

Model: AV-440 - INDUSTRIAL RANGE

400/230 V - THREE-PHASE | 1.500 R.P.M. | 50 Hz

Genset with manual control panel.



Image for guidance purposes.

PRP

CONTINUOUS POWER: 400 kVA

PRP "Prime Power" norma ISO 8528-1

LTP

STAND-BY POWER: 450 kVA

LTP "Limited Time Power" norma ISO 8528-1

ENGINE

MAKE	MODEL
VOLVO	TAD 1344 GE

ALTERNATOR

MAKE	MODEL
STAMFORD	HCI444F

VOLTAGE	HZ	PHASE	COS Ø	PRP kVA/kW	LTP kVA/kW	AMP. (LTP)
400/230	50	3	0,8	400,0/320,0	450,0/360,0	650,29

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ENGINE CHARACTERISTICS

MAKE	MODEL
VOLVO	TAD 1344 GE

General Data

Power PRP (kWm)	354
Power LTP (kWm)	389
No. cylinders	6
Cylinder capacity (L)	12.78
Diameter per stroke (mm)	131 x 158
Compression ratio	-
Cooling system	LIQUID
Injection	COMMON RAIL
Suction	TURBO-INTERC.
Series regulator	-
Fly wheel coupling	1 - 14

Lubrication system

Oil capacity (L)	36
Oil consumption (%)	0.05
Min. alarm oil pressure (bar)	2.20

Ventilation system

Air cooling flow (m ³ /h)	23400
Combustion air flow (m ³ /h)	1476
Max. back pressure for fan (mbar)	0

Exhaust system

Exhaust gas flow (m ³ /h)	3810
Exhaust back pressure (mbar)	100
Temp. exhaust gases (°C)	440

Electrical system

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

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ALTERNATOR CHARACTERISTICS

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STAMFORD	HCI444F

General Data

Power PRP (kVA)	400
Power LTP (kVA)	450.00
Efficiency Alt. 3/4 %	94.40
Efficiency Alt. 4/4 %	93.40
No. Poles	4
Voltage regulator	AS440
No. wires	12
Insulation	H
Xd (%)	2.45
X'd (%)	0.16
X	0.12
Degree of protection	IP23

GENERATOR SET CONSUMPTION

% POWER USED	LITRES/HOUR
50%	43
75%	63
100%	83

DIMENSIONS, CAPACITIES, APPROXIMATE WEIGHT

Dimensions (mm)		
LENGTH	WIDTH	HEIGHT
3000	1200	2141

FUEL TANK (LITRES)	WEIGHT (KG)
470	

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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**.



INMESOL S.L company with ISO 9001 quality certification system for the:

Design, manufacture, marketing and technical assistance of power GENSETS, lighting towers, welding GENSETS, tractor with PTO GENSET and hybrid generation systems.

Europe regulations:

Inmesol power GENSET sets comply with European legislation and were given the CE marking which includes the following directives:

- 2006/42/EC on machinery safety.
- 2005/88/EC on NOISE EMISSIONS by equipment for outdoor use (amends the 2000/14/EC).
- 2014/30/UE on Electromagnetic Compatibility.
- 2014/35/UE on electrical safety, electrical equipment designed to be used within certain voltage limits

International regulations:

Upon request, INMESOL can supply equipment that complies with the International Legislation and Regulations:

- "Technical Regulation on Safety of Machinery & Equipment" No. 753, repealing GOST R standards for exports to Russia.
- Resolution n° 90708 dated August 30th 2013 "Reglamento Técnico de Instalaciones Eléctricas RETIE" issued by the Ministry of Mining and Energy, Section 20.21 Engines and power generators, for exports to Colombia.

Information:

The power ratings are for reference to environmental conditions: barometric pressure 100 kPa, 25°C and 30% relative humidity. These are defined by ISO 8528 and ISO 3046.

PrimePower (PRP) "Main Service" is applicable for power GENSETS that function as main electric power source. It may be overloaded by 10% in limited time points, maximum once every 12 hours.

StandbyPower (LTP) "Emergency Service" applies to power GENSETS that run during Electrical Grid failure. This power may NOT BE OVERLOADED.

Nevertheless, to obtain long engine life, it is recommended that the active power average load (kW) connected to the power GENSET set in any period of 24 hours of operation does not exceed the following values:

- In Main Service 70% of the PRP power.
- In Emergency Service during Electrical Grid failure 80% of the LTP power.

