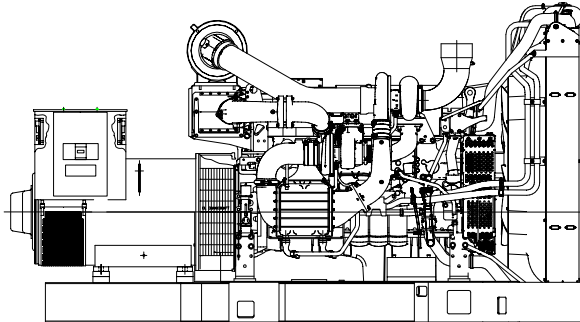




MAQUINARIA IGSA POWER GENERATION SYSTEMS



MODEL: GSV020600S
DIESEL ENGINE VOLVO
MODEL: TWD1643GE, TIER II
CAPACITY: 600 KW 60 HZ

RATINGS RANGE	
PRIME HP(KW)	STANDBY HP(KW)
796 (585)	876(644)

The Genset performance corresponds to ISO 3046, BS 5514 and DIN 6271.

STANDARD FEATURES

Complete system designed and built at ISO9001 certified facility

- Factory tested to design specifications at full load conditions.
- Fully engineered with a range of options and accessories.

1 IGSA Genset's are composed of 6 cylinders in line and four strokes diesel engine for industrial stationary applications. Those equipments are fully factory tested using a resistive load. (1) Hour ramp 100% load test.

2 Base of structural steel

3 The controls and accessories are selected to work together to achieve the maximum operational performance and security.

4 Exhaust: stainless steel exhaust flex and ANSI outlet flange.

5 Engine **VOLVO TWD1643GE, TIER II**

6 Alternator, Stamford.

7 Control MEC 310 panel USC300.

8 Standard and optional equipment may vary for UL 2200 listed packages. UL 2200 listed packages may have oversized generators with a different temperature rise and motor starting characteristics.

GENERAL FEATURES

- IGSA GENSET of **600 kW to 208, 380, 440, 480VAC**. 3 Phase, 4 Wire, 60 Hertz, is composed by an internal engine four strokes coupling with the alternator, controls and accessories totally assembled and tested in factory.
- The controls and accessories of the Genset are selected to provide the maximum in efficiency and Security
- The generator set its components are tested factory-built, and production-tested.
- The genset engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 2 nonroad emissions regulations.
- Electronic engine controls manage the engine (isochronous)
- Integrated complete system control and monitoring (EMS 2)



WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION SYSTEMS AND ADDITION CONSTANTLY INNOVATION.

www.igsa.com.mx
All rights reserved.
Printed in MEXICO

ENGINE SPECIFICATION DATA MODEL TWD 1643GE

Weight 2200 Kg (4850 Lb)

General Data		
Model	TWD 1643GE	
Number of Cylinders	In line 6	
Method of operation	4 stroke	
Bore and Stroke--mm (in)	144x165 (5.67x6.50)	
Displacement--l (in.3)	16.12 (983.7)	
Compression Ratio	16.5:1	
Physical Data		
Length-- mm(in)		
Width--mm(in)	1350 (53.1)	
Height-- mm(in)	1930 (76)	
Weight, dry--kg (lb)	2200 (4850)	
Performance Data		
With fan, kW (hp) at:	1800 rpm	
Prime Power	585 (796)	
Max Standby Power	644 (876)	
Lubrication System		
Oil consumption, liter/h (US gal/h) at:	1800 rpm	
Prime Power	0.10 (0.029)	
Maz Standby Power	0.11 (0.032)	
Oil System Capacity incl filters, liter	48	
Fuel Consumption -- kg/hr (lb/hr)		
	Prime	Sandby
25 % Power	224 (0.363)	220 (0.357)
50 % Power	201 (0.326)	200 (0.324)
75 % Power	197 (0.319)	198 (0.321)
101 % Power	202(0.327)	204 (0.331)
Intake and exhaust system		
Air consumption, m ³ /min (cfm) at:	1800 rpm	
Prime Power	53 (1874)	
Max Standby Power	55 (1937)	
Max Allowable air intake restriction, kPa (In wc)	5 (20.1)	
Heat rejection to eshaust, kW (BTU/min) at:	--	
Prime Power	472 (26842)	
Max Standby Power	540 (30709)	
Exhaust gas temperature after turbine °C (°F) at:	1800 rpm	
Prime Power	422 (792)	
Max Standby Power	461 (862)	
Max Allowable back-pressure in exhaust line, kPa (In wc)	10 (40.2)	
Exhaust gas flow, m ³ /min (cfm) at:	1800 rpm	
Prime Power	119 (4201)	
Max Standby Power	130.1 (4593)	



STAMFORD ELECTRIC ALTERNATOR MODEL HCI534E/544E weight 1543 kg (3402Lb)

CONTROL SYSTEM	SEPARATELY EXCITED BY P.M.G.		
A.V.R.	MX321	MX341	
VOLTAGE REGULATION	(+/- 0.5%)	(+/- 1.0%)	WITH ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	REFERENT TO SHOT CIRCUIT DECREMENT CURRENT		

INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER CONCENTRIC							
WINDING PITCH	TWO THIRDS							
WINDING LEADS	12							
STATOR WDG. RESISTANCE	0.0043 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED							
ROTOR WDG. RESISTANCE	1.96 Ohms at 22°C / 72°F							
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N. refer to factory for others							
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%							
MAXIMUM OVERSPEED	2250 Rev/Min							
BEARING DRIVE END	BALL. 6220 (ISO)							
BEARING NON-DRIVE END	BALL. 6314 (ISO)							
WEIGHT COMP. GENERATOR	1 BEARING 1543 kg / 3402 lb				2 BEARING 1535 kg / 3385 lb			
WEIGHT WOUND STATOR	722 kg / 1592 lb				722 kg / 1592 lb			
WEIGHT WOUND ROTOR	617 kg / 1361 lb				588 kg / 1297 lb			
WR ² INERTIA	8.9828 kg/m ² / 1.84 lb/ft ²				8.7049 kg/m ² / 1.78 lb/ft ²			
SHIPPING WEIGHTS in a crate	1635 kg / 3605 lb				1625 kg / 3605 lb			
PACKING CRATE SIZE	166 x 87 x 124 (cm) / 65.3x35x49 (in)				166 x 87 x 124 (cm) / 65.3x35x49 (in)			
TELEPHONE INTERFERENCE	50 Hz THF<2%				60 Hz TIF<50			
COOLING AIR	1.035 m ³ /sec 2202 cfm				1.312 m ³ /sec 2780 cfm			
VOLTAGE SERIES STAR	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
VOLTAGE PARALLEL STAR	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
VOLTAGE SERIES DELTA	220/110	230/115	240/120	254/127	240/120	254/127	266/133	277/138
kVA BASE RATING FOR RECTANCE VALUES	600	600	600	600	681	713	731	750
Xd DIR. AXIS SYNCHRONOUS	3.14	2.83	2.63	2.34	3.53	3.30	3.10	2.92
X'd DIR. AXIS TRANSIENT	0.17	0.15	0.14	0.12	0.17	0.16	0.15	0.14
X''d DIR. AXIS SUBTRANSIENT	0.12	0.11	0.10	0.09	0.12	0.11	0.11	0.10
Xq QUAD. AXIS REACTANCE	2.45	2.21	2.05	1.82	2.82	2.64	2.48	2.33
X''q QUAD. AXIS SUBTRANSIENT	0.26	0.24	0.22	0.20	0.34	0.32	0.30	0.28
XL LEAKAGE REACTANCE	0.06	0.05	0.05	0.04	0.06	0.06	0.05	0.05
X2 NEGATIVE SEQUENCE	0.18	0.16	0.15	0.13	0.23	0.22	0.20	0.19
X0 ZERO SEQUENCE	0.08	0.08	0.07	0.08	0.10	0.09	0.09	0.08
REACTANCES ARE SATURATED				VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED				
T'd TRANSIENT TIME CONST.	0.08 s							
T''d SUB-TRANSTIME CONST.	0.012 s							
T'do O.C. FIELD TIME CONST.	2.5 s							
Ta ARMATURE TIME CONST.	0.019 s							
SHORT CIRCUIT RATIO	1/Xd							

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, BS5514, AS2789, and DIN 6271. Prime Power Ratings: Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for a 12 hours period. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, 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 0.4% per 100 m (328 ft.) elevation above 1400 m (4593 ft.). Temperature: Derate 5.0% per 10°C (18°F) temperature above 40°C (104°F). For radiator cooling system capacity, derate 0.5°C (0.9°F) per 100 m (328 ft.) elevation above 150 m (492 ft.).



**WE ARE THE BEST IN MANUFACTURING THE POWER GENERATION
SYSTEMS AND ADDITION CONSTANTLY INNOVATION.**

www.igs.com.mx
All rights reserved.
Printed in MEXICO

CONTROLLER FOR GENSET: MEC310

The Generator Controller MEC 310 is a microprocessor-based control unit containing all necessary functions for protection and control of a power generator. Besides the control and protection of the diesel engine it contains a full 3-phase AC voltage and current measuring circuit. The unit is equipped with an LCD display presenting all values and alarms.



- USC 300C Unit Mount Control Panel, Black Nema 1 enclosure c/w rubber mounts
 - MEC 310 Microprocessor Based Engine Generator Controller
 - Graphic Display 128 X 64 pixels (STN) Super Twisted Nematic
 - Digital AC Metering:
 - 3-Phase Volts (Phase to Phase and Phase to Neutral),
 - 3-Phase Amps
 - Frequency
 - kW, kVAR, KVA, pF, kWhr
- AC Protective Relaying:
 - 27/59 Under/Over Voltage
 - 32 Reverse Power
 - 51 Time Overcurrent
 - 81 O/U Under/Over Frequency
 - Digital gauge display:
 - Oil Pressure (sender required by others)
 - Coolant Temperature (sender required by others)
 - Fuel Level (sender required by others)
 - Hourmeter
 - Tachometer
- 5 digital inputs for alarms / shutdowns
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
 - Event Logging (30 events)
 - Pushbuttons:
 - Emergency Stop
 - Manual Start and Stop
 - Manual/Auto/Test
 - Lamp Test
 - Horn Silence
 - Indicating Lights:
 - Common Alarm
 - Generator Ready (Voltage and Frequency Normal)

