

ژنراتور : Mecc alte

موتور دیزل : Perkins

Standby		Prime		دیزل ژنراتور
KVA	KW	KVA	KW	
110	-	100	80	



1100 Series 1104C-44TAG2 Diesel Engine – Electropak

99.5 kWm 1500 rev/min
112.4 kWm 1800 rev/min

Building upon Perkins proven reputation within the power generation industry, the newly introduced 1100 Series range of Electropak engines now fit even closer to the needs of their customers.

In the world of power generation success is greeted for those providing more for even less. Therefore with this new 1104C-44TAG2 unit, Perkins has engineered for its customers even higher levels of reliability, yet lowered the cost of ownership. And with six cylinder capability from a four cylinder package performance increases, but crucially, bare engine noise is lower than ever before.

Rapid starting and pick-up are naturally built-in especially for cold operation, but where legislation or local markets demand an emissions capability, then the 1104C-44TAG2 satisfies EU 2007 Stage II mobile off-highway legislation; and also complies to TA Luft (1986) regulations.

1100 Series see the marriage of technology to customer need. A 4.4 litre unit very quietly setting a new standard in prime power supply and standby for the power generation industry.

Compact and efficient power

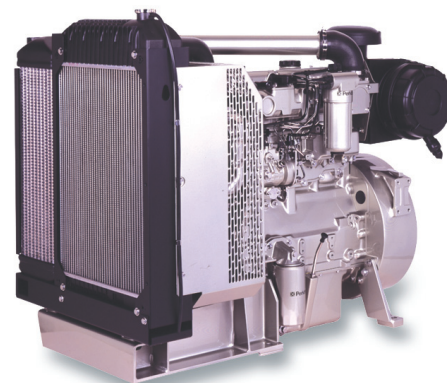
The Perkins 1100 Series family was developed following an intensive period of customer research. The 3.3 and 4.4 litre engines feature new cylinder blocks which ensure bore roundness is maintained under the pressures of operation, as well as significantly reducing mechanical and combustion noise. A new cross-flow cylinder head design optimises combustion control, and combines with turbocharger and charge cooler technology to achieve the best combination of power delivery and low exhaust emissions.

Cleaner and quieter power

The refined structure of the 1100C range leads to an exceptionally low noise signature. To meet environmental needs swirl conditioned air is delivered through the new cross-flow cylinder head, and burns cleanly with the high pressure fuel from an advanced technology rotary pump.

Quality by design

Class A manufacturing improvements ensure that product reliability meets the high standards demanded by customers. Product design is focused on maintaining Perkins' legendary reputation for durability.



Cost effective power

The compact packaging and low noise performance of the 1100C range bring clear benefits to the Genset packager. Low cost of operation is assured by lower fuel and oil consumption, 500 hour service intervals, and the two year warranty.

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

Certified against the requirements of EU 2007 (EU 97/68/EC Stage II) legislation for non-road mobile machinery, powered by constant speed engines

Engine Speed (rev/min)	Type of Operation	Typical Generator Output (Net)		Engine Power			
				Gross		Net	
		kVA	kWe	kWm	bhp	kWm	bhp
1500	Prime Power	101.4	81.4	93.6	125.5	90.1	120.8
	Standby (maximum)	111.9	89.6	103.0	138.0	99.5	133.4
1800	Prime Power	114.4	91.5	106.8	143.2	101.7	136.3
	Standby (maximum)	126.5	101.2	117.5	157.5	112.4	150.7

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

Generator powers are typical and are based on typical alternator efficiencies and a power factor and a power factor (cos θ) of 0.8. Fuel specification: BS 2869 Class 2 or ASTM D975 D2. Lubricating oil: API CH4/ACEA E5.

Rating Definitions

Prime Power: Power available for variable load in lieu of a main power network. Overload of 10% permitted for 1 hour in every 12 hours operation.
Standby (maximum): Power available at variable load in the event of a main power network failure. No overload is permitted.

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

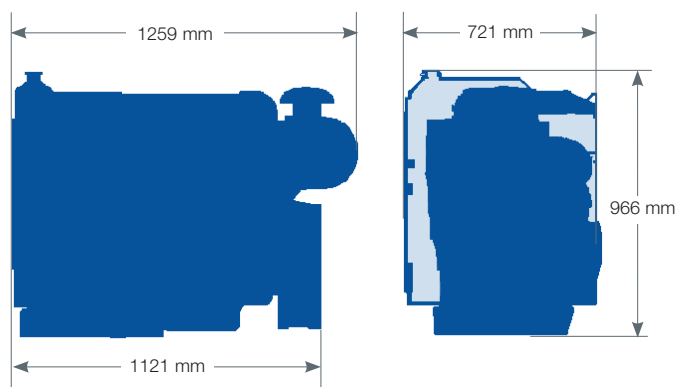
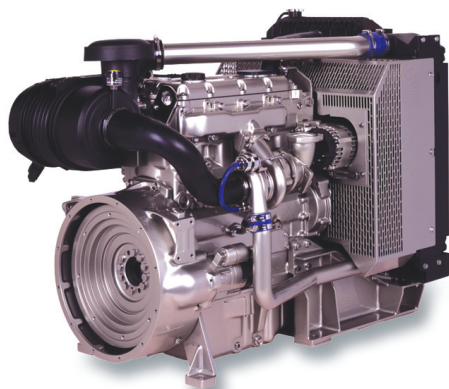
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THE HEART OF EVERY GREAT MACHINE

