you can depend on TAYLOR POWER SYSTEMS

Model: TG200

Shown with optional equipment

Ratings Range

		60 Hz
Standby:	kW	130-200
	kVA	163-250
Prime:	kW	115-176
	kVA	144-220

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 Certified Engine.

Generator Set Ratings

			Rich-Burn Natural Gas				Rich-Burn LP Gas			
			130°C Rise Standby Rating		105°C Rise Prime Rating		130°C Rise Standby Rating		105°C Rise Prime Rating	
Voltage	Ph	Hz	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
120/208	3	60	200/250	694	174/218	604	130/163	451	115/144	399
127/220	3	60	200/250	656	175/219	574	130/163	426	115/144	377
120/240	3	60	200/250	601	174/218	523	130/163	391	115/144	346
139/240	3	60	200/250	601	176/220	529	130/163	391	115/144	346
220/380	3	60	200/250	380	174/218	330	130/163	247	115/144	218
240/416	3	60	200/250	347	174/218	302	130/163	226	115/144	200
277/480	3	60	200/250	301	176/220	265	130/163	195	115/144	173
347/600	3	60	200/250	241	176/220	212	130/163	156	115/144	138

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.)

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Doosan	
Engine model	D111TIC	
Engine type	11.1 L, 4-Cycle, Turbocharged, Aftercooled	
Cylinder arrangement	6, Inline	
Displacement, L (cu. in.)	11.05 (674)	
Bore and stroke, mm (in.)	123 x 155 (4.84 x 6.10)	
Compression ratio	10.5:1	
Piston speed, m/min. (ft./min.)	558 (1831)	465 (1525)
Main bearings: quantity, type	7, Precision Half-Shell	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	225 (302)	195 (261)
Cylinder head material	Cast Iron	
Piston: type, material	—	
Crankshaft material	Forged Steel	
Valve material	—	
Governor: type, make/model	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.5%	
Frequency	Fixed	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Wet	
Exhaust flow at rated kW, m^3/min. (cfm)	848 (420)	707 (350)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	677 (1250)	
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	24	
Ampere rating	45	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Qty., CCA rating each	Two, 1000	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply line inlet	2.0 NPTF	
Natural gas/LPG fuel supply pressure, measured at the generator set fuel inlet downstream of any fuel system equipment accessories kPa, in. H_2O)	1.74–2.74 (7.0–11.0)	

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C_4 and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, kJ/m^3 (Btu/ft^3), min.	26.6 (890)	67.5 (2260)

* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

Application Data

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	25 (26.4)	
Oil pan capacity with filter, L (qt.)	27 (28.8)	
Oil filter: quantity, type	1, Cartridge	
Oil cooler	Water-Cooled	

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
Engine jacket water capacity, L (gal.)	21 (5.5)	
Radiator system capacity, including engine, L (gal.)	116 (30.6)	
Engine jacket water flow, Lpm (gpm)	284 (75)	237 (63)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	142 (8100)	118 (6700)
Heat rejected to air charge cooler at rated kW, dry exhaust, kW (Btu/min.)	26.3 (1500)	25.4 (1450)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	965 (38)	
Fan, kWm (HP)	13.4 (18)	7.8 (10)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	

Fuel Consumption ‡	60 Hz	50 Hz
Natural Gas, m^3/hr. (cfh) at % load	**Standby Rating**	
100%	59.9(2115)	53.5(1889)
75%	46.7(1649)	40.9(1444)
50%	32.8(1158)	28.2 (996)
25%	20.0 (706)	17.1 (604)
Natural Gas, m^3/hr. (cfh) at % load	**Prime Rating**	
100%	53.6(1893)	48.3(1706)
75%	41.7(1473)	37.0(1307)
50%	29.7(1049)	25.9 (915)
25%	17.6 (622)	15.3 (540)
LP Gas, m^3/hr. (cfh) at % load	**Standby Rating**	
100%	19.9 (703)	16.8 (593)
75%	17.0 (600)	13.1 (462)
50%	11.5 (406)	9.7 (343)
25%	7.2 (254)	6.0 (212)
LP Gas, m^3/hr. (cfh) at % load	**Prime Rating**	
100%	18.6 (657)	15.3 (540)
75%	15.1 (533)	12.0 (424)
50%	10.5 (371)	8.9 (314)
25%	6.4 (226)	5.4 (191)

‡ Fuel consumption is based on 1015 Btu/standard cu. ft. natural gas.

