

220/127V | 60Hz

VOLVO TWD1643GE | STAMFORD HCI544E

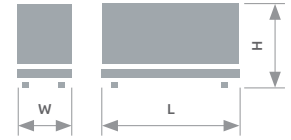
DGVSW 600 ST-220/127V



Illustrative image.

Measures:

L : 5600 mm
H : 2330 mm
W : 1910 mm



Weight:

6895 kg

Hz 60Hz

V 220/127V

 Water cooled

 Diesel

 1800 r.p.m.

 Soundproofed

 CE Conformity

1 / Genset general description

GENERAL TECHNICAL DATA	Engine	VOLVO TWD1643GE
	Alternator	STAMFORD HCI544E
	Performance class	G3
	Frequency	60Hz
	Voltage	220/127V
	Control panel	DSE 7320 MKII
	Fuel tank (l)	820
	Noise level (dBA@7m)	74

POWER¹	PRP (kVA / kW)	694 / 556
	ESP (kVA / kW)	762 / 610

Voltage	PRP (kVA/kW)	ESP (kVA/kW)	Amperage (A)
208/120	694 / 556	762 / 610	02118
220/127	694 / 556	762 / 610	2002
380/220	694 / 556	762 / 610	01159
400/230	694 / 556	762 / 610	01101
440/254	694 / 556	762 / 610	01001
480/277	694 / 556	762 / 610	0918

A **robust, compact design** geared to facilitating maintenance work, high standard equipment and components from prestigious brands are just some of the features that make the Dagartech **Industrial Range** the best option for use in **industrial facilities, infrastructure and the hospital sector.**



Scan this QR code to access the

DGVSW 600 ST-220/127V
product datasheet

¹PRP: Continuous Power ("Prime Power") ISO 8528-1 standard.

ESP: Emergency Power ("Emergency Standby Power") ISO8528-1 standard.

Note: Dagartech reserves the right to amend any genset characteristic without notice.

2 / Engine specifications

Engine general data	
Manufacturer / model	VOLVO TWD1643GE
R.P.M.	1800 r.p.m.
Max. Power ESP (kWm)	644
PRP Power (kWm)	585
Fuel	Diesel
Number of cylinders	6 cylinders
Engine capacity (c.c.)	16120
Compression ratio	16,5 : 1
Cooling system	Water cooled
Regulation type	electronic
Engine type / injection / suction type	Diesel / direct / turbocharged

⚙️ **VOLVO TWD1643GE Diesel** engine, inline **6 cylinders, 4-stroke, turbocharged suction, direct injection** with **electronic regulator** through fuel pump.

Complying EU Stage II Emissions.

Fuel	
Fuel type	Diesel
Fuel tank capacity (l)	820

2.1/ Fuel feed system

⚙️ **direct injection** system, filter that prevents the passage of particles, original parts from the engine manufacturer.

Fuel consumption table

% load	Consumption l/h	Authonomy (h)
50% PRP	70	11,7
75% PRP	102,9	8
100% PRP	140,7	5,8
110% ESP	N/A	N/A

2.2/ Cooling system

⚙️ **Cooling by fully distributed coolant** in a closed circuit driven by a pump activated by the engine. Tropicalized radiator. Original parts from the engine manufacturer.

Cooling system	
Fan airflow (kg/s)	15
Fan power consumption (kW)	30
Engine + radiator capacity (l)	128

2.3/ Lubrication system

⚙️ Lubrication system driven by the crankshaft driven pump. Filter on top with full flow cartridge inserted, front crankcase. Original parts from engine manufacturer.

Lubrication system	
Total oil capacity (l)	90

2.4/ Air intake system

⚙️ Natural air intake system including two-stage filter. Original parts from the engine manufacturer.

Air intake system	
Combustion air flow (l/h)	210

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Electrical start system

Number of batteries	2
Battery features	12V 44Ah
Starting voltage (V)	24V

2.5 / Start system

⦿ **Start system by electric engine**, battery (without maintenance) with disconnect and charging alternator driven by the **24V starter engine**, original parts from the engine manufacturer.

Exhaust system

Exhaust gas flow (m ³ /min)	119
Exhaust gas temperature (°C)	422
Exhaust external diameter (mm)	N/A
Max. exhaust backpressure (kPa)	10

2.6 / Exhaust system

⦿ Attenuation level: **-35dB(A)**.

