



Shown with optional equipment

Features

- Single source responsibility for the generator set and accessories.
- Prototype and production tested to insure one step load acceptance per NFPA 110.
- Two year limited warranty on generator sets and accessories.
- Unit conforms to CSA, NEMA, EGSA, ANSI and other standards.
- Heavy duty 4 cycle industrial engine for reliability and fuel efficiency.
- Brushless rotating field generator with class H insulation.
- Heavy duty steel base with integral vibration isolators.
- Electronic Isochronous Governor.
- EPA Tier 4 interim Certified Engine.

Ratings Range

	60Hz
Standby:	kW 28-30.5 kVA 35-38.1
Prime:	kW 26.4-27.4 kVA 33-34.2

Generator	Voltage	PH	Hz	Standby Rating		Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
BCI184F	277/480	3	60	30.5/38.1	46	27.4/34.2	41
	139/240	3	60	30.5/38.1	91	27.4/34.2	82
	127/220	3	60	30.3/37.8	99	27.2/34	89
	120/208	3	60	28/35	97	26.4/33	91
	120/240	3	60	28/35	84	26.4/33	79
	120/240	1	60	21.5/21.5	90	21.5/21.5	90
BCI184H06	120/240	1	60	28.5/28.5	119	25.5	106

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor.
 STANDBY RATINGS: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271.
 PRIME POWER RATINGS: Prime power ratings apply to installations where utility power in unavailable or unreliable. At varying load the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. For limited running time and base load ratings consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.
 GENERAL GUIDELINES FOR DERATION: Altitude: Derate 0.5% per 100m (328 ft.) elevation above 1000m (3279 ft.)

Perkins Diesel Engine

Model 404D-22TG

Basic technical data

Number of cylinders	4
Cylinder arrangement	Vertical in-line
Cycle	Four stroke
Induction system	Turbocharged
Compression ratio	23.3:1
Bore	3.3 in. (84 mm)
Stroke	3.9 in. (100 mm)
Cubic capacity	135.2 cu in. (2.216 L)
Direction of rotation	Anti-clockwise when viewed from flywheel
Firing order	1,3,4,2

Cooling system

Radiator

Face area	465 in ² (0.3 m ²)
Number of rows and material	1, Aluminum
Matrix density and material	54 tubes row, aluminum
Width of matrix	22.4 in. (570 mm)
Height of matrix	20.6 in. (524.2 mm)
Pressure cap setting	15.9 psi (110 kPa)

Fan

diameter	18 in. (457.2 mm)
Drive ratio	1.1:1
Number of blades	7
Material	Plastic
Type	Pusher

Coolant

Total system capacity	
With radiator	2.46 gal (9.32 L)
Without radiator	.95 gal (3.6 L)
Maximum top tank temperature	233° F (112° C)
Temperature rise across engine	45.5° F (7.5° C)
Thermostat operation range	180-203° F (82-95° C)
Recommended coolant:	50% anti freeze / 50% water.

Exhaust system

Maximum back pressure	1.5 psi (10.2 kPa)
Exhaust outlet size	1.65 in. (42 mm)

Fuel system

Type of injection	Indirect
Fuel injection pump	Cassette type
Fuel injector	Pintle nozzle
Nozzle opening pressure	2132 psi (14.7 MPa)
Max. Particle size	25 microns

Fuel lift pump

-type	mechanical (camshaft driven)
-flow/hour	16.6 gal/hr (63 l/hr)
-pressure	1.5 psi (10 kPa)
Maximum suction head	0.8 m
Maximum static pressure head	3.0 m
Governor type	Electronic/Mechanical

Fuel Consumption gal/hr (L/hr.)

Power Rating				
Speed	110%	100%	75%	50%
60Hz	2.4 (9.3)	2.2 (8.3)	1.6 (6.1)	1.1 (4.3)

Lubrication system

Maximum sump capacity	2.8 gal (10.6 L)
Minimum sump capacity	2.3 gal (8.9 L)
Maximum engine operating angles	
Front up, front down, right side or left side	35° continuous

Lubricating oil pressure

Relief valve opens	51-64.9 psi (352—448 kPa)
Oil Press. @ maximum no-load speed	21.3 psi (147 kPa)
Min. oil pressure	17.4 psi (120 kPa)
Normal oil temperature	257° F (125° C)
Oil flow at rated speed	4 gal/min (15.2 l/min)

Electrical system

Type	12 volt negative earth
Alternator voltage	12V
Alternator output	65A
Starter motor type	Delco Remy
Starter motor voltage	12V
Number of teeth on flywheel	126
Number of teeth on starter pinion	9

Induction system

Maximum air intake restriction

Clean filter	.43 psi (3 kPa)
dirty filter	.92 psi (6.4 kPa)
Air filter type	Dry element type

Duct allowance

Max. additional restriction to cooling airflow and resultant minimum airflow		
Ambient clearance 50% Glycol	Duct allowance	Cfm (m ³ /sec)
149.0°F (65°C)	(0)	81.2 (2.3)
134.6°F (57°C)	.018 psi (125 Pa)	60.0 (1.7)

Designation	Units	Prime	Standby
		60 Hz	
Gross engine power	hp (kWb)	40.6 (30.3)	44.6 (33.3)
Brake mean effective pressure	psi (kPa)	132.2 (911.8)	145.3 (1002.1)
Mean piston speed	ft/sec. (m/s)	19.7 (6)	19.7 (6)
Engine coolant flow (coolant pump ratio 1.1:1)	gal/min (L/min)	14.8 (56.2)	14.8 (56.2)
Combustion air flow (at rated speed)	cfm (m ³ /min)	87.9 (2.49)	87.9 (2.49)
Exhaust gas flow (max.)	cfm (m ³ /min)	15891 (450)	15891 (450)
Exhaust gas temperature (max.)	°F (°C)	986 (530)	986 (530)
Overall thermal efficiency (net)	%	32.7	32.7

Generator Controller Options



Digital Control Panel

The DGC-2020 digital genset controller provides integrated engine-genset control, protection, and metering. Microprocessor based technology allows for exact measurement, setpoint adjustment, and timing functions. Front panel 3 position controls and indicators enable quick and simple operation. The panel is also equipped with a emergency stop push button and an Alarm Horn with silence button. A wide temperature-range liquid crystal display (LCD) with backlighting can be viewed under a wide range of ambient light and temperature conditions down to 40° C.