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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 applied with a phosphate coat and polyester (QUALICOAT) paint.

Fuel tank integrated in the base frame provided with fuel level gauge and fuel connections to the engine.

Engine with mechanical engine driven pusher fan.

Industrial silencer with -15 db(A) noise reduction and exhaust outlet tube.

Electric control cubicle with control module including protection and reading of electrical measures engine instrumentation fuel level and engine running hours, etc. remote start possibility

Thermal and magnetic circuit breaker and thermal and magnetic circuit breaker and earth fault relay.

Battery charge alternator.

Starter battery complete with cables to the engine and pole protection.

Installation prepared for earthing spike (spike not included).

Security protection for heat and moving parts as well as live electrical components.

External emergency stop push button.

Self excited and auto regulated alternator.

4 Lifting points for gen sets from 450 kVA and bigger.

Base frame is prepared for trailer kit installation.

Standard electronic speed governor on engines from 220 kVA (LTP) and up.

OPTIONS

Battery charger

Coolant preheating

AMF/ATS panel to turn a manual gen set to automatic version

Residential silencer

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DSE 7310 MKII MANUAL CONTROL PANEL

MANUAL CONTROL, PROTECTION AND DISTRIBUTION panel, assembled on the generator set in metal cabinet with a DSE 7310 MKII 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 MKII MANUAL CONTROL PANEL

3. DSE 7310 MKII PROTECTION CONTROL MODULE.

LCD SCREEN:

It has a digital LCD screen, which provides easy reading of the information regarding the ENGINE, ALTERNATOR and CHARGING.

ENGINE:	ALTERNATOR AND CHARGE:
Coolant temperature	Voltages between phases and between phases and neutral.
Oil pressure	Intensities
Turning speed (rpm)	Frequency
Fuel level	Active Power (kW)
Battery voltage	Reactive Power (kVAr)
Battery alternator voltage.	Apparent Power (kVA)
Operating hours	Cos phi
Number of start-ups	Active energy meter (kW-h)

CONTROL OF THE SET:

START AND STOP the set MANUALLY.

Possibility of doing it AUTOMATICALLY via START ON SIGNAL.

Dual Mutual Standby

PROTECTION OF THE ENGINE AND ALTERNATOR, WITH THE ALARMS ACTIVATED:

ENGINE:	ALTERNATOR:
Low oil pressure	Low and High Voltage
High coolant temperature	Low and High Frequency
Low and High battery Voltage	Overload due to Intensity (A)
Failure of the alternator to charge batteries	Short-circuit
Low fuel level.	Negative Phase Sequence.
	Power Overload (KW-kVA)
	Load control:
	<ul style="list-style-type: none"> ▪ Connection and disconnection of artificial loads. ▪ Disconnection of non-essential loads

OTHER CHARACTERISTICS:

The real-time clock provides an exact record of events	Possibility of SMS text messages
Extensive number of configurable inputs and outputs.	Ethernet communication and simultaneous use of RS232 and RS 485 ports
Configurable alarms and timers.	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.
USB connectivity	Enhanced PLC functionality.
Fully configurable via software and PC	Data logging function
Modbus RTU	The fuel consumption may be monitored on the screen and SMS messages with alarms and reports may be sent.

