

ژنراتور : Mecc alte

موتور دیزل : Perkins

Standby		Prime		
KVA	KW	KVA	KW	
385	-	350	280	دیزل ژنراتور



2200 Series 2206A-E13TAG2 Diesel Engine – Electropak

349 kWm at 1500 rpm
381 kWm at 1800 rpm

The 2200 Series engine has been developed using the latest engineering techniques and builds on the strengths of the already very successful 2000 Series family and addresses today's uncompromising demands within the power generation industry. Developed from a proven heavy-duty industrial base, these products offer superior performance and reliability.

The 2206A-E13TAG range are 6 cylinder, turbocharged air-to-air charge cooled diesel engines. It's premium features provide exceptional power to weight ratio resulting in exceptional fuel consumption.

The overall performance and reliability characteristics make this the prime choice for today's power generation industry.

Economic power

- Mechanically operated unit fuel injectors with electronic control combined with carefully matched turbocharging, give excellent fuel atomisation and combustion with optimum economy
- Low emissions result from electronic control of fuel injected

Reliable power

- Developed and tested using the latest engineering techniques and finite element analysis for high reliability, low oil usage and low wear rates
- High compression ratios ensure clean rapid starting in all conditions
- Perkins global product support is designed to enhance the customer experience of owning a Perkins powered machine. We deliver this through the quality of our distribution network, extensive global coverage and a range of Perkins supported OEM partnership options. So whether you are an end-user or an equipment manufacturer our engine expertise is essential to your success

Compact, clean and efficient power

- Exceptional power to weight ratio and compact size give optimum power density for ease of installation and more cost effective transportation
- Designed to provide excellent service access for ease of maintenance



Product support

- Perkins actively pursues product support excellence by ensuring our distribution network invest in their territory – strengthening relationships and providing more value to you, our customer
- Through an experienced global network of distributors and dealers, fully trained engine experts deliver total service support around the clock, 365 days a year. They have a comprehensive suite of web based tools at their fingertips covering technical information, parts identification and ordering systems, all dedicated to maximising the productivity of your engine
- Throughout the entire life of a Perkins engine, we provide access to genuine OE specification parts and service. We give 100% reassurance that you receive the very best in terms of quality for lowest possible cost .. wherever your Perkins powered machine is operating in the world

This engine does not comply to Harmonized International Regulated Emissions Limits

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	bhp	kWm	bhp
1500	Prime Power	350	280	324	434	305	409
	Standby Power	400	320	368	493	349	469
1800	Baseload Power	400	320	373	500	349	468
	Standby Power	438	350	407	546	381	511

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS 5514/1, DIN 6271. Derating may be required for conditions outside these; consult Perkins Engines Company Limited.

Generator powers are typical and are based on an average alternator efficiency and a power factor (cos. θ) of 0.8. Fuel specification: BS 2869: Part 2 1998 Class A2 or BSEN590 or ASTM D975 Class 1D and 2D. Lubricating oil: 15W40 to API CI4.

Rating Definitions

Prime Power: Variable load. Unlimited hours usage with an average load factor of 70% of the published prime power rating over each 24 hour period. A 10% overload is available for 1 hour in every 12 hours of operation. **Standby Power:** Variable load. Limited to 500 hours annual usage up to 300 hours of which may be continuous running. No overload is permitted.

Photographs are for illustrative purposes only and may not reflect final specification.

All information in this document is substantially correct at time of printing and may be altered subsequently.
Publication No. PN1880/09/12 Produced in England ©2012 Perkins Engines Company Limited

Perkins®

THE HEART OF EVERY GREAT MACHINE

2200 Series 2206A-E13TAG2 Diesel Engine – Electropak

349 kWm at 1500 rpm

381 kWm at 1800 rpm



Standard Electropak specification

Air inlet

- Mounted air filter

Fuel system

- Mechanically actuated electronically controlled unit fuel injectors with full authority electronic control
- Governing to ISO 8528-5 class G2 with isochronous capability
- Replaceable 'Ecoplus' fuel filter elements with primary filter/water separator
- Fuel cooler

Lubrication system

- Wet sump with filler and dipstick
- Full-flow replaceable 'Ecoplus' filter
- Oil cooler integral with filter header

Cooling system

- Gear-driven circulating pump
- Mounted belt-driven pusher fan
- Radiator incorporating air-to-air charge cooler, (supplied loose)
- System designed for ambients up to 50°C

Electrical equipment

- 24 volt starter motor and 24 volt 70 amp alternator with DC output
- ECM mounted on engine with wiring looms and sensors
- 3 level engine protection system