It also features Modbus Communications with RS-485, Battery Backup for Real Time Clock, UL recognized, CSA certified, CE approved, HALT (Highly Accelerated Life Tests) tested, IP 54 Front Panel rating with integrated gasket, and NFPA 110 Level 1 Compatible.

Features SAE J1939 Engine ECU communications, Multilingual capability, Remote RS-485 communications for Optional RDP-110 Remote Annunciator, Extremely rugged, fully encapsulated design with 4 programmable contact inputs and 10 contact outputs (2 A/c rated).



Analog Top Mount Controller

This Generator control panel has analog instruments to monitor AC voltage, AC frequency, percent of load and, run time/hour meter. Safety shutdowns provide red LED indication for overspeed, overcrank, low oil pressure, and high coolant temperature. Provide green LED indication of engine running. Control switch is provided for local and remote starting with 3 position run/off/remote switch.

There is also an engine mounted emergency by-pass key switch with mechanical oil pressure and coolant temperature gauge.



Analog End Mount Controller

This Generator control panel has analog instruments to monitor AC voltage, AC frequency, and percent of load. The analog engine instruments monitor oil pressure, water temperature, battery voltage, fuel level, and run time/hour meter. Safety shutdowns provide red LED indication for overspeed, overcrank, low oil pressure, and high coolant temperature. Provide green LED indication of engine running. Control switch is provided for local and remote starting with 3 position run/off/remote switch.

There is also an engine mounted emergency by-pass key switch.



Dyna Gen Controller

The DYNA-GEN GSC300 Digital Genset Controller provides control and protection in the operation of the generator set. The controller allows starting and stopping of the engine and indicates status and fault conditions. Unit Safety Shutdowns and Alarms are High Water Temperature, Low Oil Pressure, Overcrank, Overspeed, Low Battery Voltage Alarm, and Unit Not In Auto Alarm.

It controls automatic start/stop of the unit as well as pre-heating of the engine.

The Back Lit Digital Display provides monitoring of the Battery Voltage, Hour Meter, Frequency, and Fuel Level.

The panel is also equipped with analog voltmeter and percent of load meter.

AC Alternator Specifications

STANDARDS

Stamford industrial generators meet the requirements of BS EN 60034 and the relevant section of other international standards such as B55000, VDE 0530, NEMA MG1-32, 1EC34, CSA C22.2-100, A51359.

Other standards and certifications can be considered on request.

VOLTAGE REGULATORS

SX460 AVR

With this self excited control system the main stator supplies power via the Automatic Voltage Regulator (AVR) to the exciter stator. The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier. This rectifier is protected by a surge suppressor against surges caused, for example, by short circuit.

(Optional) AS440 AVR

With this self-excited system the main stator provides power via the AVR to the exciter stator. The high efficiency semi-conductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three-phase full-wave bridge rectifier. The rectifier is protected by a surge suppressor against surges caused, for example, by short circuit or out-of-phase paralleling.

The AS440 will support a range of electronic accessories, including a droop Current Transformer (CT) to permit parallel operation with other ac generators.

WINDINGS & ELECTRICAL PERFORMANCE

All generator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A frilly connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

SHAFT

The generator rotor is dynamically balanced to better than B56861:Part 1 Grade 2.5 for minimum vibration in operation.

INSULATION/IMPREGNATION

The insulation system is class H.

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.

Standard Features and Optional Accessories

Standard Features

- **Heavy duty steel base**
- **Vibration isolators**
- **Oil drain valve with extension**
- **Battery rack**
- **Battery cables**
- **Water jacket heater**
- **Owners manual**
- **Electronic Isochronous Governor**

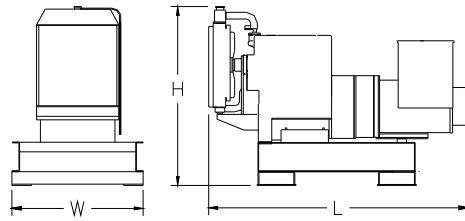
Optional Accessories

- Critical Exhaust Silencer
- Flex Exhaust Connector
- Top Mount Analog Control Panel
- End Mount Analog Control Panel
- DGC2020 Digital Control Panel
- Modem for DGC2020
- Enhanced Gen Protection for DGC2020
- Surface Mount Remote Annunciator Panel for DGC2020
- Flush Mount Remote Annunciator Panel for DGC2020
- Remote Mount Break Glass E-Stop Switch
- Line Circuit Breaker
- 3 phase sensing
- Generator strip heater
- Radiator duct flange for open unit
- Weather Enclosure with external muffler
- Weather Enclosure with internal muffler
- Sound Attenuated weather enclosure
- Oil Pan Heater
- Battery
- Battery Charger
- Battery Heaters
- Sub-Base Fuel Tank
- Flexible Fuel Lines

WEIGHTS AND DIMENSIONS

OVERALL SIZE, L x W x H, in.: 70 in. x 36 in. x 44 in.
WEIGHT (WET): 1,064 lbs.

Note: Dim and weights reflect standard open unit with no options



Note: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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