



## DESIGN SPECIFICATIONS

- √High quality, reliable, long life and complete power unit.
- √compact design.
- √Easy start and maintenance possibility.
- √Every generating set is subject to a comprehensive test programme which includes full load testing and checking and proving of all control and safety shut down functions testing.
- √Fully engineered with a wide range of options and accessories: Electrical, mechanical, soundproof canopy and mobile units

**VW-516T6** powered by:

**TAD1650GE**

Diesel Genset Features		P.F=0.8 3Phase	
Generating Set Performance		60Hz	
Service		Prime Power	Standby Power
Rated output	kVA	516	568
Active power output*	kW	413	454
Rated Speed	r.p.m	1800	
Standard Voltage	V	380/220	
Voltage available	V	480/277-460/265 - 440/254-416/240-240/139-220/127-208/120	

Performance data refer to Standard Reference Conditions of ISO 8528: +25°C, 100m ALT, relative humidity 30%

Power reduction acc. to DIN ISO 3046 Standard values: Above 100m ALT approx. 1% per 100m. Above 25°C (77°F) approx. 4% per 10°C (50°F).

\*Considering cos phi=0.8

Prime Mover Performance		1800 r.p.m	
SERVICE		Prime Power	Standby Power
Rated output(with fan)	KW	439	482.9
Manufacturer		VOLVO	
Model		Direct	
4 stroke Diesel Engine - Injection type		TAD1650GE	
Aspiration type		turbocharged	
Cylinders, number and arrangement		6-L	
Bore*Stroke	mm	144X165	
Total Displacement	L	16.5:1	
Cooling system		Water	
Emission Certification		N/A	
Compression ratio		16.5:1	
Specific fuel consumption(P.R.P)	L/h	111.3	
Lubricating oil consumption	L/h	0.11	
Coolant capacity (engine only)	L	33	
Speed governor	Type	EMS 2.2	

① P.R.P. Prime Power - ISO 8528: PRIME POWER is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during a 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

② Max Standby power - ISO 3046 Fuel Stop power: Power available for use at variable loads for limited annual time (500h), within the following limits of maximum operating time: 100% load 25h per year, 90% load 200h per year. No overload available. Applicable in case of failure of the main in areas of reliable electrical network.

Synchronous Generator		1800 r.p.m	
Manufacturer		Guericke	
Model		GRK413KW	
Rated output	KW	413KW	
Poles	num	4	
Winding Connections (standard)		Star-serie	
Insulation	class	H	
Enclosure(according to IEC-34-5)		IP23	
Phases		3+N	
Voltage Regulaors		A.V.R. (SX460)	
Steady voltage precision		within±1.5% from no load to full loading with cosΦ=0.8-1.0	

\*Alternator used by GTL Gensets meet the requirements of following Standard: BS5000, VDE0530, NEMA MG1-32, IEC34, CA C22.2-100, AS1359

Generating Set Installation Data		1800 r.p.m	
<b>EXHAUST SYSTEM</b>			
Exhaust Gas Temperature after turbine at:	°C	468	
	°F	874.4	
Exhaust gas flow	L/s	1400.0	
Maximum allowed back pressure	Kpa	8	
<b>AIR REQUIREMENT</b>			
Air requirement for combustion at 100% load/ rated speed	L/s	583.3	
	ft3/min(CFM)	1236.0	
<b>ELECTRIC STARTING SYSTEM</b>			
Starter motor	kw	7	
Starter motor battery capacity(max)	Ah/A	80	
Auxiliary voltage	V	24	
<b>LUBRICATION SYSTEM</b>			
Lubricating oil consumption of diesel consumption (average)	L/h	0.05	

Standard Control Panel -EPmaster EPM6	Faceplate	Controller	Internal Structure
Protection, distribution, and automatic control panel, which starts the generator set when it detects a mains failure and stops it when the mains is restored with the control unit EPM6. It also starts and stops the group manually via a pushbutton or remote start-up by contact.			
<p>It has the following:</p> <ol style="list-style-type: none"> <li>Emergency stop push button</li> <li>Protections: <ul style="list-style-type: none"> <li>Circuit breaker (preheating resist.) 2P (16 A)</li> <li>Protection fuses for control module</li> </ul> </li> <li>Voltage &amp; speed trimmers</li> <li>Battery charger</li> <li>DC switch</li> <li>Working Lamp switch</li> <li>Distribution: Direct output of the circuit breaker</li> <li>EPM4 &amp; EPM6+ (cloud monitoring communication 4G) control and protection centre</li> </ol>			
<b>EPmaster EPM6</b>			

It has a digital LCD screen, which provides easy reading of the information regarding the Engine, Alternator, Mains and Charging. The controller meets all requirements for Auto Mains Failure (AMF) applications including remote communication and internet control, user configuration and complete genset monitoring and protection.

