

|                    |                         |                     |                        |
|--------------------|-------------------------|---------------------|------------------------|
| Volvo<br>TAD1641GE | CGT Stamford<br>HCI 544 | Generator<br>Model: | <b>BCV 500-60 T2/F</b> |
|--------------------|-------------------------|---------------------|------------------------|

|       |         |                                  |   |
|-------|---------|----------------------------------|---|
| 60 Hz | 3-Phase | Power Factor<br>Cos $\Phi$ = 0.8 | Emissions<br>EPA Tier II Flex Compliant |
|-------|---------|----------------------------------|---|

| RATINGS | PRIME POWER (PRP) |     | STANDBY POWER (LTP) |            |      |
|---------|-------------------|-----|---------------------|------------|------|
| Voltage | kVA               | kWe | kVA                 | kWe        | Amps |
| 480/277 | 580               | 464 | 650                 | <b>520</b> | 782  |
| 440/254 | 563               | 450 | 625                 | <b>500</b> | 820  |
| 416/240 | 550               | 440 | 606                 | <b>485</b> | 841  |
| 240/138 | 580               | 464 | 650                 | <b>520</b> | 1564 |
| 220/127 | 563               | 450 | 625                 | <b>500</b> | 1640 |

## Definition of Ratings & Reference Conditions

**Prime Power (PRP)** is the nominal output continuously available, where the average load (variable) does not exceed 70% of the prime power rating. 10% overload is available for a maximum of 1 hour in 12 hours of operation.

**Standby Power (LTP)** is the maximum output available, for up to 500 hours per year, where the average load does not exceed 70% of the standby power rating. No overload is available.

**Standard Reference Conditions:** air inlet temperature 25°C (77°F), barometric pressure 100kPa, [110m (361ft) altitude], 30% relative humidity.

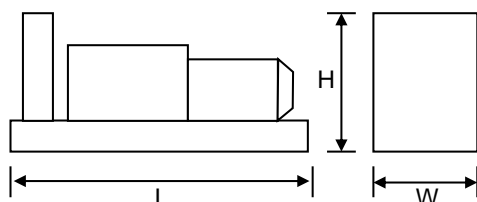
**Note:** The above ratings may be subject to derate at different operating conditions. Please see the Derate Guidelines on the Broadcrown website.

All power ratings and reference conditions in accordance with ISO 8528-1 and ISO 3046-1.



## Key Features:

- Water cooled Volvo diesel engine with ECU/CANBus
- Single bearing CGT Stamford alternator
- Radiator with pressure cap and drain point
- Fully guarded engine-driven fan
- Fully welded steel skid base with lifting points
- Integral fuel tank with filler cap and gauge
- Heavy duty rubber anti-vibration mountings
- 24V starter batteries and connecting cables
- Separate engine-driven battery charging alternator
- Spin on oil and fuel filters and dry type air filter element
- Industrial silencer (15dBA reduction) supplied loose
- Auto Start control system with digital instrumentation
- Main line circuit breaker
- Factory Test Certificate
- Operation & Maintenance Manual
- Wide range of optional extra features available



## Overall Dimensions & Weights - Open Set

Length (L) = 3710mm [146in]

Width (W) = 1187mm [46in]

Height (H) = 2267mm [89in]

Dry Weight (inc oil) = 4346kg [9581lb]

Operating Weight = 5098kg [11239lb]

| Typical Open Generator Sound Pressure Level at 1m, Free Field (dB) |       |        |        |        |         |         |         |         |
|--|-------|--------|--------|--------|---------|---------|---------|---------|
| Overall dBA  | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1000 Hz | 2000 Hz | 4000 Hz | 8000 Hz |
| 107  | 95    | 100    | 101    | 102    | 102     | 100     | 97      | 96      |

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**ENGINE & COOLING SYSTEM**
**VOLVO TAD1641GE**