Flywheel and housing

- High inertia flywheel to SAE J620 size 14
- SAE 1 flywheel housing

Mountings

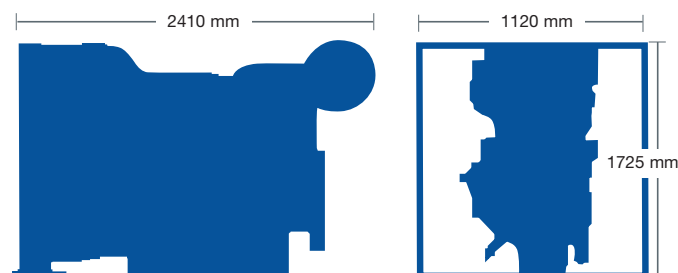
- Front engine mounting bracket

Literature

- User's Handbook and Parts Manual

Optional equipment

- 110 volt/240 volt immersion heater
- Additional speed sensor
- Temperature and pressure sensors for gauges
- Air filter rain hood
- Twin starters/facility for second starter
- Tool kit



Fuel Consumption (based on net power)				
Engine Speed	1500 rev/min		1800 rev/min	
	g/kWh	l/hr	g/kWh	l/hr
Standby Power	195	80	193	87
110% of Prime Power	195	77	195	88
100% of Prime Power	196	71	196	81
75% of Prime Power	198	54	199	62
50% of Prime Power	203	37	205	43

General data

Number of cylinders	6
Cylinder arrangement	Vertical in-line
Cycle.....	4 stroke
Induction system	Turbocharged and air-to-air charge cooled
Combustion system.....	Direct injection
Cooling system.....	Water-cooled
Bore and stroke.....	130 x 157 mm
Displacement	12.5 litres
Compression ratio	16.3:1
Direction of rotation	Anti-clockwise, viewed on flywheel
Total lubrication system capacity	40 litres
Total coolant capacity.....	51,4 litres
Total dry weight.....	1478 kg
Dimensions – Length	2410 mm
Width	1120 mm
Height	1725 mm

Final weight and dimensions will depend on completed specification

Photographs are for illustrative purposes only and may not reflect final specification.

All information in this document is substantially correct at time of printing and may be altered subsequently.
Publication No. PN1880/09/12 Produced in England
©2012 Perkins Engines Company Limited