1100 Series 1104C-44TAG2 Diesel Engine – Electropak

99.5 kWm 1500 rev/min
112.4 kWm 1800 rev/min



Engine specification

Air inlet

- Mounted air filter

Fuel system

- Rotary type pump
- Ecoplus fuel filter

Lubrication system

- Wet cast iron sump with filler and dipstick
- Spin-on oil filter

Cooling system

- Thermostatically-controlled system with gear-driven circulation pump and belt-driven pusher fan
- Mounted radiator and piping incorporating air-to-air charge cooler

Electrical equipment

- 12 volt starter motor and 12 volt 65 amp alternator with DC output
- 12 volt shutdown solenoid energised to run
- Glow plug cold start aid

Flywheel and housing

- Flywheel to SAE J620 size 10/11½
- SAE 3 flywheel housing

Literature

- User's Handbook

Optional equipment

- 24 volt alternator
- 24 volt starter motor
- Workshop manual
- Parts book

Engine Speed	Fuel Consumption			
	1500 rev/min		1800 rev/min	
	g/kWh	l/hr	g/kWh	l/hr
Standby	205	24.9	214	29.7
Prime Power	205	22.6	218	26.9
75% of Prime Power	207	17.1	218	20.2
50% of Prime Power	204	11.2	228	14.1

General data

Number of cylinders 4 vertical in-line
Bore and stroke.....105 x 127 mm
Displacement 4.41 litres
Aspiration Turbocharged, air to air
Cycle.....4 stroke
Combustion system.....Direct injection
Compression ratio 18.2:1
Rotation.....Anti-clockwise viewed on flywheel
Cooling system..... Water-cooled
Total lubrication system capacity 8.0 litres
Total coolant capacity..... 12.6 litres
Dimensions – Length 1259 mm
Width 721 mm
Height 966 mm
Dry weight (Electropak) 550 kg