|             | SI Units                                     | [US Units]       | PRIME                              | STANDBY      |
|-------------|--|------------------|------------------------------------|--------------|
| Performance | Engine Speed                                 | r/min [rpm]      | 1800                               |              |
|             | Gross Power                                  | kWm [bhp]        | 504 [676]                          | 565 [758]    |
|             | Fan Power                                    | kWm [bhp]        | 19 [25.5]                          | 19 [25.5]    |
|             | Net Power                                    | kWm [bhp]        | 485 [650]                          | 546 [732]    |
|             | Emissions Certification                      |                  | T2/F                               |              |
|             | Altitude Capability                          | m [ft.]          | 1630 [3300]                        | 1630 [3300]  |
| General     | Cylinders / Type                             |                  | 6 cyl / Inline / 4-stroke          |              |
|             | Aspiration / Charge Cooling                  |                  | Turbocharged / Air to Air          |              |
|             | Governing / Engine Management                |                  | Electronic Governor / ECU / CANBus |              |
|             | Bore / Stroke                                | mm [in.]         | 144 / 165 [5.67 / 6.5]             |              |
|             | Cubic Capacity                               | litres [cu.in.]  | 16.12 [983.7]                      |              |
|             | BMEP   | kPa [psi]        | 2084 [302]                         | 2336 [339]   |
| Fuel        | Fuel Consumption at 100% Power               | litres/h [gal/h] | 121.7 [32.2]                       | 139.1 [36.7] |
|             | Fuel Consumption at 75% Power                | litres/h [gal/h] | 89.5 [23.6]                        | 100.8 [26.6] |
|             | Fuel Consumption at 50% Power                | litres/h [gal/h] | 60.3 [15.9]                        | 67.9 [17.9]  |
|             | Total fuel flow                              | litres/h [gal/h] | 190 [50]                           |              |
|             | Standard Fuel Tank Capacity                  | litres [gal]     | 755 [199]                          |              |
| Air         | Engine Air Flow                              | m³/s [cfm]       | 0.733 [1554]                       | 0.763 [1617] |
|             | Maximum Air Intake Restriction (used filter) | kPa [inWG]       | 5 [20]                             |              |
| Exhaust     | Exhaust Gas Flow                             | m³/s [cfm]       | 1.677 [3553]                       | 1.84 [3899]  |
|             | Exhaust Gas Temperature                      | °C [°F]          | 436 [817]                          | 479 [894]    |
|             | Maximum Exhaust Back Pressure                | kPa [inWG]       | 10 [40]                            |              |
|             | Typical Exhaust Pipe Diameter                | mm [in.]         | 200 [8]                            |              |
| Cooling     | Radiator Cooling Air Flow                    | m³/s [cfm]       | 10.28 [21782]                      |              |
|             | Max Restriction to Cooling Air Flow          | Pa [inWG]        | 280 [1.1]                          |              |
|             | Max Radiator Air-On Temperature              | °C [°F]          | 55 [131]                           |              |
|             | Maximum Coolant Temperature                  | °C [°F]          | 103 [217]                          |              |
|             | Coolant Capacity - Engine Only               | litres [gal]     | 33 [8.7]                           |              |
|             | Total Coolant Capacity                       | litres [gal]     | 93 [24.6]                          |              |
| Oil         | Total Oil Capacity incl Filters              | litres [gal]     | 48 [12.7]                          |              |
|             | Typical Oil Pressure at Rated Speed          | kPa [psi]        | 300-650                            |              |
|             | Typical Oil Consumption (>250hrs Operation)  | litres/h [pt/h]  | 0.33 [0.69]                        |              |
| Thermal     | Heat Rejection to Engine Cooling Water       | kW [btu/min]     | 212 [12067]                        | 231 [13149]  |
|             | Heat Rejection to Charge Cooler              | kW [btu/min]     | 120 [6830]                         | 146 [8310]   |
|             | Heat Radiated From Engine (Typical)          | kW [btu/min]     | 22 [1252]                          | 24 [1366]    |
| Elec        | Electrical System Voltage                    | V                | 24                                 |              |
|             | Battery Type                                 |                  | 2 (series) 656                     |              |
|             | Battery Capacity SAE CCA                     | A                | 810                                |              |

**ALTERNATOR**
**CGT STAMFORD HCI 544**

|              | SI Units                      | [US Units] | PRIME                                     | STANDBY   |
|--------------|-------------------------------|------------|---|-----------|
| General Data | Manufacturer                  |            | Cummins Generator Technologies - STAMFORD |           |
|              | Model (may vary with voltage) |            | HCI 544 D                                 | HCI 544 D |
|              | Operating Temperature         | °C [°F]    | 40 [104]                                  | 27 [81]   |
|              | Coupling / No. of Bearings    |            | Direct / Single Bearing                   |           |
|              | Phase / Poles / Winding Type  |            | 3-Phase / 4-Pole / Winding 311            |           |
|              | Power Factor                  |            | Cos Φ = 0.8                               |           |
|              | Excitation                    |            | Self excited                              |           |
|              | Insulation System             |            | Class H                                   |           |
|              | AVR Type                      |            | AS 440                                    |           |
|              | Voltage Regulation            |            | ± 1.0%                                    |           |

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**STANDARD CONTROL SYSTEM****BC 7310 Digital Auto Start**

The standard control system for this model is **BC 7310** (photo), based on the Deep Sea Electronics DSE7310 Digital Auto Start controller.

