

AV-680 - VOLVO - TWD 1643 GE

1.500 R.P.M. | 50 Hz

TECHNICAL SPECIFICATIONS



Model:

AV-680

Gen set with manual control panel.

Image for guidance purposes.

ENGINE	MAKE	MODEL
	VOLVO	TWD 1643 GE
ALTERNATOR	MODEL	
	MECC-ALTE ECO 40-1.5L/4	

(400 / 230 V)

CONTINUOUS POWER: (PRP "Prime Power" norma ISO 8528-1)	620 kVA
STAND-BY POWER: (LTP "Limited Time Power" norma ISO 8528-1)	680 kVA

Amperes in the different voltages:

VOLTAGE	HZ	PHASE	COS Ø	PRP KVA/KW	LTP KVA/KW	AMPERAGE
415/240	50	3	0,8	620,0/496,0	682,0/545,6	949,93
400/230	50	3	0,8	620,0/496,0	682,0/545,6	985,55
380/220	50	3	0,8	620,0/496,0	682,0/545,6	1037,42
240/139	50	3	0,8	620,0/496,0	682,0/545,6	1642,58
230/133	50	3	0,8	620,0/496,0	682,0/545,6	1714
220/127	50	3	0,8	620,0/496,0	682,0/545,6	1791,91

ELECTRO EXIM SRL

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21 Ialomicioarei St., sector 1, code 011277, BUCHAREST - ROMANIA
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ENGINE CHARACTERISTICS

MAKE	MODEL
VOLVO	TWD 1643 GE

GENERAL DATA

Power PRP (kWm)	536
Power LTP (kWm)	596
No. cylinders	6
Cylinder capacity (L)	16.12
Diameter per stroke (mm)	144 x 165
Compression ratio	16.50
Cooling system	LIQUID
Injection	COMMON RAIL
Suction	TURBO-INTERC.
Series regulator	ELECTRONIC
Fly wheel coupling	1-14"

Lubrication system

Oil capacity (L)	48
Oil consumption (%)	0.08
Min. alarm oil pressure (bar)	2.20

Ventilation system

Air cooling flow (m3/h)	46800
Combustion air flow (m3/h)	2640
Max. back pressure for fan (mbar)	0

Exhaust system

Exhaust gas flow (m3/h)	6096
Exhaust back pressure (mbar)	100
Temp. exhaust gases (°C)	450

Electrical system

VDC (V)	24
Battery (Ah)	2 x 180
Engine start-up (kW)	7

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ALTERNATOR CHARACTERISTICS

MODEL

MECC-ALTE ECO 40-1.5L/4 (400 / 230 V)

GENERAL DATA

Power PRP (kVA)	620
Power LTP (kVA)	682.00
Efficiency Alt. 3/4 %	95.10
Efficiency Alt. 4/4 %	94.90
No. Poles	4
Voltage regulator	DER-1
No. wires	12
Insulation	H
Xd (%)	250.00
X'd (%)	18.40
X	9.80
Degree of protection	IP21

GENERATOR SET CONSUMPTION

% POWER USED	LITRES/HOUR
50%	59
75%	89
100%	120

DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT AND NOISE

LENGTH	DIMENSIONS (MM)	
	WIDTH	HEIGHT
3500	1330	2506
FUEL TANK (LITRES)		WEIGHT (KG)
1023		-
NOISE LEVEL (dB (A))		

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INMESOL GENERATOR SET

GENERAL DESCRIPTION

The "INMESOL" generator set is an electrical energy generating machine which is used in places where there **is no mains supply** or when there is a MAINS failure.

The mobile elements, distribution belt, fan, etc., and those parts which reach high temperatures during operation, exhaust manifold, etc, include their corresponding protections, in compliance with the requirements of the Machinery Directive **2006/42**.

REGULATIONS

The machine holds the "CE" marking, and the corresponding Declaration of Conformity is issued with each of them, in which it specifies that the machine complies with **R.D 842/2002 Low Voltage Regulations and with the European Directives:**

- 2006/42 on Safety in Machinery.
- 2006/95/CE on Electrical Safety.
- 2004/108/CE on Electromagnetic Compatibility.
- 2005/88/CE on NOISE EMISSIONS by equipment for outdoor use (for SOUNDPROOF GENERATOR SETS).