Perkins Engines Company Limited

Peterborough PE1 5FQ

United Kingdom

Telephone +44 (0)1733 583000

Fax +44 (0)1733 582240

www.perkins.com



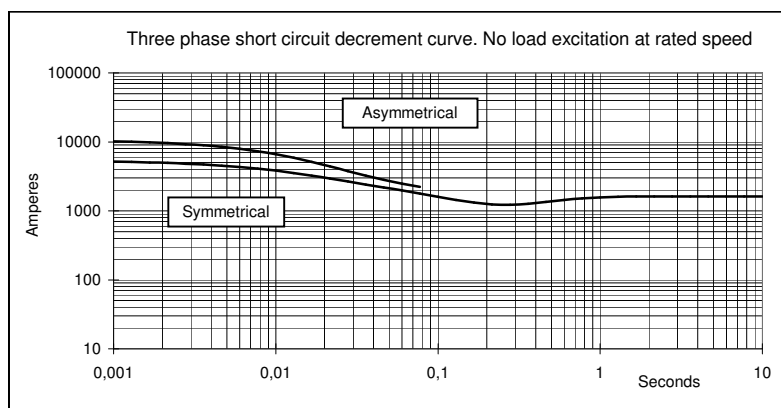
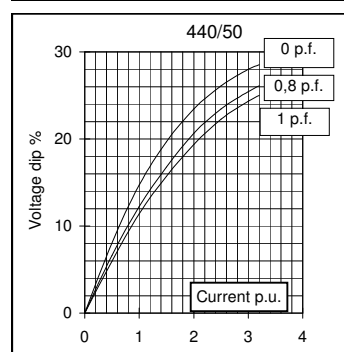
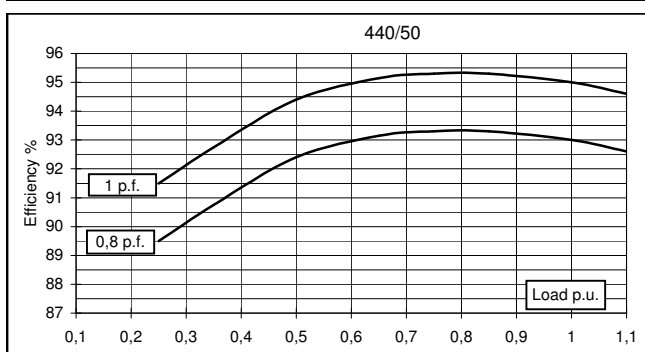
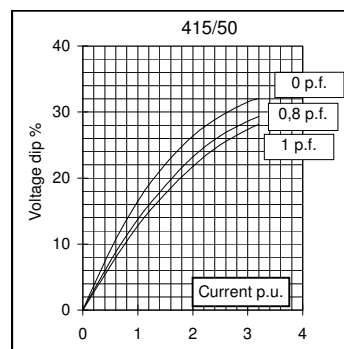
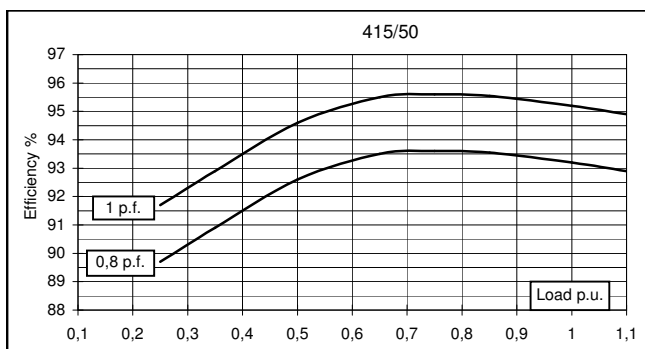
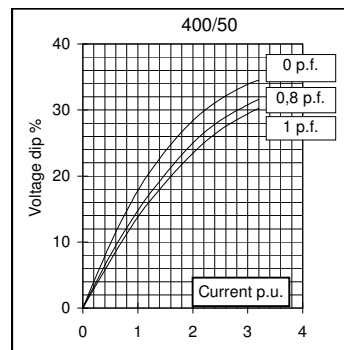
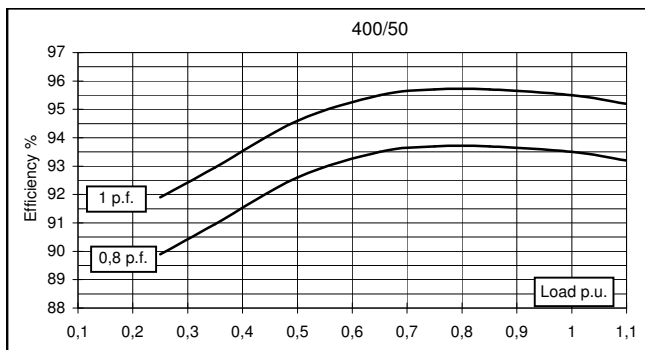
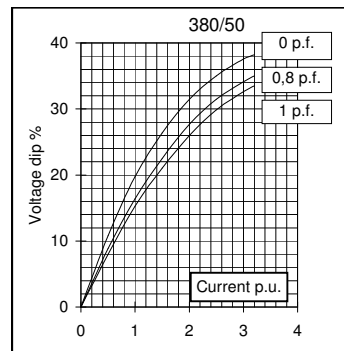
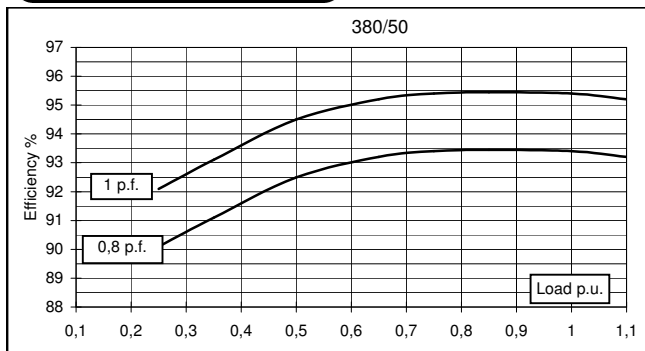
THE HEART OF EVERY GREAT MACHINE

