMP</u>		<u>Rated kW</u>		<u>Rated AMP</u>	
		20		83.0		15		62.0	
	NOTE: Consult your Generac dealer for additional voltages.	20		69.4		15		52.0	
		20		60.0		15		45.0	
		20		30.0		15		23.0	
	20		24.0		15		18.0		
GENERATOR OUTPUT VOLTAGE/KVA-50Hz 110/220V, 1-phase, 1.0 pf 115/200V, 3-phase, 0.8 pf 100/200V, 3-phase, 0.8 pf 231/400V, 3-phase, 0.8 pf		<u>Rated kVA</u>		<u>Rated AMP</u>		<u>Rated kVA</u>		<u>Rated AMP</u>	
		16		73.0		12		55.0	
	NOTE: Consult your Generac dealer for additional voltages.	20		57.7		15		43.0	
		20		57.7		15		43.0	
		20		28.9		15		22.0	
MOTOR STARTING KVA Maximum at 35% instantaneous voltage dip Stand—50/60 Hz		<u>200/240V</u>		<u>400/480V</u>		<u>200/240V</u>		<u>400/480V</u>	
		32 / 38		42 / 50		32 / 38		42 / 50	
FUEL Fuel consumption—60 Hz Fuel consumption—50 Hz Fuel pump lift	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.	0.45	0.88	1.28	1.67	0.36	0.7	1.03	1.33
	liters/hr.	1.7	3.32	4.85	6.30	1.36	2.65	3.88	5.04
	gal./hr.	0.36	0.7	1.03	1.33	0.29	0.56	0.82	1.07
	liters/hr.	1.36	2.65	3.88	5.04	1.09	2.12	3.11	4.04
meters (in.)	0.9 (36)				0.9 (36)				
COOLING Coolant capacity Coolant flow/min. Heat rejection to coolant Inlet air Max. operating air temp onto radiator *see note Max. operating ambient temp *see note	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)			
	60 Hz - lit. (US gal.)	90.8 (24)				90.8 (24)			
	50 Hz - lit. (US gal.)	75.7 (20)				75.7 (20)			
	BTU/hr.	81,000				64,000			
	60 Hz - m ³ /min. (cfm)	130 (4,600)				130 (4,600)			
	50 Hz - m ³ /min. (cfm)	109 (3,800)				109 (3,800)			
	°C (°F)	60 (140)				60 (140)			
	°C (°F)	50 (122)				50 (122)			
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 Max recommended back pressure Exhaust temp at rated output Exhaust outlet size	60 Hz m ³ /min. (cfm)	5.8 (205)				4.6 (164)			
	50 Hz m ³ /min. (cfm)	4.5 (158)				3.6 (127)			
	Kpa ("Hg)	5.0 (1.5)				5.0 (1.5)			
	°C (°F)	510 (950)				496 (925)			
	" N.P.T. (female)	2.5"				2.5"			
ENGINE Rated RPM HP at rated KW Piston speed BMEP	60 Hz / 50 Hz	1800 / 1500				1800 / 1500			
	60 Hz / 50 Hz	34.4 / 26.6				28.5 / 22			
	60 Hz - m/min. (ft./min.)	377.6 (1239)				377.6 (1239)			
	50 Hz - m/min. (ft./min.)	314.7 (1033)				314.7 (1033)			
	60 Hz / 50 Hz - psi	103 / 96				86 / 79			
POWER ADJUSTMENTS FOR AMBIENT CONDITIONS Temperature Altitude	5% for every 10°C above - °C	25				25			
	2.77% for every 10°F above - °F	77				77			
	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
- Coolant Heater

- 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
- Radiator Duct Adaptor
- Isochronous Governor

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

■ OPTIONAL ELECTRICAL ACCESSORIES

- 2A Battery Charger
- 10A Dual Rate Battery Charger
- Battery, 12 Volt, 135 A.H.

■ OPTIONAL ALTERNATOR ACCESSORIES

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

■ CONTROL CONSOLE OPTIONS

- Digital Controller H100 (Bulletin 0172110SBY)

■ ADDITIONAL OPTIONAL EQUIPMENT

- Automatic Transfer Switch (HTS or GTS)
- 20 Light Remote Annunciator
- Remote Relay Panels
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

■ OPTIONAL ENCLOSURE

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

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