

480/277V | 60Hz

VOLVO TWD1643GE | STAMFORD HCI544E

DGVSW 600 ST-480/277V



Illustrative image.

Measures:

L : 5000 mm
H : 2525 mm
W : 2010 mm



Weight:

6895 kg

Hz 60Hz

V 480/277V

 Water cooled

 Diesel

 1800 r.p.m.

 Soundproofed

 CE Conformity

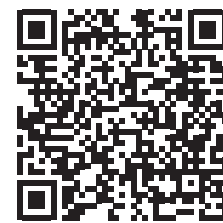
1 / Genset general description

GENERAL TECHNICAL DATA	Engine	VOLVO TWD1643GE
	Alternator	STAMFORD HCI544E
	Performance class	G3
	Frequency	60Hz
	Voltage	480/277V
	Control panel	DSE 7320 MKII
	Fuel tank (l)	1300
	Noise level (dBA@7m)	74

POWER ¹	PRP (kVA / kW)	695 / 556
	ESP (kVA / kW)	764 / 612

Voltage	PRP (kVA/KW)	ESP (kVA/KW)	Amperage (A)
208/120	695 / 556	764 / 612	02123
220/127	695 / 556	764 / 612	2007
380/220	695 / 556	764 / 612	01162
400/230	695 / 556	764 / 612	01104
440/254	695 / 556	764 / 612	01004
480/277	695 / 556	764 / 612	0920

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-480/277V
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.

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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)	1300

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	18,6
75% PRP	102,9	12,6
100% PRP	140,7	9,2
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
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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 disconnecter 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)	819
PRP power rating 40°C (kVA)	750
Number of phases	3
Power factor (cos φ)	0,8
Efficiency 50% load η (%)	95,2%
Efficiency 75% load η (%)	95,4%
Efficiency 100% load η (%)	95,0%
Efficiency 110% load η (%)	94,8%

⦿ **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.

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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 1000A 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.

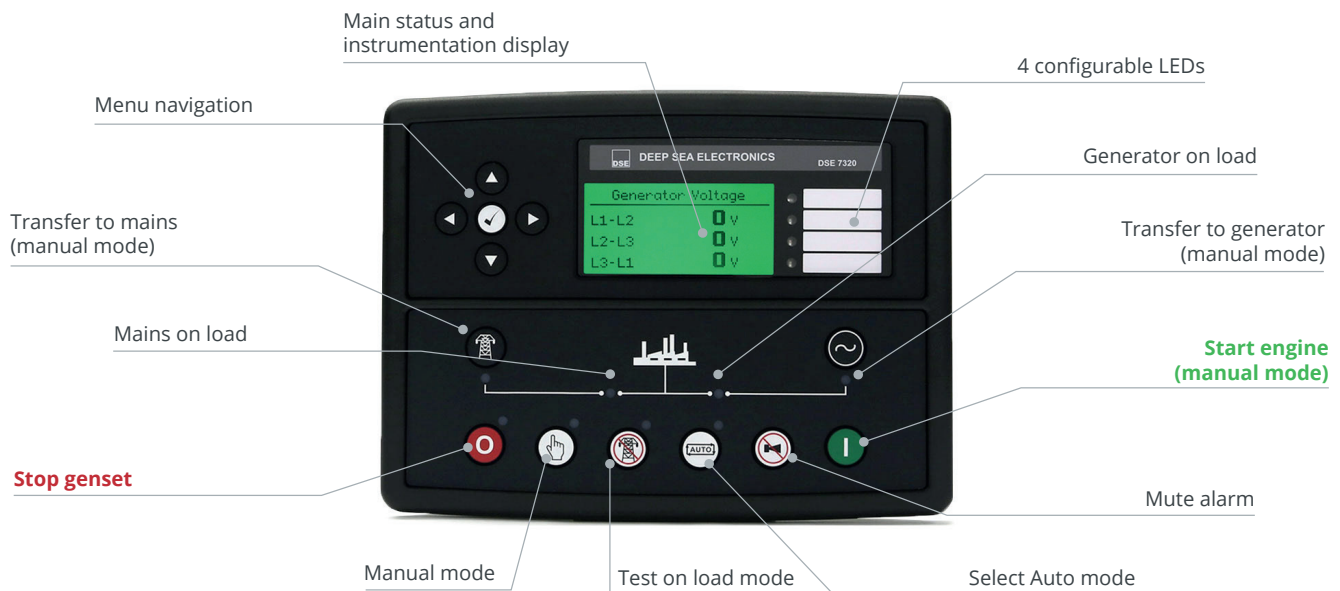
It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

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.

GENSET POWER	INVERSOR TABLE							
	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.