This provides for the manual and automatic remote start of the generator, together with full CANBus implementation for the control and protection of the engine via the ECU. LCD digital display of :

- Coolant temperature with high temperature alarm and shutdown
- Oil pressure with low pressure alarm and shutdown
- Oil temperature, engine operating hours, battery charge volts and amps
- Volts, with Under/Over Volts protection
- Amps, with Over Current protection
- Frequency, kW, kVA, Power Factor

Also featuring :

- Full RS485 Telemetry implementation
- Automatic cool-down timer function
- Emergency Stop button
- Ample auxiliary inputs/outputs for optional features
- Optional (shown) - battery charger and door mounted illuminated switch.

**CONTROL SYSTEM OPTIONS**

The **BC 7320** control system (just the DSE7320 module is shown here) has an identical feature set to the BC 7310 but with the addition of full AMF functionality with integrated mains monitoring.



Finally, **BC 8610 & BC 8620** control systems provide the same features as BC 7310 & BC 7320 respectively, plus :

- BC 8610 - Set-to-Set Synchronisation
- BC 8620 - Single Set-to-Mains Supply Synchronisation with integrated mains monitoring

For Multi Set-to-Mains synchronisation, each set requires BC 8610 with the addition of one mains monitoring panel **BC 8660** (not illustrated). See the Synchronisation Guidelines for further details.

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**OPTIONAL ACOUSTIC ENCLOSURE**
**Canopy 6**

The optional acoustic enclosure for this model is **Canopy 6R** (canopy 6 illustrated), suitable for operation in harsh outdoor environments whilst providing excellent security and acoustic performance. The steel canopy is of fully welded construction with a two-pack polyurethane egg-shell finish in RAL9001 white. The baseframe is finished in RAL9005 satin finish black.

Acoustically, the canopy is designed to meet the requirements of EU Legislation 2000/14/EC, achieved by extensive use of rock wool and perforated zinc steel lining, together with efficient management of cooling air. Exhaust noise is minimised by a unique high performance exhaust silencer, mounted within the baseframe.

A steel fuel tank with filler, gauge and accessory points, is integrated within the baseframe. Alternatively, a bund with separate fuel tank can be provided where this is required.

Other key features include :

- Side-opening doors with retainers for good service access
- Control access door with viewing window
- Separate breaker access door and cable way
- External service access panels
- Heavy duty locks on all doors for total security
- Weather cap on exhaust discharge
- Emergency Stop button relocated to canopy exterior
- Lifting and holding down points on baseframe
- Optional single roof lifting point.



| Dimensions mm [in] |   |              |   |              | Additional Weight<br>kg [lbs]* | Typical Sound Pressure Level<br>at Standby Power |                    | Fuel Tank Capacity<br>Litres [US gal] |              | Single Point Lift |
|--------------------|---|--------------|---|--------------|--------------------------------|--|--------------------|---------------------------------------|--------------|-------------------|
| L                  | x | W            | x | H            |                                | dB(A) at 1m [3ft]                                | dB(A) at 7m [23ft] | Integral                              | Bunded       |                   |
| 5500<br>[216]      | x | 1740<br>[68] | x | 2360<br>[92] | 2950<br>[6503]                 | 78   | 68                 | 1025<br>[270]                         | 895<br>[236] | Optional          |

\* Indicative weight of canopy *additional* to open set

Typical SPL is a mean level, measured in free field conditions, with no contributory background noise.

**KEY OPTIONS (Open Set)**
**Engine & Cooling :**

- Oil and coolants drains extended to edge of baseframe
- Manual lub oil drain pump
- Coolant heater
- Medium duty air cleaner
- Exhaust manifold guards

**Alternator :**

- Anti-condensation heater
- Quadrature droop kit
- Alternative AVR
- Thermistor probes and controls

**Fuel System :**

- Baseframe with integral bund and drop-in fuel tank
- Low fuel level switch (single point)
- Fuel level switch (four point)
- Manual fuel transfer pump
- Pumped/gravity fuel transfer system

**Exhaust System :**

- Residential silencer
- Critical silencer
- Flange/connection kit

Please refer to Broadcrown Sales Department for full details of these and other options

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