11.1L

	Units		11.1L			
	Std	Metric	1500		1800	
General Engine Data						
Type	N/A		In-Line 4 cycle			
Number of cylinders	N/A		6			
Aspiration	N/A		Turbo Charge Air Cooled			
Bore	in	mm	4.84	123	4.84	123
Stroke	in	mm	6.1	155	6.1	155
Displacement	in^3	L	673	11.0505	673	11.0505
Compression Ratio	N/A		10.5			
Mean Piston Speed	ft/min	m/s	1525	7.75	1830	9.3
Gross Power Rating, Per ISO 3046 at the Flywheel						
NG	Hp	kW	268	200	302	225
LP	Hp	kW	178	133	208	155
MEP (@ rated Load on NG)	psi	kPa	210	14	197	14
Rotation Viewed from Flywheel	N/A		Counter Clockwise			
Firing Order	N/A		1-5-3-6-2-4			
Dry Weight						
Fan to Flywheel	lb	kg	2600	1179.33	2600	1179.33
Rad to Flywheel	lb	kg	3125	1417	3125	1417
Wet Weight						
Fan to Flywheel	lb	kg	2694.65	1206.14	2694.65	2626.81
Rad to Flywheel	lb	kg	3464.54	1577.36	3464.54	1577.36
CG						
Distance from FW housing	in	mm	23.82	605	23.82	605
Distance above center of crankshaft	in	mm	6.30	160	6.30	160
Engine Mounting						
Maximum Allowable Bending Moment at Rear of Block	lb ft	N m				
Moment of Inertia About Roll Axis	lb ft^2	kg m^2				
Flywheel housing	N/A		SAE No.1			
Flywheel	N/A		No. 14			
Exhaust System						
Type						
Maximum allowable Back pressure	in HG	kPa	3	10.2	3	10.2
Standard Catalyst Back pressure	in HG	kPa	1.5	5.1	1.5	5.1
Exhaust Outlet Pipe Size						
Maximum Turbine Inlet Temperature	F	C	1382	750	1382	750
Exhuast Flow at Rated Power	lb/hr	kg/hr	1658.41	752	1873.91	850
Exhuast Flow at Rated Power @1350F	cfm	m^3/min	1261.13	35.7	1425	40.3
Air Induction System						
Maximum allowable Intake Air Restriction with Air Cleaner						
Clean	inH2O	kPa	5	1.24	5	1.24
Dirty	inH2O	kPa	15	3.74	15	3.74
Combustion Air required	lb/hr	kg/hr	1560.86	708	1763.68	800
Combustion Air required	cfm	m^3/min	354	10.4	400	11.7
Minimum Dirt Holding Capacity of Air Cleaner						
Electrical System						
Minimum Recommended Battery Capacity	AH		150			
Cold Cranking Current						
Engine only	CCA		900			
Engine with Drive train	CCA		900			
Maximum Allowable Resistance of Starting Circuit	Ohms		0.002			
Staring Motor Power	HP	kW	9.4	7	9.4	7
Battery Charging Alternator						
Voltage	Volts		24			
Current	Amps		45			
Cooling System						
Coolant Capacity						
Engine only	gal	L	5.5	25.003	5.5	25.003
Engine with Radiator	gal	L	32.8	149.109	32.8	149.109
Engine Coolant Flow	gal/min	L/min	69	260	82	310
Water Pump Speed	RPM		1862		2235	
Heat rejected to Cooling water at rated Load	btu/min	kcal/sec	9285.12	39	11070.7	46.5
Maximum Intake Air Temperature (IAT)	F	C	155	68	155	68