3 / Alternator specifications

Alternator general data

Manufacturer / Model	STAMFORD HCI544E
Number of poles	4
Insulation class	H
Number of wires	12
Mechanical protection degree	IP23
Voltage regulator (AVR)	Consultar
Voltage regulator	±1%
ESP power rating 27°C (kVA)	769
PRP power rating 40°C (kVA)	713
Number of phases	3
Power factor (cos φ)	0,8
Efficiency 50% load η (%)	95,3%
Efficiency 75% load η (%)	95,4%
Efficiency 100% load η (%)	94,9%
Efficiency 110% load η (%)	94,7%

⦿ **STAMFORD HCI544E** alternator, **4 poles**, brushless, mechanical structure with easy access to connections and components, insulation class H, winding with 2/3 pitch and autoexcited AVR.

Protection with premium epoxy resins, high voltage parts are impregnated under vacuum allowing always an excellent insulation.

The **alternator** complies with the following **standards**:

AS 1359 | IEC 34-1 1 | BS EN 60034-1 | VDE 0530 | BS 5000 | CAN/CSA-C22.2-100 | NEMA MG1-32

Low wave distortion:

- ⦿ THD (100% load) = 2%
- ⦿ THF < 2%
- ⦿ Complying with: EN61000-6-3, EN61000-6-2 standards on radio interference.

Note: Dagartech reserves the right to amend any genset characteristic without notice.

4 / Bench specifications

Genset mounted over an **electro-welded bench made of high-strength steel**, painted with **electrostatic epoxy polyester powder paint**. Union assembly to the bench by **anti-vibration shock absorbers**. Fuel **tank located on the bench**, provided with measuring gauge and fuel installation to the engine. Tested in saline mist chamber according to the ASTM B-117-09, 500h resistance.



5 / Canopy specifications

Electro-welded canopy made of galvanized high-strength steel, painted with **electrostatic powderbased epoxy-polyester paint**. Interior soundproofing with acustical and fireproof isolating rock wool. **Efficient residential exhaust -35dB(A)** for the evacuation of gases to the outside with rain cap. Tested in saline mist chamber according to the ASTM B-117-09 standard, 720h resistance. Mechanical protection degree IP44



6 / Control panel

Including protection devices, distribution with **DSE 7320 MKII** control card, that allows to operate in automatic, manual or by signal starting modes.



6.1 / Main elements of the control panel

- ⦿ **Emergency stop button.**
- ⦿ **DEEP SEA battery charger: DSE 9255 24V, 5A.** Designed to be permanently connected to the battery and keep 100% of the load. The charger switches to float mode when the load is complete.
- ⦿ **Protections:**
 - ⦿ 4-pole magnetothermic protection against overloads and shortcircuits.
 - ⦿ Protection fuses for the control assembly.

Protection switch

Manufacturer / model	Schneider ComPact 2000A 4P
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6.2 / Control card

DSE 7320 MKII DEEP SEA control card with mains grid monitor. The genset will automatically start up when detecting a fault in the electric power network and it will turn off automatically as well, when the electrical supply is re-established. It can also work in manual mode and by signal. It allows you to monitor a wide range of generator parameters and display information alerts, status and alarms.

The module includes communication ports USB , RS232, RS485, and also DSENet® for system expansion. Possibility of Ethernet networking (plug).

The entire module is easily configurable via PC using the DSE specific software configuration.