Electrical Characteristics										
Frequency		Hz	50				60			
Voltage (series star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	350	350	350	340	380	420	420	420
		kW	280	280	280	272	304	336	336	336
Rated power class F		kVA	320	320	320	310	350	385	385	385
		kW	256	256	256	248	280	308	308	308
Regulation with DSR			±1 % with any power factor and speed variations between -5% +30%							
Insulation class			H							
Execution			Brushless							
Stator winding			12 ends							
Rotor			with damping cage							
Efficiencies class H	4/4	%	93,4	93,5	93,2	93	93,6	94,1	94,2	94,3
(see graph. for details)	3/4	%	93,4	93,7	93,6	93,3	93,9	94,1	94,3	94,5
	2/4	%	92,5	92,6	92,6	92,4	93	93,1	93,2	93,3
	1/4	%	90,1	89,9	89,7	89,5	90,6	90,6	90,6	90,4
Reactances (f. l.cl. F)	Xd	%	238,2	215	199,7	172,6	260,2	255,9	234,1	215
	Xd'	%	19,1	17,2	16,0	13,8	20,8	20,5	18,7	17,2
	Xd''	%	10,4	9,4	8,7	7,5	11,4	11,2	10,2	9,4
	Xq	%	139,6	126	117,1	101,2	152,5	150,0	137,2	126
	Xq'	%	139,6	126	117,1	101,2	152,5	150,0	137,2	126
	Xq''	%	22,3	20,1	18,7	16,1	24,3	23,9	21,9	20,1
	X ₂	%	17,4	15,7	14,6	12,6	19,0	18,7	17,1	15,7
	X ₀	%	2,4	2,2	2,0	1,8	2,7	2,6	2,4	2,2
Short Circuit Ratio	Kcc		0,37	0,42	0,57	0,92	0,24	0,32	0,37	0,42
Time Constants	Td'	sec.	0,099							
	Td''	sec.	0,0127							
	Tdo'	sec.	1,50							
	Tα	sec.	0,013							
Short Circuit Current Capacity		%	>300				>350			
Excitation at no load	Amp.		0,55	0,72	0,95	1,2	0,35	0,35	0,6	0,7
Excitation at full load	Amp.		3,5	3,9	4,1	4,3	3,3	3,5	3,7	3,9
Overload (long-term)	%	1 hour in a 6 hours period 110% rated load								
Overload per 20 sec.	%	300								
Stator Winding Resistance (20 °C)	Ω	0,0042								
Rotor Winding Resistance (20 °C)	Ω	6,780								
Exciter Resistance (20 °C)	Ω	Rotor : 0,685				Stator : 15,28				
Heat dissipation at f.l.cl.H	W	19786	19465	20429	20473	20786	21067	20688	20310	
Telephone Interference		THF < 2%					TIF < 40			
Radio interference		EN61000-6-3, EN61000-6-2. For others standards apply to factory								
Waveform Distors.(THD) at f. load	LL/LN %	3,1 / 2,9								
Waveform Distors.(THD) at no load	LL/LN %	2,7 / 2,7								
Mechanical characteristics										
Protection		IP 21 (other protection on request)								
DE bearing		6318.2RS								
NDE bearing		6314.2RS								
Weight of wound stator assembly	kg	347								
Weight of wound rotor assembly	kg	230								
Weight of complete generator	kg	905								
Maximun overspeed	rpm	2250								
Unbalanced magnetic pull at f.l.cl.F	kN/mm	6,2								
Cooling air requirement	m³/min	32					39			
Inertia Constant (H)	sec.	0,123					0,147			
Noise level at 1m/7m	dB(A)	82 / 69					86 / 73			