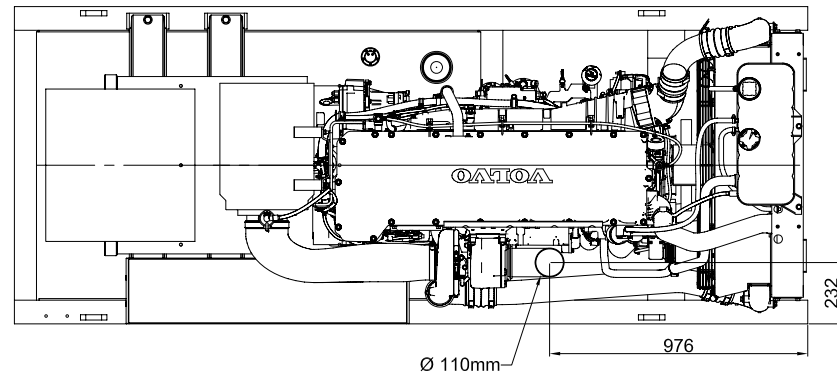
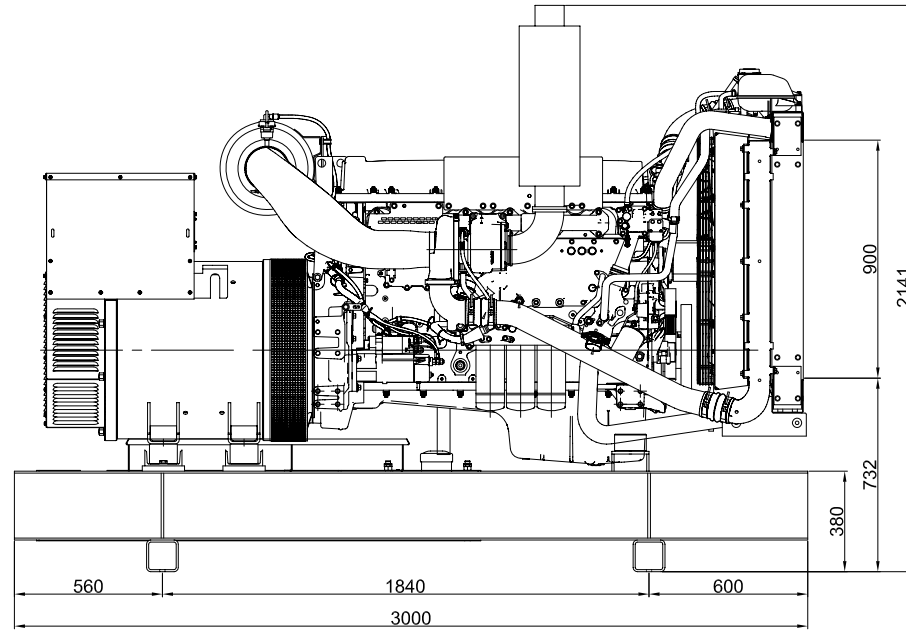
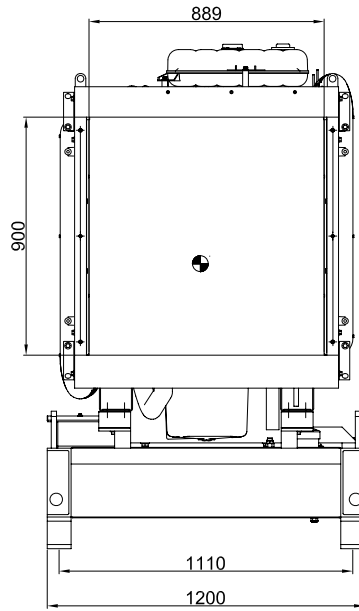
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DSE 7310 MKII MANUAL CONTROL PANEL

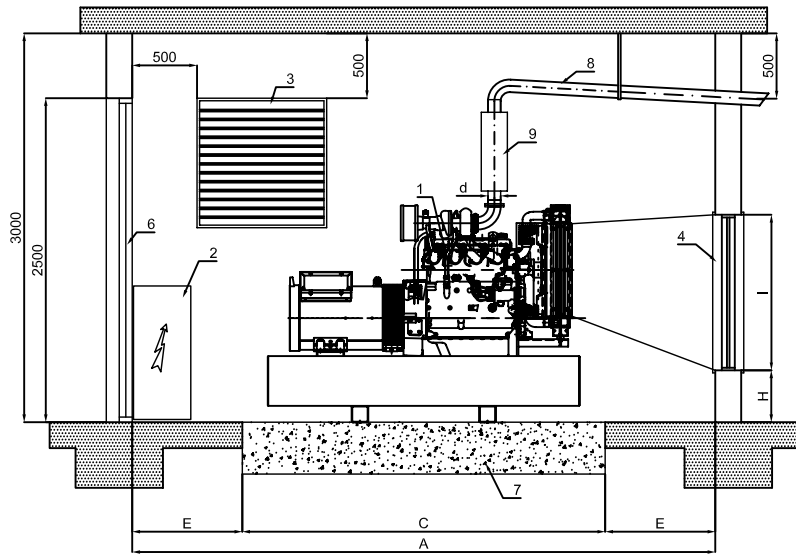
4. PROTECTIONS

MAGNETO. PROTECTION (A)	EARTH LEAK PROTECTION	DISTRIBUTION
630A, 3P	Electronic, adjustable	Direct from circuit breaker