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IN INDUSTRIAL RANGE / SCOPE OF SUPPLY

		
Engine/alternator monobloc directly connected and installed via silent blocks on a frame made from high tensile electro welded steel profiles that are treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Canopy of steel sheet sound proofed with fireproof rockwool, and treated with degreasing liquids and aplicated with a phosphate coat and epoxi paint.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fuel tank integrated in the base frame provided with fuel level jauge and fuel connections to the engine.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Engine with mechanical engine driven pusher fan.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Industrial silencer with -15 db(A) noise reduction and exhaust outlet tube.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Residencial silencer with -35 db(A) noise reduction with exhaust tube and protection cap.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Electric control cubicle with control module including protection and reading of electrical meassures engine instrumentation fuel level and engine running hours, etc.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Termal and magnetic circuit breaker and termal and magnetic circuit breaker and earth fault relay.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Battery charge alternator.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Starter battery complete with cables to the engine and pole protection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Installation prepared for earthing spike (spike not included).	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Security protection for heat and moving parts as well as live electrical components.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
External emergency stop push button.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Manual engine oil extraction pump.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Self excited and auto regulated alternator.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Integrated lifting hook for single point lifting with crane, gensets up to 450 kVA (Except in swing-out cover model)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4 Lifting points for gen sets from 450 kVA and bigger.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Preparate for extended fuel tank, fully bomded for leakage protection.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Base frame is prepared for trailer kit installation.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Standard electronic speed governor on engines from 220 kVA (LTP) and up.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Horizontal outlet for hot air	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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DSE 7310 MANUAL CONTROL PANEL

DSE 7310 MANUAL CONTROL PANEL

MANUAL CONTROL, PROTECTION AND DISTRIBUTION panel, assembled on the generator set in metal cabinet with a DSE 7310 engine protection unit.



Image for guidance purposes.

It has the following:

1 EMERGENCY STOP PUSHBUTTON.

2 PROTECTIONS:

- Magnetothermal Protection
- Earth Leak Protection
- Protection fuses for control module

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DSE 7310 MANUAL CONTROL PANEL

- 3 DSE 7310 CONTROL and PROTECTION CENTRE.** It has a digital LCD screen, which provides easy reading of the information regarding the ENGINE, ALTERNATOR and CHARGING.

READINGS that can be made:

ENGINE:

- Coolant temperature
- Oil pressure
- Turning speed (rpm)
- Fuel level
- Battery voltage
- Battery alternator voltage.
- Operating hours
- Number of start-ups

ALTERNATOR AND CHARGE:

- Voltages between phases and between phases and neutral.
- Intensities
- Frequency
- Active Power (kW)
- Reactive Power (kVAr)
- Apparent Power (kVA)
- Cos phi
- Active energy meter (kW-h)

CONTROL of the set:

- START AND STOP the set MANUALLY.
- Possibility of doing it AUTOMATICALLY via START ON SIGNAL.

PROTECTION of the engine and alternator, with the ALARMS activated:

ENGINE:

- Low oil pressure
- High coolant temperature
- Low and High battery Voltage
- Failure of the alternator to charge batteries
- Low fuel level.

ALTERNATOR:

- Low and High Voltage
- Low and High Frequency
- Overload due to Intensity (A)
- Short-circuit
- Negative Phase Sequence.
- Power Overload (KW-kVA)
- Load control:
 - 1.Connection and disconnection of artificial loads.
 - 2.Disconnection of non-essential loads