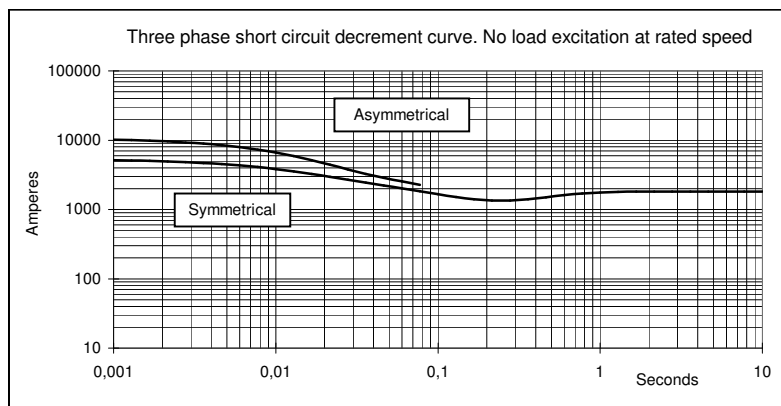
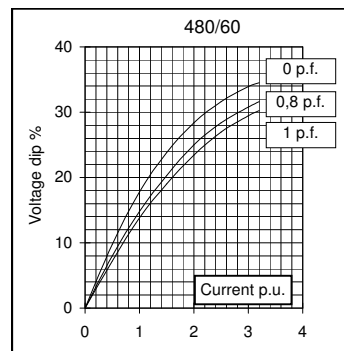
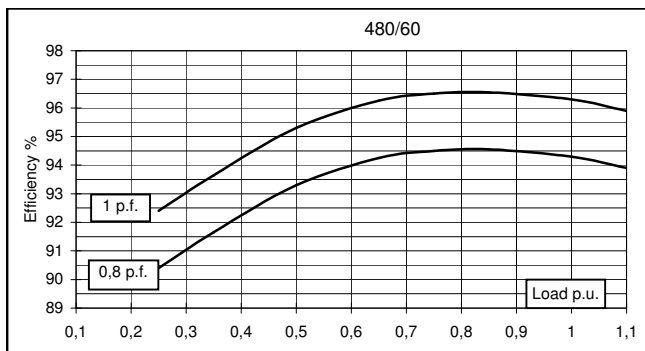
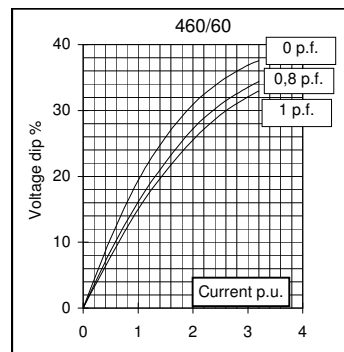
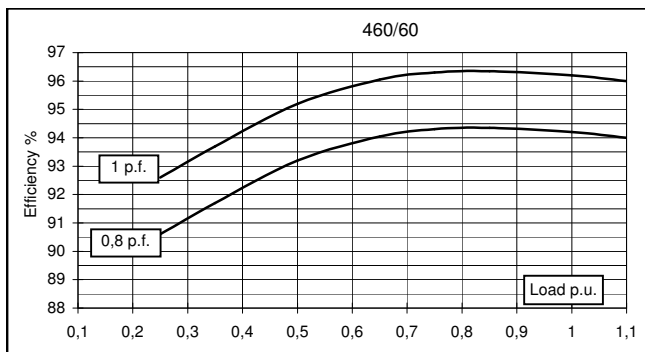
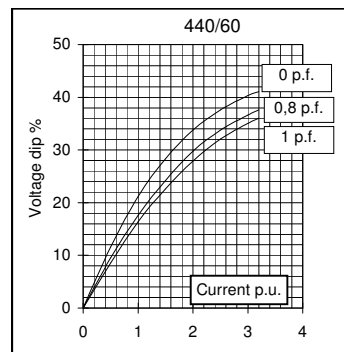
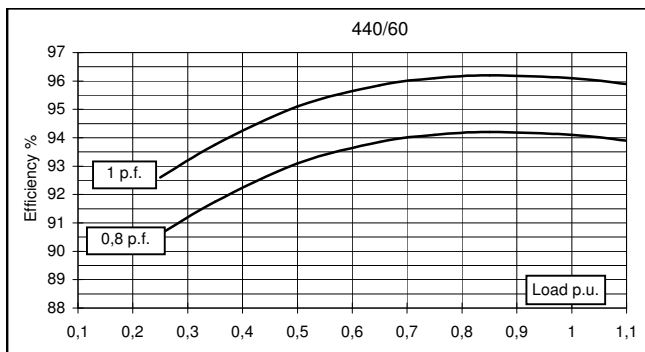
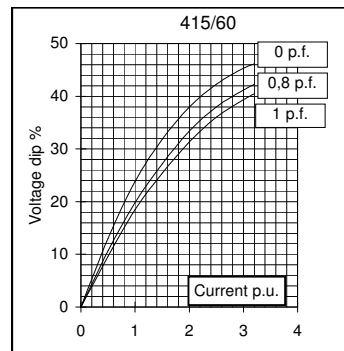
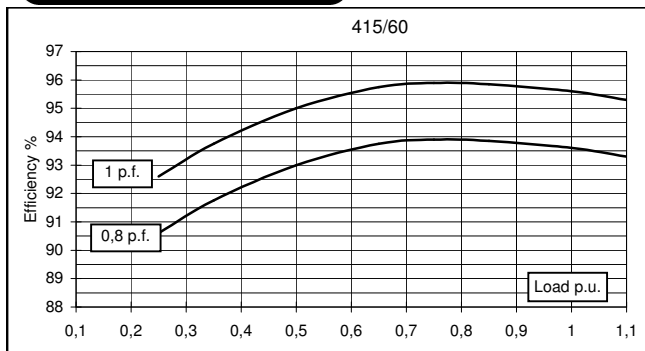
All technical data are to be considered as a reference and they can be modified without any notice.

This document is a propriety of Mecc Alte S.p.a..All rights reserved.