11.1L

	Units		11.1L			
	Std	Metric	1500		1800	
ECU IAT Warning	F	C	155	69	155	69
ECU IAT Shutdown	F	C	165	75	165	75
Maximum Coolant Friction Head External to the engine	psi	bar	5.8	0.4	5.8	0.4
Maximum Air Restriction Across a Radiator	inH2O	mmH2O	0.5	12.8	0.5	12.8
Standard Thermostat Range						
Cracking Temperature	F	C	160	71	160	71
Full Open Temperature	F	C	185	85	185	85
Maximum Output Pressure of Engine Water Pump						
Maximum Allowable Pressure Cap	psi	bar	14.7	1	14.7	1
Ambient Clearance Open Genset (water)						
Specified	F	C	122	50	122	50
Acutal	F	C				
Ambient Clearance (Oil)						
Specified	F	C	122	50	122	50
Acutal	F	C				
Maximum Allowable Top Tank Temperature	F	C	230	110	230	110
ECU Warning	F	C	220	104	220	104
ECU Shutdown	F	C	230	110	230	110
Fan Power	HP	kW	8	6.0	14	10.4
Fan Diameter, including blades	in	mm	38	965.2	38	965.2
Fan Speed	RPM		1500		1800	
Cooling Fan Air Flow @ 1" Static H2O Pressure and 125F @ radiator	CFM	m^3/min	19114.3	541.24	22300	631.4
Charge Air Cooler						
Compressor Outlet Temperature	F	C	235	114	255	125
Compressor Flow Rate	CFM	m^3/min			555	15.7
Lubrication System						
Oil Specification			SAE 15W-40 Low Ash Gas engine oil (.25-.5% by wt), API CD/CF or higher			
Oil Pressure						
Idle						
Min	Psi	Bar	11	0.8	11	0.8
Max	Psi	Bar	20.3	1.4	20.3	1.4
Rated Speed						
Min	Psi	Bar	20.3	1.4	20.3	1.4
Max	Psi	Bar	70	4.8	70	4.8
Maximum Allowable Oil Temperature	F	C	230	110	230	110
Engine Oil Capacity						
Min	Qts	L	20	18.9	20	18.9
Max	Qts	L	26.5	25.1	26.5	25.1
Oil Filter Capacity	Qts	L	3.75	3.5	3.75	3.5
Fuel System						
Low Pressure Dry Processed Natural Gas (Spec)						
Fuel Composition						
Maximum EPR Rated Pressure	psi	kPa	1	6.89	1	6.89
Maximum Running pressure to Electronic Pressure Regulator (EPR)	inH2O	kPa	11	2.74	11	2.74
Minimum Running pressure to EPR	inH2O	kPa	7	1.74	7	1.74
Minimum Gas Supply Pipe Size			2" NPT			
Low Pressure Vapor Propane (HD5)						
Fuel Composition						
Maximum EPR Rated Pressure	psi	kPa	1	6.89	1	6.89
Maximum Running Pressure to EPR	inH2O	kPa	11	2.74	11	2.74
Minimum Running Pressure to EPR	inH2O	kPa	7	1.74	7	1.74
Minimum LPG Supply Pipe Size			2" NPT			

The preceeding pipe sizes are only suggestions and piping sizes may vary with temperature, pressure, distance from supply and application of local codes. Gas must be available at adequate volume and pressure for engine at the EPR.

NGE 11.1L Fuel Consumption Data

NG 60 Hz				
Power at Flywheel	kg/hr	m3/hr	ft3/hr	BTU/hr
226.70	47.94	59.92	2115.15	2136297
171.28	37.36	46.70	1648.36	1664848
112.93	26.22	32.77	1156.88	1168451
57.77	15.98	19.98	705.18	712236
7.38	6.69	8.36	295.25	298202

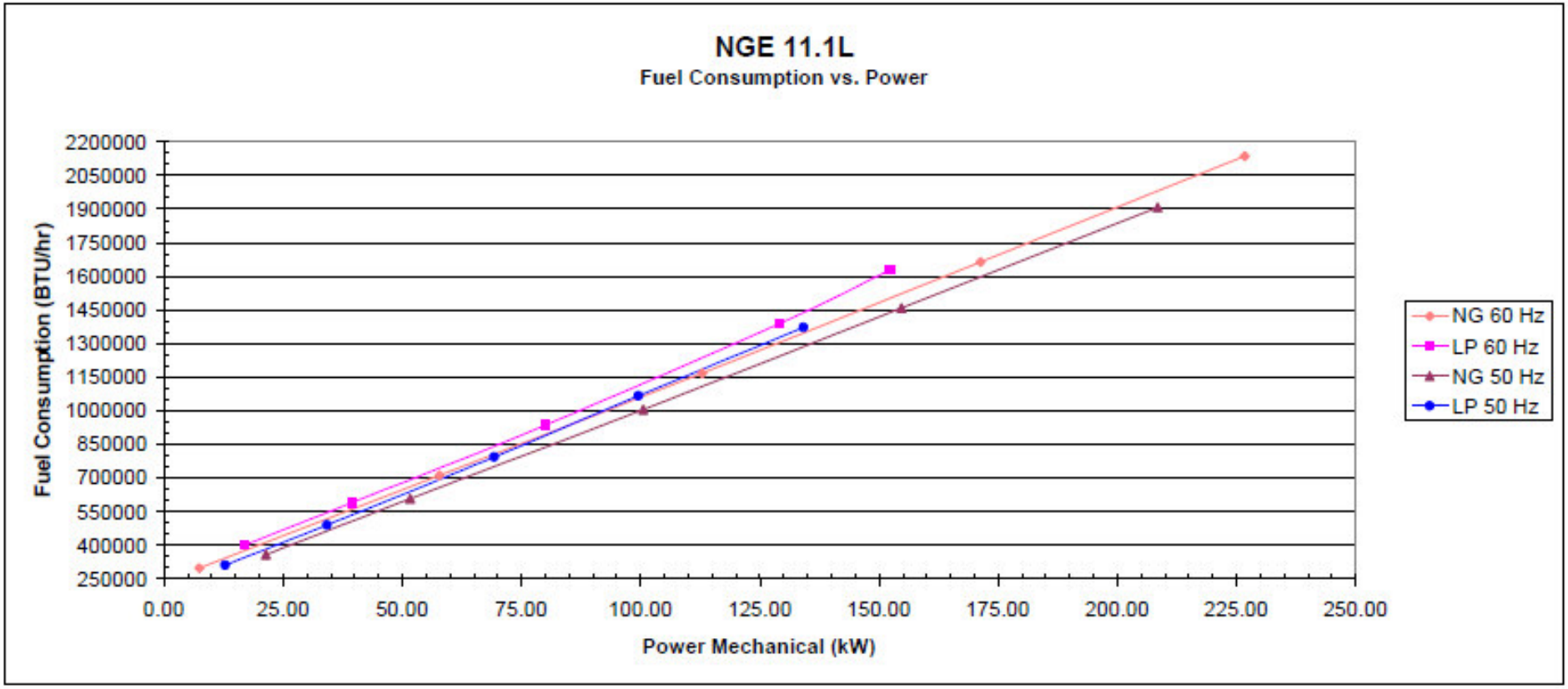
NG 50 Hz				
Power at Flywheel	kg/hr	m3/hr	ft3/hr	BTU/hr
208.44	42.82	53.53	1889.50	1908394
154.66	32.75	40.93	1444.97	1459420
100.53	22.56	28.20	995.43	1005388
51.61	13.66	17.07	602.58	608610
21.34	8.03	10.04	354.47	358015