CAPACIDAD DE DEPOSITO = 450 LTS

<p>Las tolerancias a cumplir en espesores de chapa, e de bravas perforadas, ranuras, resacas, resacas de aluminio, tubo, perfiles, etc... así como cualquier elemento comercial, serán los estándar de dicho elemento. Estas tolerancias se tratarán con la misma importancia que las generales y específicas de cada plano.</p>		<p>PROYECTO: G.E. EST-STD 400 Kva VOLVO (TAD 1344 GE)</p>			
CODIGO		MODIFICADO		MATERIAL	
PESO		DIBUJADO	J.G.BEJAR	17-Oct-2011	TOLERANCIA GENERAL
ESCALA		COMPROBADO	J.L.SOLANO	17-Oct-2011	UDS.
		DENOMINACION: G.E. EST-STD 400 Kva VOLVO DIMENSIONES GENERALES		EXPEDIENTE:	Nº PLANO MARCA

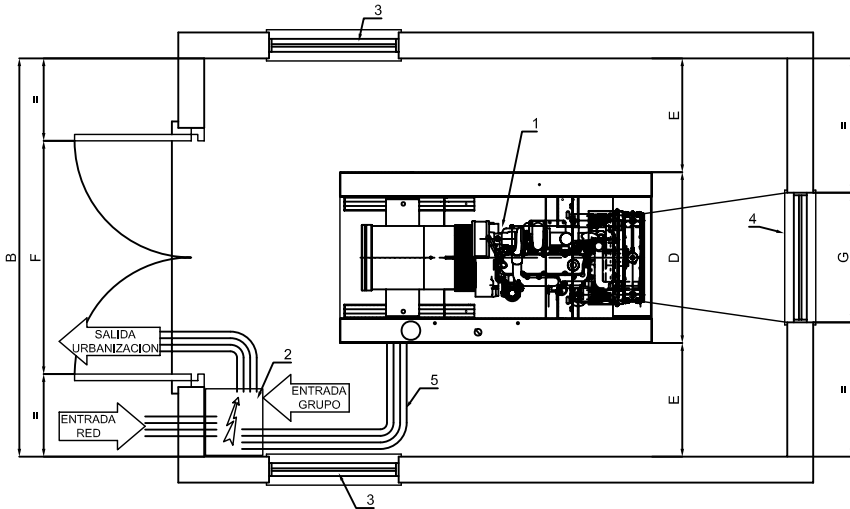


DIMENSIONES DE SALA SEGUN POTENCIA												
POTENCIA	A	B	C	D	E	F	G	H	I	d	PESO	SECCION HUECO ENTRADA AIRE
85 Kva	4050	2930	2050	930	1000	1430	800	450	800	80	1100	2x1.00 m2
105 Kva	4250	2930	2250	930	1000	1430	900	450	900	80	1320	2x1.00 m2
130 Kva	4250	3035	2250	1035	1000	1535	900	450	900	80	1460	2x1.00 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

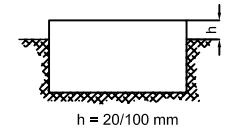
EL Ø DE LA TUBERIA DE EXTENSION DEL ESCAPE PUEDE SER EL MISMO QUE EL DEL SILENCIADOR HASTA 5 m. PARA DISTANCIAS MAYORES DE 5 m, DEBE AUMENTARSE EL Ø DE LA TUBERIA 10 mm POR CADA 10 m MAS DE DISTANCIA ENTRE EL GRUPO ELECTROGENO Y LA SALIDA EXTERIOR



CALCULO ESPESOR LOSA DE HORMIGON

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

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



<p>Las tolerancias a cumplir en espesores de chapa, y de barras perforadas y/o resacas, medidas de platinos, tubos, perfiles, etc... así como cualquier elemento conectado, serán el estándar de dicho elemento. Estas tolerancias se tratarán con la misma importancia que los generados y especificados de cada plano.</p>	PROYECTO: GRUPO ESTATICO ESTANDAR VOLVO			
	MODIFICADO	J.G.BEJAR	07-Sep-2011	MATERIAL
	DIBUJADO	J.G.BEJAR	03-Mar-2006	TOLERANCIA GENERAL
	COMPROBADO	J.L.SOLANO	07-Sep-2011	UDS.
CODIGO	DENOMINACION: GRUPOS EST-STD VOLVO			EXPEDIENTE:
PESO	DIMENSIONES DE SALA			Nº PLANO
ESCALA				MARCA