you can depend on

TAYLOR POWER SYSTEMS

Model: TD1600

Shown with optional equipment

Ratings Range

		60Hz
Standby:	kW	1328-1600
	kVA	1660-2000
Prime:	kW	1276-1440
	kVA	1595-1800

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 2 Certified Engine.

Generator	Voltage	PH	Hz	Standby Rating		Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
PI734D-312	220/380	3	60	1328/1660	2525	1276/1595	2426
	240/416	3	60	1512/1890	2626	1440/1800	2501
	254/440	3	60	1600/2000	2627	1440/1800	2365
	277/480	3	60	1600/2000	2408	1440/1800	2168
PI734D-07	347/600	3	60	1600/2000	1927	1440/1800	1734
PI734E-312	220/380	3	60	1516/1895	2883	1440/1800	2738
	240/416	3	60	1600/2000	2779	1440/1800	2501
	254/440	3	60	1600/2000	2627	1440/1800	2365
	277/480	3	60	1600/2000	2408	1440/1800	2168

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.)

Engine Application Data

Engine Specifications

Manufacturer	Mitsubishi
Engine Model #	S16R-Y2PTAW-1
Engine Type	4 Cycle, 16 Cylinder
Induction System	Turbocharged, Inter Cooler
Displacement, L (in^3)	65.4 (3989)
EPA Emissions Level	Tier 2
HP at Rated Speed BHP (kW_m)	2346 (1750)
Rated RPM	1800
Bore and Stroke in(mm)	6.69 x 7.09 (170 x 180)
Compression Ratio	14.5:1
Air Filter Type	Dry
Governor Type/Model	Proact2
Governor Manufacturer	Woodward
Freq Reg NL to FL	Isochronous
Freq Reg Steady State	+/- 0.25%

Engine Lubrication System

Oil Pan Capacity gal(L)	52.8 (200.0)
Oil Pan w/Filter	60.8 (230.0)
Oil Filter Quantity	4
Oil Filter Type	Cartridge
Oil Cooler	Water Cooled
Recommended Oil	15W-40
Oil Press psi(kPa)	71 (490)

Engine Cooling System

Genset Max Ambient Temp °F(°C)	113 (45)
Engine Coolant Cap qt(L)	179.6 (169.9)
Engine + Radiator System Cap qt(L)	622.0 (588.6)
Water Pump Type	Centrifugal
Coolant Flow gpm (Lpm)	489 (1850.9)
Charge Cooler Flow gpm (Lpm)	243 (919.8)
Heat Rejected to Cooling Water @ Rated kW; Btu/min (kW)	36167 (635.7)
Heat Rejected to Charge Cooler @ Rated kW; Btu/min (kW)	36167 (635.7)
Heat Rejected to Ambient Air @ Rated kW; Btu/min (kW)	8436 (148.3)
Max Restriction of Cooling Air inH_2O(kPa)	0.5 (0.124)

Engine Exhaust System

Exhaust Manifold Type	Dry
Exhaust Flow @ Rated kW cfm(cmm)	15642 (443)
Exhaust Temp (dry manifold) °F(°C)	935 (487)
Max Back Pressure inH_2O(kPa)	23.6 (5.9)
Exhaust Outlet Diameter in(mm)	13.39 (340)
Exhaust Outlet Type	JIS350A (approx 14")

Engine Electrical System

Charging Alternator Volts dc	24
Charging Alternator Amps	30
Grounding Polarity	Negative
Starter Motor Volts dc	24
Battery Recommendations	
Battery Volts dc	24
Min Cold Cranking Amps	1100
Quantity Required	4

Ventilation Requirements

Cooling Airflow scfm(cmm)	91700 (2598)
Combustion Airflow cfm(cmm)	5932 (168)
Heat Rejected to Ambient	
From Engine Btu/min(kW)	8346 (147)
From Alternator Btu/min(kW)	4550 (80)
Recommended Free Area Intake	
Louver Size $ft^2(m^2)$	196.0 (18.22)

Engine Fuel System

Recommended Fuel	#2 Diesel
Fuel Line at Engine	
Supply Line Min ID in(mm)	0.75 (19)
Return Line Min ID in(mm)	0.75 (19)
Fuel Pump Type	Engine Driven
Fuel Pump Max Lift ft (m)	3 (1)
Max Flow to Pump gph(Lph)	148 (560.2)
Fuel Filter	
Secondary Filter	4 µm
Secondary Water Separator	Not Included
Primary Filter	Optional
Primary Water Separator	Optional

Fuel Consumption – Standby Rating

100% Load gph(Lph)	126.6 (479.2)
75% Load gph(Lph)	94.1 (356.2)
50% Load gph(Lph)	65 (246.0)
25% Load gph(Lph)	38 (143.8)

Fuel Consumption – Prime Rating

100% Load gph(Lph)	115.2 (436.0)
75% Load gph(Lph)	85.6 (324.0)
50% Load gph(Lph)	59.1 (223.7)
25% Load gph(Lph)	34.6 (131.0)

Engine Output Deratings - Standby

Rated Temp	40°C
Rated Altitude	1500 m
Max Altitude	5000 m
Temperature Derate	-5% / 10°C
Altitude Derate	-1% / 100 m

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 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

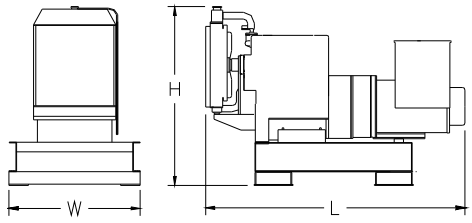
- **Heavy duty steel base**
- **Vibration isolators**
- **Oil drain valve with extension**
- **Battery rack**
- **Battery cables**
- **Water jacket heater**
- **Owners manual**
- **Electronic Isochronous Governor**

Optional Accessories

- ☐ Critical Exhaust Silencer
- ☐ Flex Exhaust Connector
- ☐ 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.: 235 in. x 100 in. x 108 in.
WEIGHT (WET): 30,785 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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