you can depend on TAYLOR POWER SYSTEMS

Model: TG150

Shown with optional equipment

Ratings Range

		60 Hz	50 Hz
Standby:	kW	100-150	90-125
	kVA	100-187.5	90-156

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.
- EPA Certified Engine.

Generator Set Ratings

			Natural Gas 130°C Rise Standby Rating	
Voltage	Ph	Hz	kW/kVA	Amps
120/208	3	60	150/187.5	520
127/220	3	60	150/187.5	492
120/240	3	60	150/187.5	451
120/240	1	60	100/100	417
139/240	3	60	150/187.5	451
220/380	3	60	145/181.3	275
277/480	3	60	150/187.5	226
347/600	3	60	150/187.5	180
110/190	3	50	125/156	474
115/200	3	50	125/156	450
120/208	3	50	125/156	433
110/220	1	50	90/90	409
110/220	3	50	125/156	409
220/380	3	50	125/156	237
230/400	3	50	125/156	225
240/416	3	50	125/156	217

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	General Motors	
Engine: model, type	Industrial Powertrain, Vortec 8.1 L, 4-Cycle, Turbocharged	
Cylinder arrangement	V-8	
Displacement, L (cu. in.)	8.1 (496)	
Bore and stroke, mm (in.)	108 x 111 (4.25 x 4.37)	
Compression ratio	9.1:1	
Piston speed, m/min. (ft./min.)	399 (1311)	332 (1092)
Main bearings: quantity, type	Alum. Lead Silicon Alloy	
Rated rpm	1800	1500
Max. power at rated rpm, kW (HP)	146 (195)	118 (158)
Cylinder head material	Cast Iron	
Piston type and material	Strutless Flat Top, Hypereutectic Cast Alum.	
Crankshaft material	Cast Nodular Undercut Rolled Fillet	
Valve (exhaust) material	Int.-A193 Exh. Inconel	
Governor type	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	Dry	
Exhaust flow at rated kW, m^3/min. (cfm)	26.1 (920)	18.7 (660)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	649 (1200)	
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)	
Exhaust outlet size at engine hookup, mm (in.)	Flanged Outlet at Catalyst see ADV drawing	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	8.0 (8.5)	
Oil pan capacity with filter, L (qt.)	8.5 (9.0)	
Oil filter: quantity, type	1, Cartridge	

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
Engine jacket water capacity, L (gal.)	10.0 (2.6)	
Radiator system capacity, including engine, L (gal.)	24.2 (6.4)	
Engine jacket water flow, Lpm (gpm)	125 (33)	102 (27)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	110 (6260)	72 (4100)
Heat rejected to engine oil at rated kW, kW (Btu/min.)	1.4 (81)	1.2 (68)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	599 (23.6)	
Fan, kWm (HP)	10.4 (14.0)	6.0 (8.1)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)	

* Weather housing with roof-mounted silencer and enclosure with enclosed silencer reduce ambient temperature capability by 10°C (18°F).

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm)‡	306 (10800)	232 (8200)
Combustion air, m^3/min. (cfm)	8.8 (312)	6.2 (220)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	72.0 (4100)	44.1 (2510)
Alternator, kW (Btu/min.)	13.7 (780)	9.8 (560)

† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Individual Coil Near Plug Ignition	
Battery charging alternator:		
Ground (negative/positive)	Negative	
Volts (DC)	12	
Ampere rating	70	
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Qty., rating for -18°C (0°F)	One, 630	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas, Natural Gas, or Dual Fuel	
Fuel supply line inlet	1.5 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 (7-11)	

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.

Fuel Consumption	60 Hz	50 Hz
Natural Gas, m^3/hr. (cfh) at % load‡	Standby Ratings	
100%	46.8(1651)	39.6(1400)
75%	38.9(1372)	31.3(1105)
50%	27.9 (984)	22.8 (806)
25%	18.4 (650)	15.1 (535)
0%	10.4 (369)	8.8 (310)
LP Gas, m^3/hr. (cfh) at % load	Standby Ratings	
100%	16.5 (582)	14.4 (509)
75%	13.3 (469)	11.8 (416)
50%	10.0 (354)	8.4 (298)
25%	6.4 (226)	5.8 (205)
0%	3.7 (130)	3.1 (108)

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

LP vapor conversion factors:
8.58 $ft.^3$ = 1 lb.
0.535 m^3 = 1 kg.
36.39 $ft.^3$ = 1 gal.

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.

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

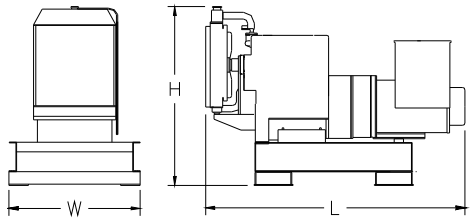
- **Heavy duty steel base**
- **Vibration isolators**
- **Oil drain valve with extension**
- **Battery rack**
- **Battery cables**
- **Water jacket heater**
- **Owners manual**

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
- ☐ Flexible Fuel Lines

WEIGHTS AND DIMENSIONS

OVERALL SIZE, L x W x H, in.: 96 in. x 46 in. x 60 in.
WEIGHT (WET): 2,500 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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