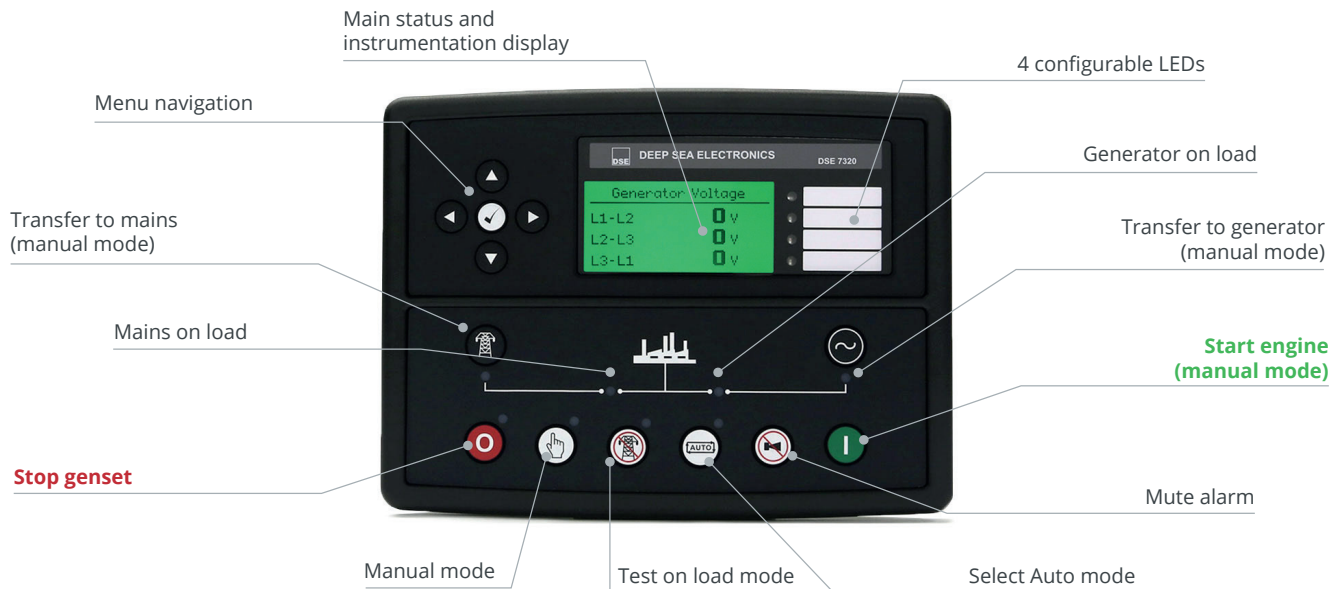
It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

Different operating modes: AUTOMATIC mode, MANUAL mode, SIGNAL mode and TEST mode.

Other alternative configurations are available upon request to extend the capabilities of the operation modes.

⦿ The control card complies with the following **environmental tests**:

| BS EN 61000-6-2 (electromagnetic compatibility) | BS EN 61000-6-4 (electromagnetic compatibility) | BS EN 60950 (electrical safety) | BS EN 61000-6-2 (Temperature) | BS EN 60068-2-6 (Vibration) | BS EN 60068-2-30 (Humidity) | BS EN 60068--2-27 (Shock).



6.2.1 / Allowing reading

Engine	
Turning speed	Engine temperature
Oil pressure	Hours counter
Battery Voltage	Number of engine starts
Fuel level	Consumo combustible

Generator	
Generator voltage (L-N)	Generator Voltage (L-L)
Generator frequency	Generator intensity
Power factor	Generator load (kW, kVA, kWh, kVAh)

Mains
Mains voltage (L-N)
Mains voltage (L-L)
Mains frequency

Alarm detected	
Start-up failure	High engine temperature
Low oil pressure	Low fuel level
Low coolant level	Overload
High/Low battery voltage	Charging alternator failure
High/Low generator voltage	High/Low generator frequency
External emergency stop	Over speed engine
Maintenance interval	

- ⚡ Genset response to a fully configurable alarm via **DSE 7320 MKII** software.

7 / Standard supply range

The Dagartech **Industrial Range** has the following **standard equipment** (soundproofed models):

- 1800 rpm water-cooled diesel engine.
- 12-wire electronically adjusted alternator.
- Deep Sea Electronics digital control module.
- High-attenuation silenced exhaust with an anti-rain cap.
- Galvanized metal plate, epoxy painted, soundproofed body with an outer filling port with a key.
- Large capacity metal fuel tank with a cleaning register.
- Emergency stop button with mechanized outer access.
- Control panel with magneto-thermal protection.
- Electronic battery charger, maintenance-free battery and a battery disconnect switch.
- Lifting eye (>75 kVA).

8 / Optional equipment

The Dagartech **Industrial Range** has the following **optional equipment** (soundproofed models):

○ Electrical Options

- ATS contactors SCHNEIDER.
- Earth Leakage protection SCHNEIDER (page 7).
- Remotely operated ATS SOCOMEC (page 7).
- 3P circuit breaker.

○ Engine - Alternator Options

- Engine heater.
- Electronic governor.
- Fuel prefilter with water separator.
- Oil sump pump.
- 6-way valve kit with quick connectors.
- Automatic fuel system, electric pump included.
- Automatic fuel system, electric pump not included.
- SuperSilent Kit*.
- Anti condensation heaters.
- Alternator impregnation systems 3 (spray).
- Alternator impregnation systems 4 (superior).
- AVR MX341 + PMG ± 1% STAMFORD.
- AVR MX321 + PMG ± 0,5% STAMFORD.
- EBS (for those models with Stamford alternator which do not have a permanent magnet in its standard equipment).