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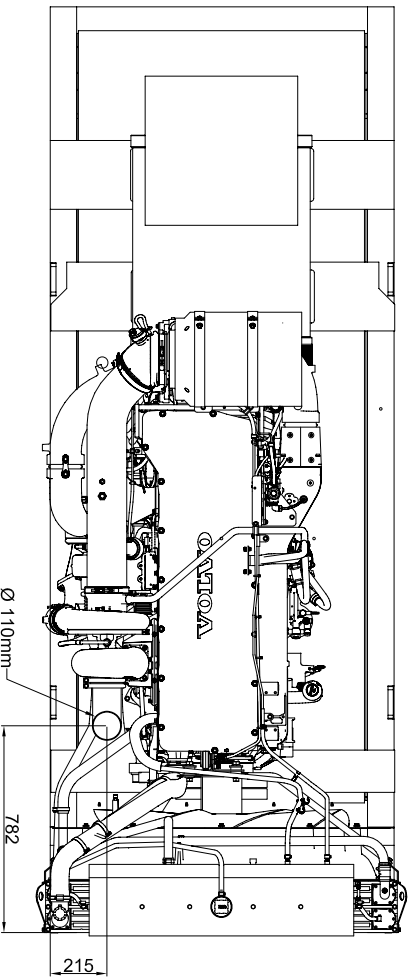
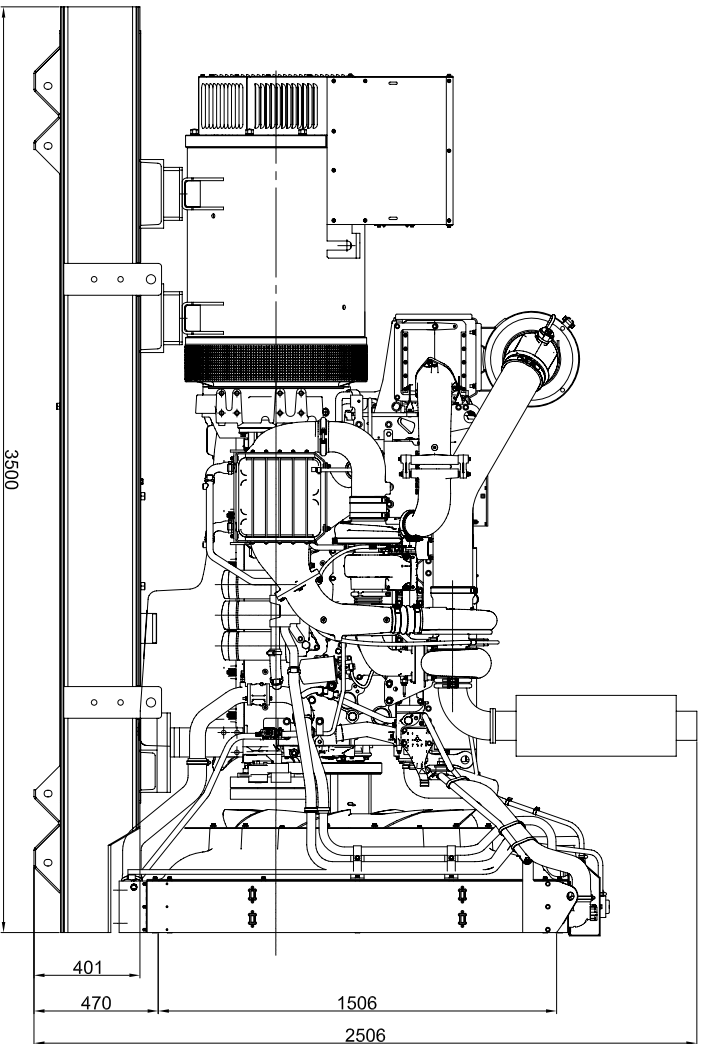
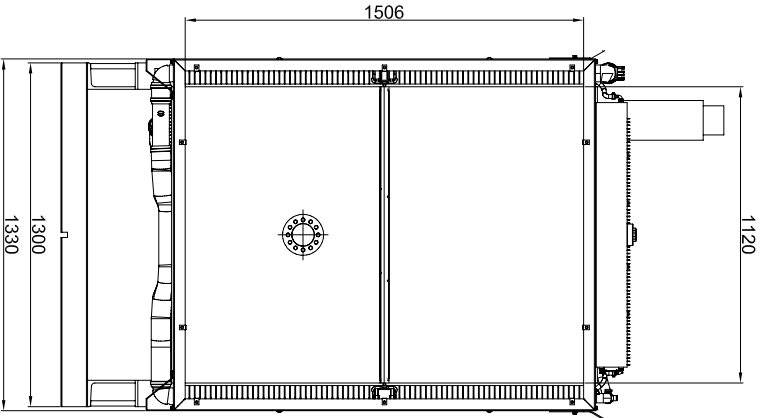
DSE 7310 MANUAL CONTROL PANEL

OTHER CHARACTERISTICS:

- The real-time clock provides an exact record of events
- Extensive number of configurable inputs and outputs.
- Configurable alarms and timers.
- USB connectivity
- Fully configurable via software and PC
- Modbus RTU
- Possibility of SMS text messages
- Communications Ethernet, RS 232 and RS 485
- Programmer Clock with multiple maintenance events which can be configured for the optimal operation of the engine. Weekly and/or monthly programming of up to 16 starts and stops per week.