Gas Properties		
	kg/m3	BTU/ ft3
LP Density	1.882	2316
NG Density	0.8	1010

LP 60 Hz				
Power at Flywheel	kg/hr	m3/hr	ft3/hr	BTU/hr
152.32	37.52	19.94	703.78	1629944
129.15	31.99	17.00	600.11	1389849
80.00	21.56	11.46	404.44	936685
39.45	13.59	7.22	254.98	590543
16.91	9.25	4.92	173.51	401860

LP 50 Hz				
Power at Flywheel	kg/hr	m3/hr	ft3/hr	BTU/hr
134.12	31.60	16.79	592.79	1372904
99.55	24.58	13.06	460.98	1067631
69.24	18.28	9.71	342.85	794042
34.20	11.30	6.00	211.94	490857
12.85	7.16	3.81	134.38	311225

Power Ratings at Flywheel			
	Continuous	Prime	Stand-By
	kW	kW	kW
NG 50 Hz		175	195
NG 60 Hz		200	225
LP 50 Hz			133
LP 60 Hz			153



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 104° F (40° C).

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 Adc rated).

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 110Level 1 Compatible.

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.

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

MX341 AVR

This sophisticated AVR is incorporated into the Stamford Permanent Magnet Generator (PMG) control system.

The PMG provides power via the AVR to the main exciter, giving a source of constant excitation power independent of generator output. The main exciter output is then fed to the main rotor, through a full wave bridge, protected by a surge suppressor. The AVR has in-built protection against sustained over-excitation, caused by internal or external faults. This de-excites the machine after a minimum of 5 seconds.

An engine relief load acceptance feature can enable full load to be applied to the generator in a single step.

If three-phase sensing is required with the PMG system the MX321 AVR must be used.

We recommend three-phase sensing for applications with greatly unbalanced or highly non-linear loads.

(Optional) MX321 AVR

The most sophisticated of all our AVRs combines all the features of the MX341 with, additionally, three-phase rms sensing, for improved regulation and performance. Over voltage protection is built-in and short circuit current level adjustments is an optional facility.

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

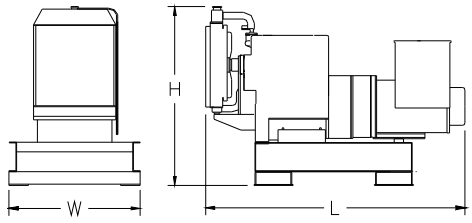
- **Heavy duty steel base**
- **Vibration isolators**
- **Oil drain valve with extension**
- **Battery rack**
- **Battery cables**
- **Water jacket heater**
- **Owners manual**
- **Electronic Isochronous Governor**

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 internal muffler
- ☐ Sound Attenuated weather enclosure
- ☐ Oil Pan Heater
- ☐ Battery
- ☐ Battery Charger
- ☐ Battery Heaters
- ☐ Flexible Fuel Lines

WEIGHTS AND DIMENSIONS

OVERALL SIZE, L x W x H, in.: 122 in. x 66 in. x 80 in.
WEIGHT (WET): 5,900 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.

DISTRIBUTED BY:

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