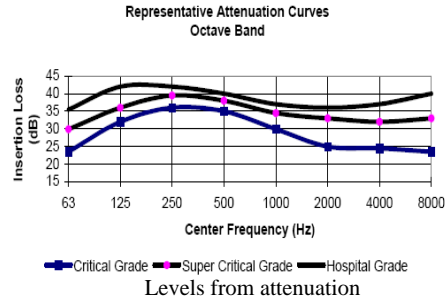
FEATURES

- Electrical Rating:**
- Single or three phase, 600VAC maximum, 50/60HZ, 4 wire
 - 12 or 24Vdc (nominal) supply, negative ground.
 - Dedicated Output Contacts - Engine Crank; Run (30 VDC / 6 Amps)
 - Three Programmable Output Contacts (30 VDC / 1 Amps)
- Enclosure:**
- Black Nema 1 enclosure c/w rubber mounts
- Engine Senders:**
- Oil pressure (1/8" NPT), Temperature (1/4"NPT) (Supplied loose for engine mounting).
- Requirements:**
- Exceeds requirements of CSA 282 and NFPA 110 Level

OPTIONAL SILENCER ACCORDING TO THE APPLICATION

Silencer with different levels from attenuation

- Critical Grade
- Super Critical Grade
- Hospital Grade



DOCUMENTATION AND OTHERS

- Manual of operation and maintenance
- Spare parts
- Maintenance
- Consulting

MISCELLANEOUS EQUIPMENT

- Batteries of 12 VDC with cables for battery connection with the engine.

GENSET OPTIONS

Control Panel

USC 300C Control Panel is standard on all units see page 4 of spec sheet for standard features.

Another Type _____

Fuel system

- Fuel Water Separator
- Day tank
- Auxiliary fuel pump
- Sub Base mounted Fuel Tank
 - Single Wall
 - Double Wall
 - UL listed

Diesel Fuel Tank

- 1000 L (264.1 gal)
- 5000 L (1320.8 gal)
- 15000 L (3962.5 gal)

Exhaust System

- Critical Grade
- Super Critical Grade
- Hospital Grade

Engine Electrical system

- Battery
 - Lead-Acid
 - NiCad
- Battery Rack
- Battery Charger Automatic

Generator

- Breaker in the alternator
- PMG excitation & DVR 2000E Regulator
- A.V.R (MX321)
- A.V.R (MX341)

OPTIONAL ACCESSORIES AVAILABLE FOR THE EQUIPMENT

Vibration isolation

- Rigid Spring Mounting
- Resilient Mounting

Filters

- Air Filter for Medium Dust Environments
- Air Filter of Heavy Dust Environments

Drain

- Oil drain Extension

Enclosures

- Sound Attenuated
- Weather Proof
- Stainless steel cover
- Trailer Mounting
- Interior lights Ac or DC

Heaters

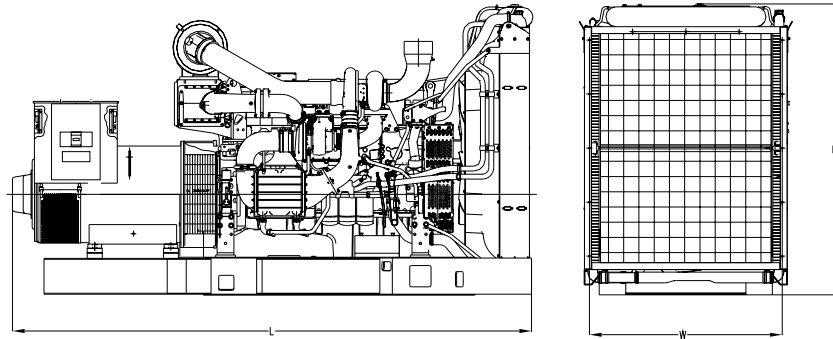
- Jacket Water Heater
- Crankcase Oil Heater

Insulation Blankets

- Features:
(Temperature to 1260°C (2300°F), Non-Combustible, Highly Resistant to Vibration, Oil, Fuel, Grease, and Moisture Resistant Exterior, Personal Protection

Notes

DIMENSIONS



LENGTH MM(IN)	WIDTH MM(IN)	HEIGHT MM(IN)
3310 (130.3)	1350 (53.1)	1930 (76)

NOTES: - General configuration not to be used for installation. See general dimension drawing for detail.

SERVICES

- Development of the project.
- Development of engineering.
- Equipment's Installation
- Engineering for special applications.
- Synchronies with utility network or more Gensets.
- Attention and technical support

INSTALLATION OPTIONS OF THE GENSET

- On-Site
- Acoustic Enclosure
- ISO Container
- Trailer