For OPEN sets - Three-phase generators (single phase by request):

CONT . POW.	MAGNETO. PROTECTION (A)	EARTH LEAK PROTECTION	DISTRIBUTION
SET POWER	10 kVA	4P, 16A (B) 1P+N 16 A (C)	Mod. 16A, 300 mA 1 BASE CEE 3P+N+T 16A 1 BASE CEE 2P+T 16 A
	15 kVA	4P, 25A (B) 1P+N 16 A (C)	Mod. 25A, 300 mA 1 BASE CEE 3P+N+T 32A 1 BASE CEE 2P+T 16 A
	20 kVA	4P, 32A (B)	Mod. 32 A, 300 mA POWER TERMINALS
	30 kVA	4P, 50 A (B)	Mod. 63 A, 300 mA POWER TERMINALS
	40 kVA	4P, 63 A (B)	Mod. 63 A, 300 mA POWER TERMINALS
	50 kVA	4P, 80 A (B)	Electronic adjustable POWER TERMINALS
	60 kVA	4P, 100 A (B)	Electronic adjustable POWER TERMINALS
	75-80 kVA	4P, 125 A (B)	Electronic adjustable POWER TERMINALS
	100 kVA	3P, 160 A (B)	Electronic adjustable POWER TERMINALS
	125-170 kVA	3P, 250 A (B)	Electronic adjustable POWER TERMINALS
	180-275 kVA	3P, 400 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	300-430 kVA	3P, 630 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	450-550 kVA	3P, 800 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER
	570-665 kVA	3P, 1000 A (B)	Electronic adjustable OUTPUT DIRECTLY FROM THE CIRCUIT BREAKER



INMIESOL
MÁQUINAS ELÉCTRICAS

Las tolerancias o surtos de aparatos de origen, a de
fabricación, se han considerado en el presente
dibujo, permitiendo un margen de seguridad
suficiente para su uso en condiciones normales
de funcionamiento, a menos que se indique
lo contrario en el propio dibujo.

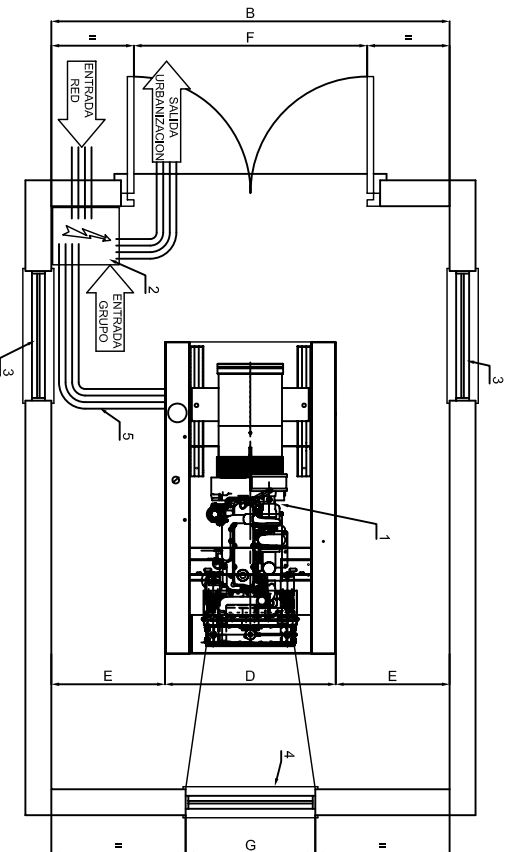
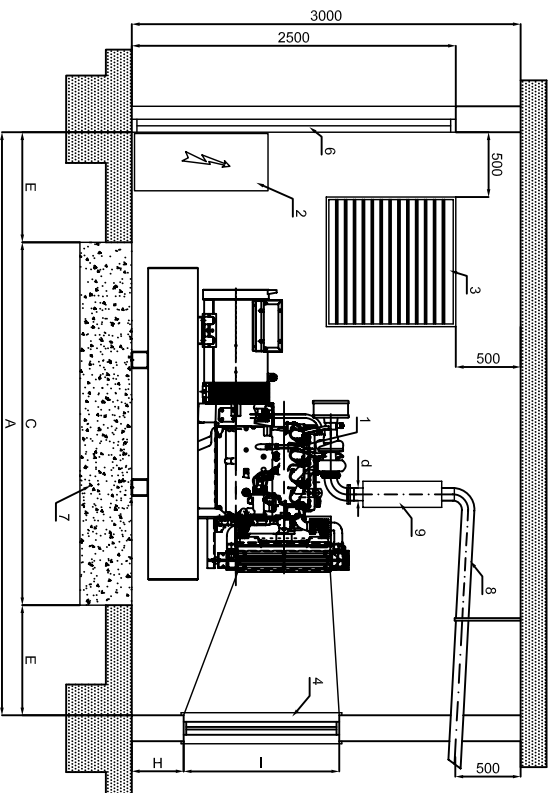
CODIGO
PESO
ESCALA