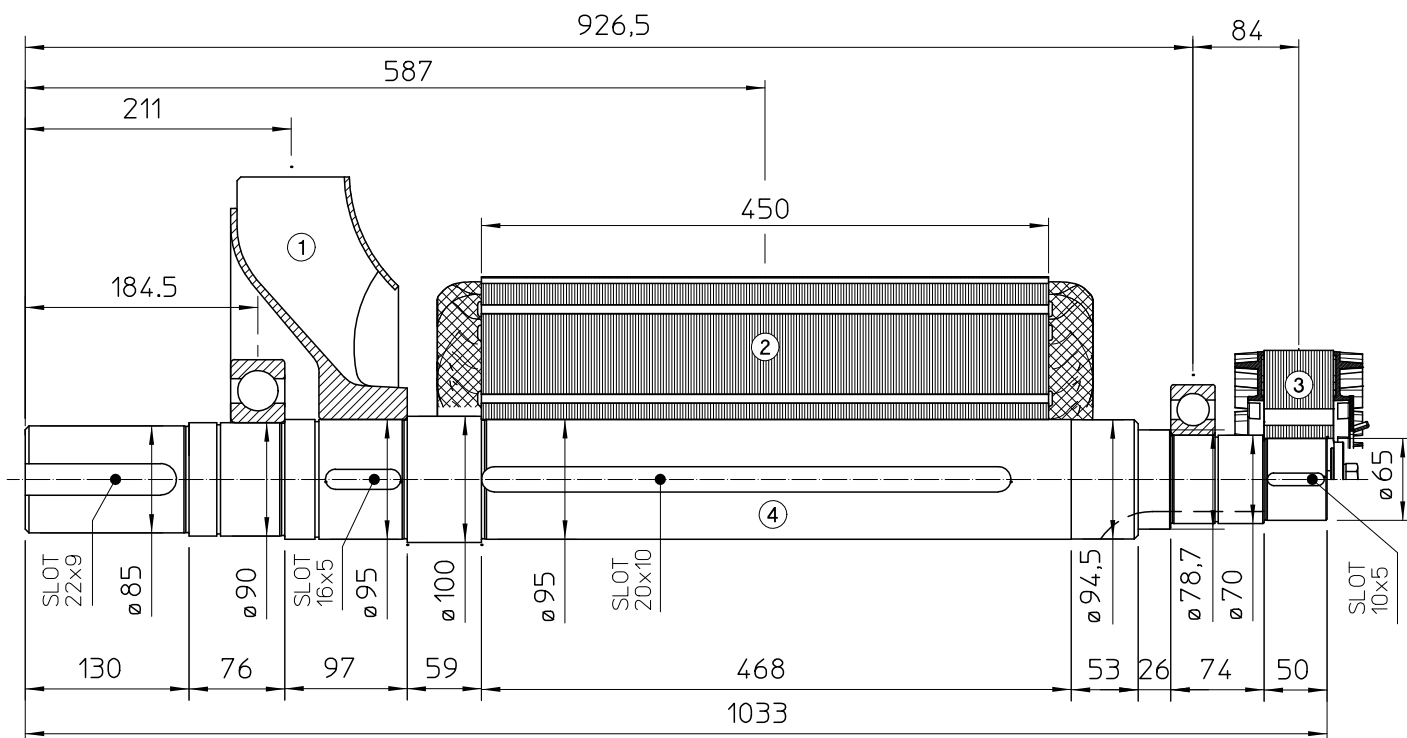
50 Hz



60 Hz

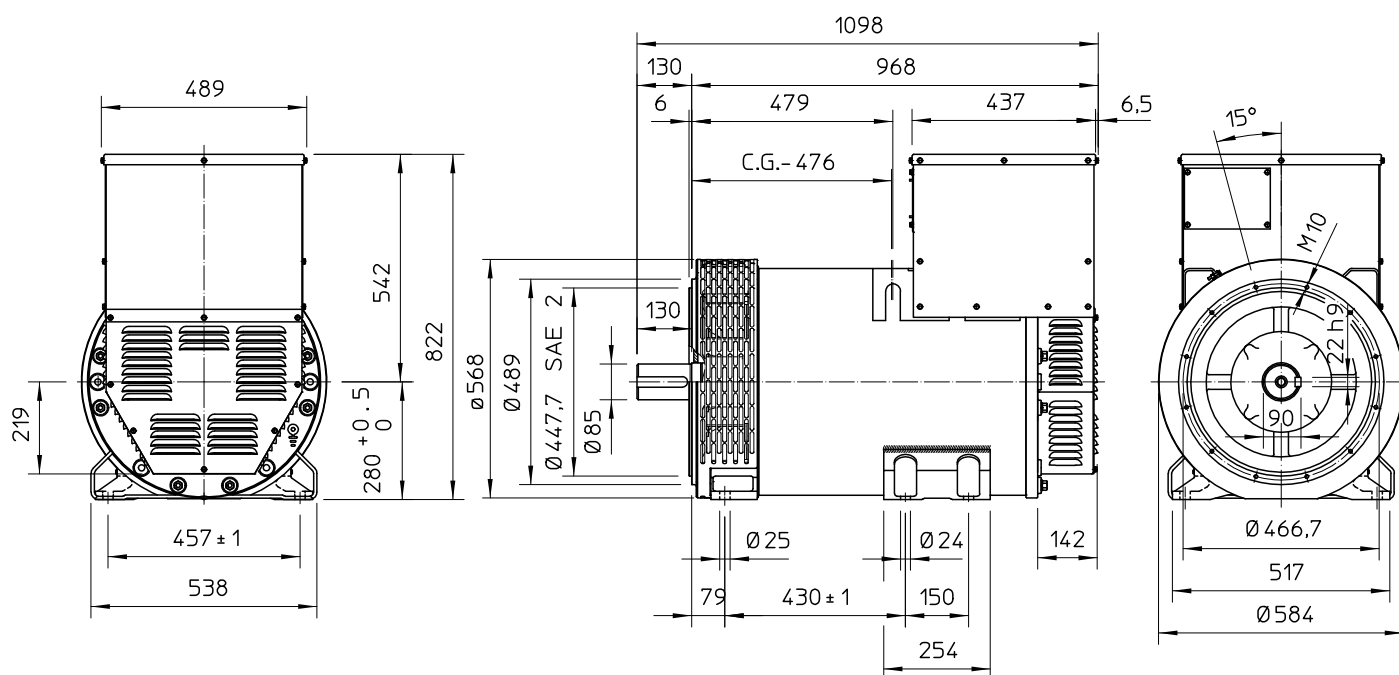


TWO BEARING MOMENTS OF INERTIA



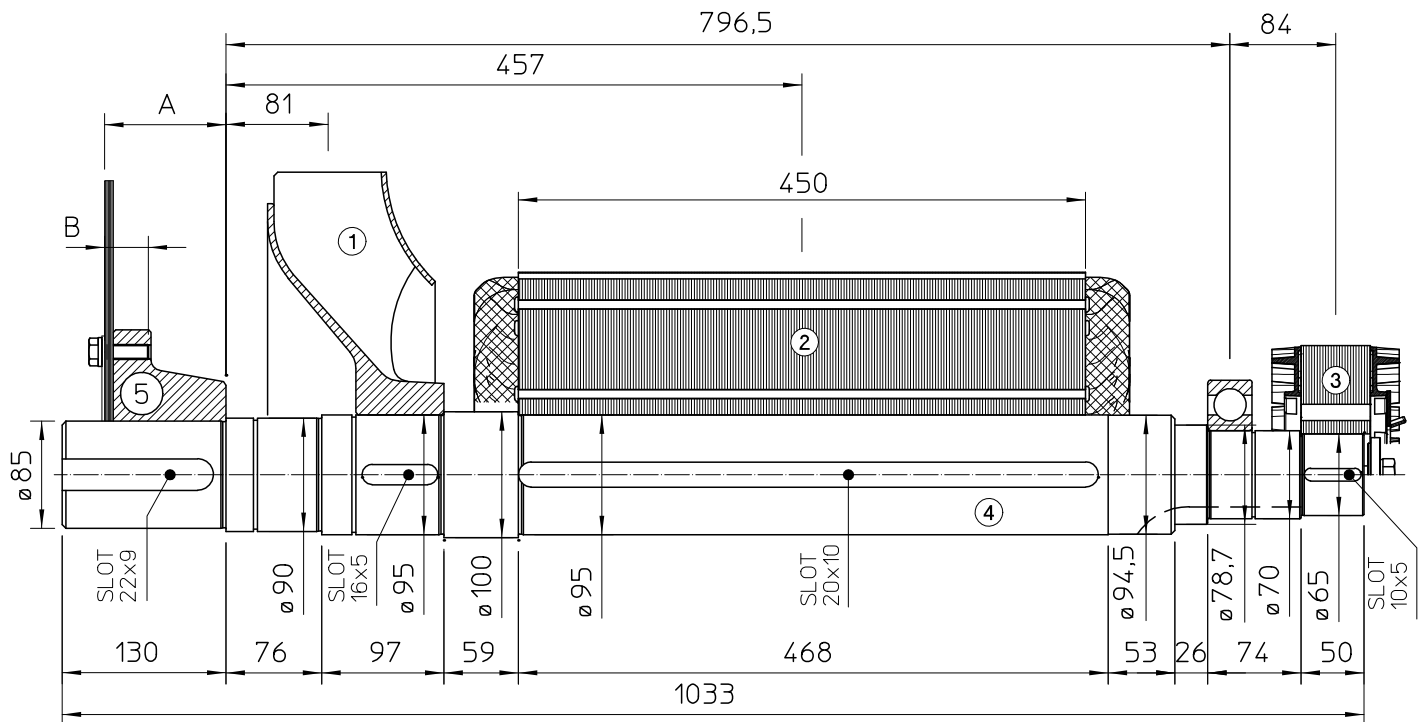
POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	6.1	0.1887
2	MAIN ROTOR	230	3.1461
3	EX. ROTOR	14.5	0.0874
4	SHAFT	49.9	0.0525
TOTAL		300.5	3.4747

