

480/277V | 60Hz

VOLVO TWD1643GE | STAMFORD HCI544E

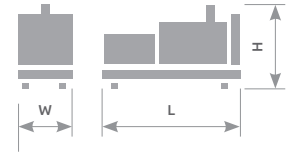
**DGVW 600 ST-480/277V**



Illustrative image.

#### Measures:

L : 3950 mm  
H : 2550 mm  
W: 1550 mm



#### Weight:

4800 kg

**Hz** 60Hz

**V** 480/277V

 Water cooled

 Diesel

 1800

 Open

 CE Conformity

## 1 / Genset general description

|                               |                             |                  |
|-------------------------------|-----------------------------|------------------|
| <b>GENERAL TECHNICAL DATA</b> | <b>Engine</b>               | VOLVO TWD1643GE  |
|                               | <b>Alternator</b>           | STAMFORD HCI544E |
|                               | <b>Performance class</b>    | G3               |
|                               | <b>Frequency</b>            | 60Hz             |
|                               | <b>Voltage</b>              | 480/277V         |
|                               | <b>Control panel</b>        | DSE 7320 MKII    |
|                               | <b>Fuel tank (l)</b>        | 1400             |
|                               | <b>Noise level (dBA@7m)</b> | N/A (Indoor)     |
| <b>POWER<sup>1</sup></b>      | <b>PRP (kVA / kW)</b>       | <b>695 / 556</b> |
|                               | <b>ESP (kVA / kW)</b>       | <b>764 / 612</b> |

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  
**DGVW 600 ST-480/277V**  
product datasheet

| Voltage        | PRP (KVA/KW) | ESP (KVA/KW) | Amperage (A) |
|----------------|--------------|--------------|--------------|
| 208/120        | 695 / 556    | 764 / 612    | 2123         |
| 220/127        | 695 / 556    | 764 / 612    | 2007         |
| 380/220        | 695 / 556    | 764 / 612    | 1162         |
| 400/230        | 695 / 556    | 764 / 612    | 1104         |
| 440/254        | 695 / 556    | 764 / 612    | 1004         |
| <b>480/277</b> | 695 / 556    | 764 / 612    | <b>920</b>   |

<sup>1</sup>PRP: 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 |

| Fuel                   |        |
|------------------------|--------|
| Fuel type              | Diesel |
| Fuel tank capacity (l) | 1400   |

### Fuel consumption table

| % load   | Consumption l/h | Authonomy (h) |
|----------|-----------------|---------------|
| 50% PRP  | 70              | 20            |
| 75% PRP  | 102,9           | 13,6          |
| 100% PRP | 140,7           | 10            |
| 110% ESP | N/A             | N/A           |

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

| Lubrication system     |    |
|------------------------|----|
| Total oil capacity (l) | 90 |

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



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

**Complying EU Stage II Emissions.**

### 2.1 / Fuel feed system

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

### 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.

### 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.

### 2.4 / Air intake system

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

480/277V | 60Hz

VOLVO TWD1643GE | STAMFORD HCI544E

**DGVW 600 ST-480/277V**

### 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 **12V starter engine**, original parts from the engine manufacturer.

### Exhaust system

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

### 2.6 / Exhaust system

⦿ Attenuation level: **-11dB(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.

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

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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 / Control panel

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



### 5.1 / 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

|                             |                            |
|-----------------------------|----------------------------|
| <b>Manufacturer / model</b> | Schneider ComPact 1000A 4P |
|-----------------------------|----------------------------|

### 5.2 / 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.

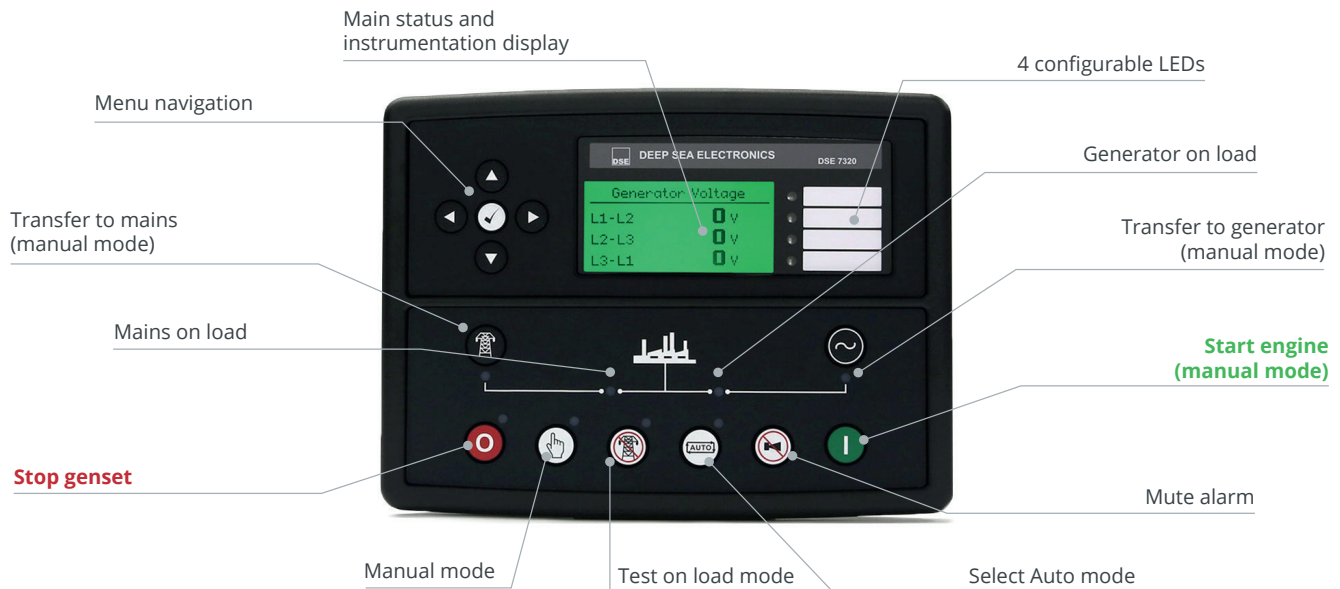
It has 132x64p illuminated LCD display with 4 lines of text, 5-key navigation through menus, 9 configurable outputs and 8 configurable inputs, programmable clocks and alarms, reading and displaying parameter values, including RMS values.

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).**



## 5.2.1 / 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.

## 6 / Standard supply range

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

- 1800 rpm water-cooled diesel engine.
- 12-wire electronically adjusted alternator.
- Deep Sea Electronics digital control module.
- Industrial gas exhaust silencer.
- Large capacity metal fuel tank with a cleaning register.
- Emergency stop button.
- Hot parts protection.
- Control panel with magneto-thermal protection.
- Electronic battery charger, maintenance-free battery and a battery disconnect switch.
- Lifting eye (>75 kVA).

## 7 / Optional equipment

The Dagartech **Industrial Range** has the following **optional equipment** (open 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.
- Exhaust -35 dBA.
- Exhaust compensators.
- Exhaust installation kit (2 clamps + 3m flexible hose).
- 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.
- 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

- 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).
- DSE 2520 for remote display (DSE 7320MKII is required).
- GSM modem (RS232) (DSE 7320MKII is required).
- DSE 855.
- DSE 890 webnet.
- DSE 2430 (DSE 7320MKII is required).
- 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.

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

## 7 / Optional equipment

### 7.3 / ATS

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

**INVERTOR 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/CE<sup>1</sup>.** 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).

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