

Volvo TWD1643GE	CGT Stamford HCI 544	Generator Model:	<b>BCV 700-50 E2</b>
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50 Hz	3-Phase	Power Factor Cos $\Phi$ = 0.8	Emissions Certification Euro Stage 2
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RATINGS	PRIME POWER (PRP)		STANDBY POWER (LTP)		
	kVA	kWe	kVA	kWe	Amps
Voltage					
440/254	<b>635</b>	508	700	560	919
415/240	<b>635</b>	508	700	560	974
400/230	<b>635</b>	508	700	560	1010
380/220	<b>635</b>	508	700	560	1064

**Definition of Ratings & Reference Conditions**

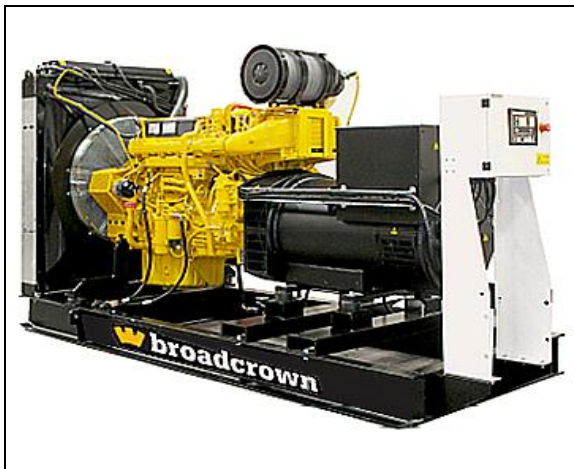
**Prime Power (PRP)** is the nominal output continuously available, where the average load (variable) does not exceed 70% of the prime power rating. 10% overload is available for a maximum of 1 hour in 12 hours of operation.

**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.

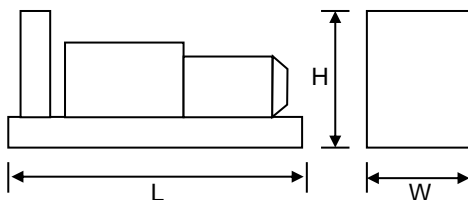
**Standard Reference Conditions:** air inlet temperature 25°C (77°F), barometric pressure 100kPa, [110m (361ft) altitude], 30% relative humidity.

**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) = 3870mm  
Width (W) = 1500mm  
Height (H) = 2120mm

Dry Weight (inc oil) = 42060kg  
Operating Weight = 5000kg

Overall dBA	Typical Open Generator Sound Pressure Level at 1m, Free Field (dB)							
	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
106	95	100	101	101	101	99	95	94

All specifications and design are subject to change without notice

**ENGINE & COOLING SYSTEM**
**VOLVO TWD1643GE**

	SI Units	PRIME	STANDBY	
Performance	Engine Speed	r/min	1500	
	Gross Power	kWm	553	613
	Fan Power	kWm	17	17
	Net Power	kWm	536	596
	Emissions Certification		EU Stage 2	
	Altitude Capability	m	1500	1500
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	144 / 165	
	Cubic Capacity	litres	16.12	
	BMEP	kPa	2744	3042
Fuel	Fuel Consumption at 100% Power	litres/h	129	143.7
	Fuel Consumption at 75% Power	litres/h	95.3	105.6
	Fuel Consumption at 50% Power	litres/h	63.5	70.1
	Total fuel flow	litres/h	190	
	Standard Fuel Tank Capacity	litres	540	
	Air	Engine Air Flow	m <sup>3</sup> /s	0.728
Maximum Air Intake Restriction (used filter)		kPa	5	
Exhaust	Exhaust Gas Flow	m <sup>3</sup> /s	1.693	1.863
	Exhaust Gas Temperature	°C	450	463
	Maximum Exhaust Back Pressure	kPa	10	
	Typical Exhaust Pipe Diameter	mm	200	
Cooling	Radiator Cooling Air Flow	m <sup>3</sup> /s	10.2	
	Max Restriction to Cooling Air Flow	Pa	250	
	Max Radiator Air-On Temperature	°C	50	
	Maximum Coolant Temperature	°C	103	
	Coolant Capacity - Engine Only	litres	33	
	Total Coolant Capacity	litres	128	
Oil	Total Oil Capacity incl Filters	litres	48	
	Typical Oil Pressure at Rated Speed	kPa	400	
	Typical Oil Consumption (>250hrs Operation)	litres/h	0.34	
Thermal	Heat Rejection to Engine Cooling Water	kW	208	226
	Heat Rejection to Charge Cooler	kW	106	119
	Heat Radiated From Engine (Typical)	kW	23	33
Elec	Electrical System Voltage	V	24	
	Battery Type		2 (Series) 623	
	Battery Capacity SAE CCA	A	865	

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

	SI Units	PRIME	STANDBY	
General Data	Manufacturer	Cummins Generator Technologies - STAMFORD		
	Model (may vary with voltage)	HCI 544 F	HCI 544 F	
	Operating Temperature	°C	40	27
	Coupling / No. of Bearings		Direct / Single Bearing	
	Phase / Poles / Winding Type		3-Phase / 4-Pole / Winding 311	
	Power Factor		Cos $\Phi$ = 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 7510 & BC 7520** control systems provide the same features as BC 7310 & BC 7320 respectively, plus :

- BC 7510 - Set-to-Set Synchronisation
- BC 7520 - Single Set-to-Mains Supply Synchronisation with integrated mains monitoring

For Multi Set-to-Mains synchronisation, each set requires BC 7510 with the addition of one mains monitoring panel **BC 7560** (not illustrated). See the Synchronisation Guidelines for further details.

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**OPTIONAL ACOUSTIC ENCLOSURE**
**Canopy 7R**

The optional acoustic enclosure for this model is **Canopy 7R** (canopy 7 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
- Single roof lifting point.



Dimensions (mm)			Additional Weight (kg) *	Typical Sound Pressure Level at 75% of Prime Power		Fuel Tank Capacity (Litres)		Single Point Lift
L	x	W x H		dB(A) at 1m	dB(A) at 7m	Integral	Bunded	
5900	x	2040 x 2480	3520	80	70	1430	1305	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 MECHANICAL 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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