○ Mechanical options

- Retention bath.
- Sensor on retention bund warning when spillage.
- Stackable canopy.
- Galvanized frame.
- Special RAL color.
- 24h fuel tank with retention bath.
- External fuel tank - 400 l (ROTH DUO).
- External fuel tank - 620 l (ROTH DUO).
- External fuel tank - 1.000 l (ROTH DUO).
- External fuel tank - 1.500 l (ROTH DUO).
- Leveling machine mounts.
- Spring isolators.
- Central lifting beam (models < 75kVA).

○ DSE Control Card Options

- Earth Leakage protection SCHNEIDER.
- ATS contactors SCHNEIDER.
- Remotely operated ATS SOCOMEC.
- Additional control card DEEP SEA ELECTRONICS 7320MKII.
- DSE 2157 with 8 volt free signal (DSE 7320MKII is required).
- DSE 2130 with 8 Inputs module (DSE 7320MKII is required).
- DSE 2548 LED module with 8 signals (DSE 7320MKII is required).
- GSM modem (RS232) (DSE 7320MKII is required).
- DSE 855.
- DSE 890 webnet.
- DSE Control card DSE 7420.
- DSE 334 network surveillance.
- DSE 8610 Synchronism Module.
- IG-NT Synchronism Module.

Synchro Kits supply range:

DSE 8610 Synchro Kit (MINT Auto Start). It includes:

- DSE 8610 MKII control card.
- Electronic governor.
- PMG.
- Motorized breaker.
- Earth contactors.
- Testing.

DSE 8620 Synchro Kit (SpTM). It includes:

- DSE 8620 MKII control card.
- Electronic governor.
- PMG.
- Testing.

*The SuperSilent Kit includes:

Heavy mass - alternator and -50 dB(A) exhaust.

*Check the availability of options according to each model.
Check the availability of other options.*

8 / Optional equipment

8.3 / ATS

The genset can be provided with an automatic transfer, as an optional device.

INVERSOR TABLE

GENSET POWER	208/120V		220/127V		380/220V		480/277V	
	Contactors Schneider	Motorized Socomec	Contactors Schneider	Motorized Socomec	Contactors Schneider	Motorized Socomec	Contactors Schneider	Motorized Socomec
	20kW	80	-	80	-	40	-	-
30kW	125	125	125	125	60	-	-	-
50kW	-	160	-	160	125	125	-	-
60kW	-	250	-	250	125	125	-	-
80kW	-	315	-	315	-	160	-	-
100kW	-	400	-	400	-	250	-	160
135kW	-	630	-	630	-	250	-	160
140kW	-	630	-	630	-	250	-	250
200kW	-	800	-	800	-	315	-	250
230kW	-	800	-	800	-	-	-	-
300kW	-	1000	-	1000	-	630	-	630
360kW	-	1250	-	1250	-	630	-	630
400kW	-	1600	-	1600	-	630	-	630
520kW	-	1600	-	1600	-	800	-	800
600kW	-	-	-	-	-	1000	-	1000

ⓘ The table below shows the different amperage rating of the magneto thermal switches and investors cabinets:

ⓘ **ATS by contactors Schneider:**

25 a 125 A.

ⓘ **Motorized ATS Socomec:**

≥ 125A.

Directives and Standards

ⓘ **ENVIRONMENTAL OPTIONS** ISO 8528-1:2018: 25°C, 100kPa y 30% relative humidity:

ⓘ **Prime Power (PRP):** Electrical power data available load for unlimited hours per year. A 10% overload is permissible for 1 hour every 12 hours according to ISO 8528-1:2018.

ⓘ **Emergency Standby Power (ESP):** Electrical power data available at variable load in an emergency according to ISO 8528-1:2018.

The DAGARTECH genset has the **CE marking** which includes the following directives:

ⓘ **2006/42/CE.** Machinery Safety Directive.

ⓘ **EN ISO 8528-13:2016.** Part 13: Safety. Alternate current electric generator sets driven by internal combustion.

ⓘ **2014/35/UE.** Low Voltage Directive.

ⓘ **2000/14/CE¹.** Noise Emission Directive. Sound power levels assessed pursuant to the procedure established in the aforementioned directive.

ⓘ **2011/65/EU.** Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS 2).

¹This directive does not apply to electric generator sets with a power of over 400 kW.