Final weight and dimensions will depend on completed specification

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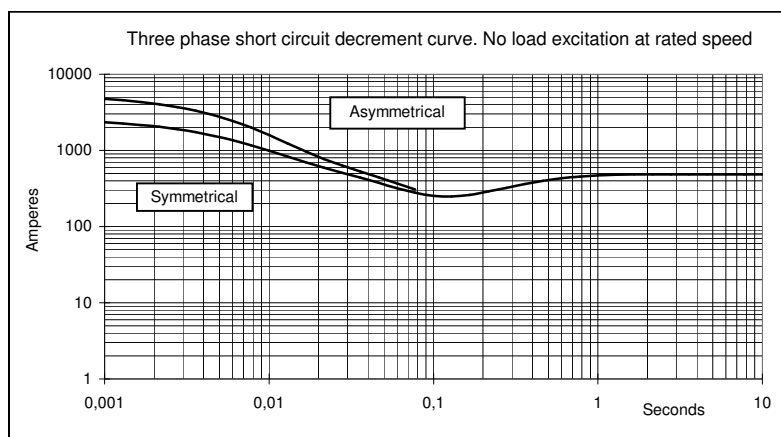
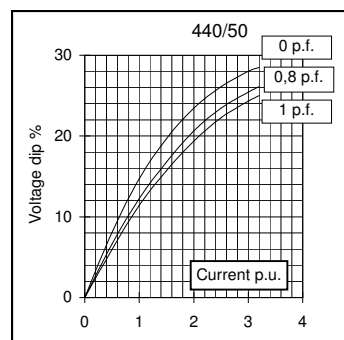
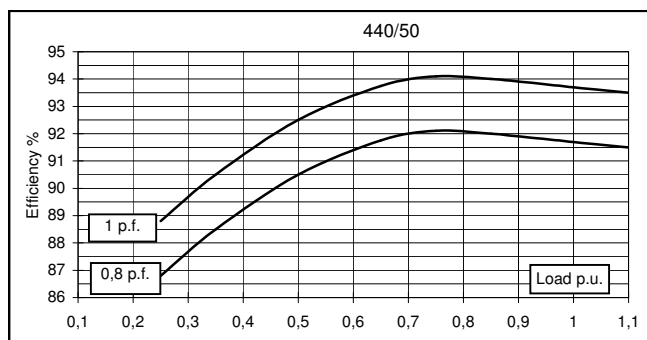
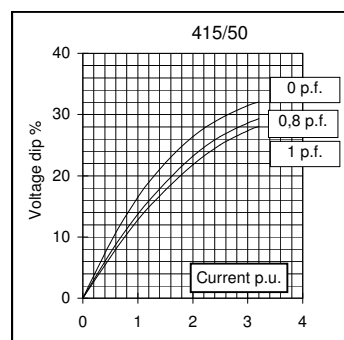
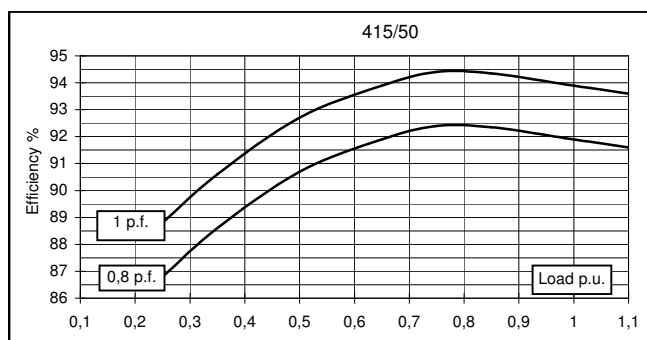
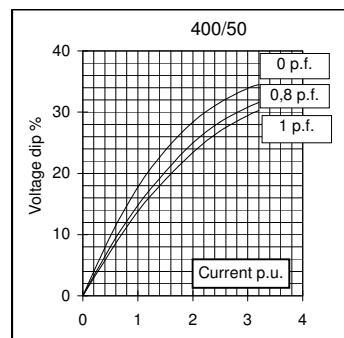
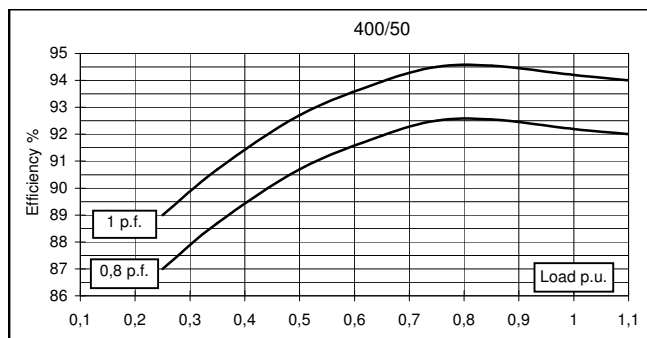
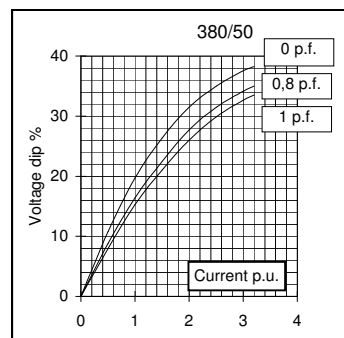
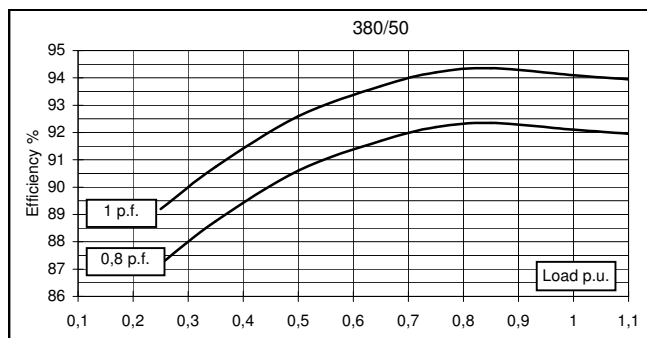
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Electrical Characteristics										
Frequency		Hz	50				60			
Voltage (series star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	105	105	105	85	115	126	126	126
		kW	84	84	84	68	92	101	101	101
Rated power class F		kVA	95	95	95	77	104	114	114	114
		kW	76	76	76	61,6	83,2	91,2	91,2	91,2
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	%	92,1	92,2	91,9	91,7	93,1	93,6	93,7	93,8
(see graph. for details)	3/4	%	92,2	92,5	92,4	92,1	93,6	93,8	93,9	94,1
	2/4	%	90,6	90,7	90,7	90,5	92	92,1	92,2	92,3
	1/4	%	87,2	87	86,8	86,8	88,2	88,2	88,2	88
Reactances (f. l.cl. F)										
	Xd	%	254,8	230	213,7	153,9	280,8	273,7	250,4	230
	Xd'	%	19,5	17,6	16,4	11,8	21,5	20,9	19,2	17,6
	Xd''	%	6,3	5,7	5,3	3,8	7,0	6,8	6,2	5,7
	Xq	%	165,8	149,6	139,0	100,1	182,7	178,0	162,9	149,6
	Xq'	%	165,8	149,6	139,0	100,1	182,7	178,0	162,9	149,6
	Xq''	%	34,6	31,2	29,0	20,9	38,1	37,1	34,0	31,2
	X ₂	%	20,5	18,5	17,2	12,4	22,6	22,0	20,1	18,5
	X ₀	%	3,9	3,5	3,3	2,3	4,3	4,2	3,8	3,5
Short Circuit Ratio	Kcc		0,41	0,47	0,61	0,90	0,32	0,35	0,41	0,47
Time Constants	Td'	sec.	0,0393							
	Td''	sec.	0,0055							
	Tdo'	sec.	1,70							
	Tα	sec.	0,0146							
Short Circuit Current Capacity		%	>300				>350			
Excitation at no load	Amp.		0,5	0,6	0,8	1,1	0,2	0,3	0,4	0,5
Excitation at full load	Amp.		2	2,2	2,3	2,6	1,7	1,9	2	2,2
Overload (long-term)	%	1 hour in a 6 hours period 110% rated load								
Overload per 20 sec.	%	300								
Stator Winding Resistance (20 °C)	Ω	0,02								
Rotor Winding Resistance (20 °C)	Ω	2,951								
Exciter Resistance (20 °C)	Ω	Rotor : 0,410				Stator : 15,28				
Heat dissipation at f.l.cl.H	W	7205	7106	7404	6155	6818	6892	6777	6663	
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 %	1,8 / 1,9								
Waveform Distors.(THD) at no load	LL/LN %	2,8 / 2,9								
Mechanical characteristics										
Protection		IP 21 (other protection on request)								
DE bearing		6314.2RS								
NDE bearing		6311.2RS								
Weight of wound stator assembly	kg	126								
Weight of wound rotor assembly	kg	81								
Weight of complete generator	kg	409								
Maximun overspeed	rpm	2250								
Unbalanced magnetic pull at f.l.cl.F	kN/mm	5,1								
Cooling air requirement	m³/min	19,3					23			
Inertia Constant (H)	sec.	0,111					0,133			
Noise level at 1m/7m	dB(A)	79 / 65					83 / 69			