• READINGS that can be made:	•Protection of the engine and alternator, with the ALARMS activated:	•Other characteristics:
<p><b>Engine:</b> cooling temperature/oil pressure/revolution speed (rpm)/fuel level/battery voltage/battery alternator voltage/operating hours/number of start</p> <p><b>Alternator :</b> voltages between phases and between phases and neutral/frequency/phase sequence</p> <p><b>Mains:</b> frequency/voltages between phases and between phases and neutral (L1-N, L2-N, L3-N)/voltages between phases and (L1-L2, L2-L3, L1-L3)/phase sequence</p> <p><b>Load:</b> Current(Ia, Ib, Ic) and each phase and total active power(kw)/reactive power(kvar)/apparent power(kva)/power factor/accumulated generator power(kwh, kvah, kvah)/output percentage with load (%)</p>	<p><b>Engine:</b> low oil pressure/high coolant temperature/low and high battery Voltage./failure of the alternator to charge batteries/Low fuel level.</p> <p><b>Alternator:</b> low and high voltage/low and high frequency/overload /short-circuit/</p> <p><b>Mains:</b> over and under voltage and loss of phase</p> <p><b>Control of the set:</b></p> <p>STARTS and STOPS the set AUTOMATICALLY when mains failure is detected and when it is restored, respectively. It can also operate MANUALLY and Auto Transfer Switch control</p>	<p>Event log, real-time clock, scheduled start &amp; stop generator (can be set as start genset once a day/week/month whether with load or not). Maximum 99 event logs can be memorized.</p> <p>With maintenance function. Types (date or running time) can be optional and actions (never, warning, or shutdown) can be set when maintenance time out.</p> <p>Equipped with CANBUS port and can communicate with J1939 engine. Not only can monitor frequently-used data (such as water temperature, oil pressure, speed, fuel consumption and so on) of ECU machine, but also control starting up, shutdown, raising speed and speed droop via CANBUS port</p> <p>RS485 communication interface enables "Three remote" functions (remote control, remote measuring and remote communication) according to MODBUS protocol.</p> <p>Parameter setting: parameters can be modified and stored in internal FLASH memory and cannot be lost even in case of power outage; most of them can be adjusted using front panel of the controller and also can be modified using PC via USB or RS485 port.</p>

### Standard Configuration & Option

Item	Standard	Option
Engine	Standard air filter	Heavy duty air filter
	Standard fuel filter	Air intake shutoff valve chawin type
	Standard oil filter	Intake air heater
	Low coolant level sensor	Oil temperature sensor
	Exhaust gases compensator	Diesel-powered heater
	24V Electrical system	Engine water heater
	Radiator with blowing fan	
	Electronic governor	
	Sender WT	
	Sender OP	
Alternator	Hot components and radiator guards	
	Mobile components guards	
	Self-excited and Self-regulated	Air inlet filter
	IP23 protection degree	IP44/IP54/IP55
	Insulation H class	Space heater/anti-condensation heater
Electrical system		Environment protection
		Temperature detectors
		Parallel operation
	Battery isolator switch	Distribution board with sockets kit and power busbar
	3 poles circuit breaker	4 poles circuit breaker
Accessories	Door opening alarm	Adjustable ELCB ( Earth Fault )
	Battery charger 220-240V	Grounding rod
		ATS
	Water separator filter	Diverter valve kit for external fuel tank
	Low fuel level alarm	Automatic fuel refilling kit
	Trailer	
	Residential silencer	
	Electric engine fuel heater	
	No Expansion tank	Expansion tank for coolant water

### Generating Set transport data

#### Dimensions(Open Skid Type) With Standard Fuel Tank



Over All Size		
Length	mm	3600
Width	mm	1460
Height	mm	2115
Shipping Volume	m3	11.12
Dry Weight	Kg	4133
Fuel Tank Capacity	L	700

- √ The complete gen-set is mounted on whole on a heavy-duty fabricated, steel base frame.
- √ Antivibration pads are fixed between the engine/ alternator feet and the base frame ;
- √ Base frame design incorporates an integral fuel tank.
- √ The generating set can be lifted or carefully pushed / pulled by the base frame;
- √ Dial type fuel gauge and drain plug on the fuel tank;
- √ Forklift pockets within base frame (up to 500kVA);

#### Dimensions(Silent Type) With Standard Fuel Tank



Over All Size		
Length	mm	4500
Width	mm	1800
Height	mm	2340
Shipping Volume	m3	18.95
Dry Weight	Kg	6113
Fuel Tank Capacity	L	700

- √ All canopy parts are designed with modular principles.
- √ Without welding assembly
- √ All metal canopy parts are painted by electrostatic polyester powder paint.
- √ Doors on each side
- √ Thermally insulated engine exhaust system.
- √ Emergency stop push button outside of canopy.
- √ Easy maintenance and operation.