PROYECTO:

G.E. EST-STD 620 Kva VOLVO (TAD 1643 GE)

MODIFICADO	ALABEAR	MATERIAL
DIBUJADO	ALABEAR	TOLERANCIA GENERAL
COMPROBADO	ALABEAR	UDS.
DENOMINACION:	G.E. EST-STD 620 Kva VOLVO	EXPEDIENTE:
DIMENSIONES GENERALES		Nº PLANO
		MARCA

CAPACIDAD DE DEPOSITO = 1023 LTS



DIMENSIONES DE SALA SEGUN POTENCIA												
POTENCIA	A	B	C	D	E	F	G	H	I	d	PESO	SECCION HUECO ENTRADA AIRE
85 Kva	4050	2930	2050	930	1000	1430	800	450	800	80	1100	2x1,00 m2
105 Kva	4250	2930	2250	930	1000	1430	900	450	900	80	1320	2x1,00 m2
130 Kva	4250	3035	2250	1035	1000	1535	900	450	900	80	1460	2x1,00 m2
150 Kva	4500	3035	2500	1035	1000	1535	900	500	900	80	1620	2x2,00 m2
180 Kva	4500	3035	2500	1035	1000	1535	1000	500	1100	80	1608	2x2,00 m2
200 Kva	4500	3035	2500	1035	1000	1535	1000	500	1100	80	1780	2x2,00 m2
250 Kva	5000	3200	3000	1200	1000	1700	1200	500	1100	80	1950	2x2,50 m2
300 Kva	5000	3200	3000	1200	1000	1700	1300	650	1200	110	2770	2x2,50 m2
350 Kva	5000	3200	3000	1200	1000	1700	1400	650	1300	110	3295	2x3,00 m2
375 Kva	5000	3200	3000	1200	1000	1700	1400	650	1300	110	2770	2x3,00 m2
400 Kva	5000	3200	3000	1200	1000	1700	1500	650	1500	110	3295	2x3,00 m2
450 Kva	5490	3300	3490	1300	1000	1800	1500	725	1500	110	3295	2x3,00 m2
500 Kva	5490	3300	3490	1300	1000	1800	1700	725	1700	110	4030	2x3,50 m2
550 Kva	5490	3300	3490	1300	1000	1800	1700	725	1700	110	4240	2x3,50 m2
620 Kva	5500	3330	3500	1330	1000	1880	1900	725	1900	110	4440	2x4,00 m2

- NOMENCLATURA**
- 1.- GRUPO ELECTROGENO
 - 2.- CUADRO DE CONTROL
 - 3.- HUECO ENTRADA DEL AIRE
 - 4.- TUNEL DE EXPULSION DEL AIRE
 - 5.- BANDEJA PASACABLES
 - 6.- PUERTA DE ACCESO
 - 7.- BASE HORMIGON ARMADO H-175
 - 8.- TUBO DE ESCAPE
 - 9.- SILENCIADOR DE ESCAPE

EL Ø DE LA TUBERIA DE EXTENSION DEL ESCAPE PUEDE SER EL MISMO QUE EL DEL SILENCIADOR HASTA 5 m. PARA DISTANCAS MAYORES DE 5 m. DEBE AUMENTARSE EL Ø DE LA TUBERIA 10 mm POR CADA 10 m MAS DE DISTANCIA ENTRE EL GRUPO ELECTROGENO Y LA SALIDA EXTERIOR

CALCULO ESPESOR LOSA DE HORMIGON

$$D = \frac{W}{d \times B \times L}$$

D = altura bloque de hormigon
W = peso total grupo electrogeno
d = densidad del hormigon (2400 kg/m³)
B = anchura bloque de hormigon (m)
L = longitud bloque de hormigon (m)

h = 20/100 mm

		GRUPO ESTATICO ESTANDAR VOLVO	
PROYECTOR:	J.S.BELAR	MODIFICADO:	J.S.BELAR
REVISOR:	J.S.BELAR	DISEÑADO:	J.S.BELAR
ESCALA:		COMPROBADO:	ALSGILAND
		DENOMINACION:	GRUPOS EST-STD VOLVO
			DIMENSIONES DE SALA
		MATERIAL:	
		TOLERANCIA GENERAL:	
		UDS:	
		EXPEDIENTE:	
		Nº PLANO:	
		MARCA:	