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

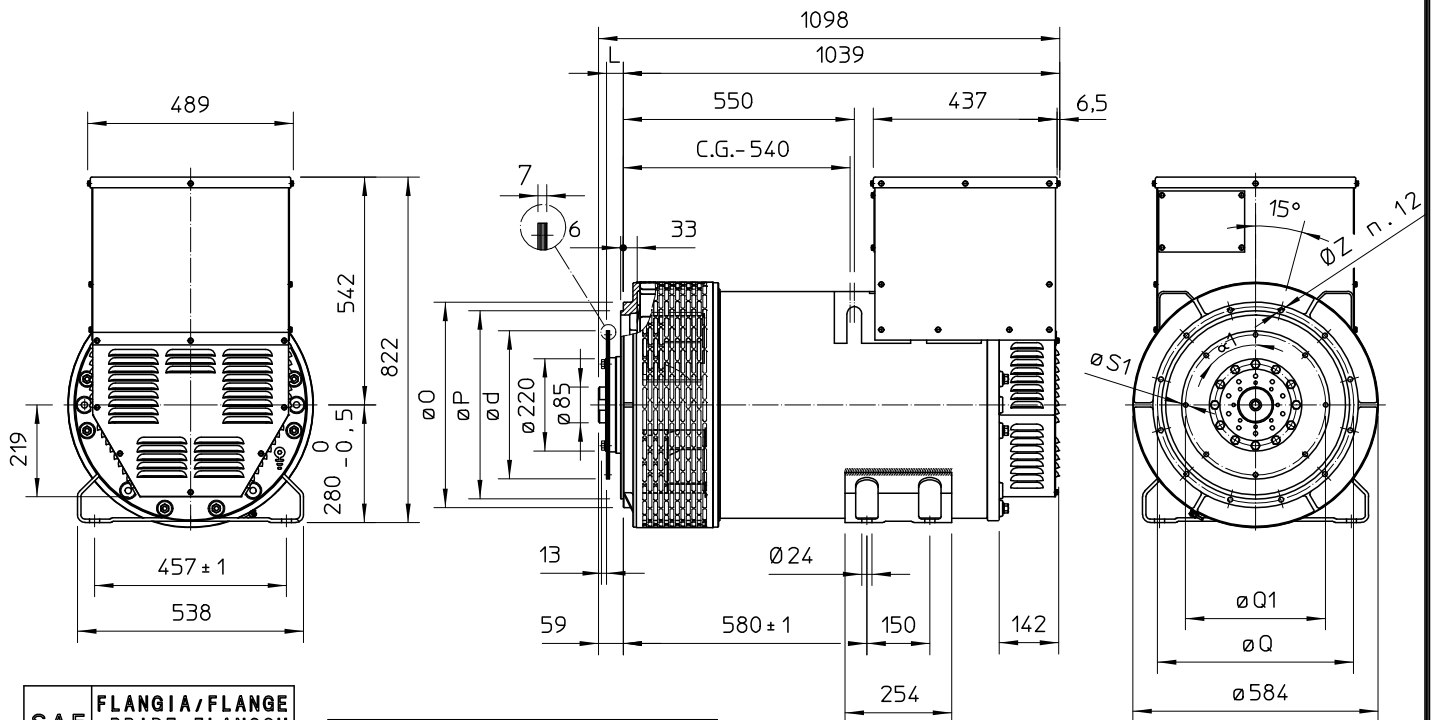
SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	6.1	0.1887
2	MAIN ROTOR	230	3.1461
3	EX. ROTOR	14.5	0.0874
4	SHAFT	49.9	0.0525
TOTAL		300.5	3.4747

SAE N°	5		SHAFTS COUPLING FLEX PLATE	
	A	B	WEIGHT kg	J kgm ²
11.5	110.4	41.1	20.5	0.174
14	96.4	34.7	23.5	0.275

SINGLE BEARING DIMENSIONS



SAE N.	FLANGIA/FLANGE BRIDE/FLANSCH		
	O	P	Q
3	451	409,6	428,6
2	489	447,7	466,7
1	552	511,2	530,2
1/2	648	584,2	619,1

SAE N.	GIUNTI A DISCHI DISC COUPLING DISQUE DE MONOPALIER SCHEIBENKUPPLUNG					
	L	d	Q1	n. fori	S1	α1
11 1/2	39,6	352,42	333,37	8	11	45°
14	25,4	466,72	438,15	8	14	45°

C.G.= GRAVITY CENTER