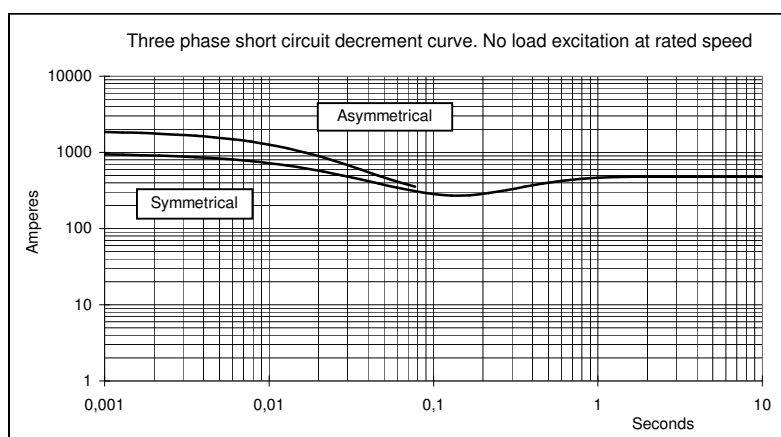
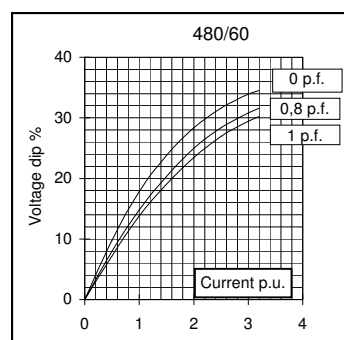
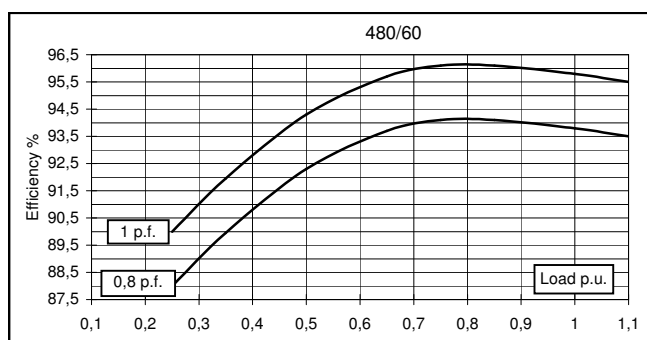
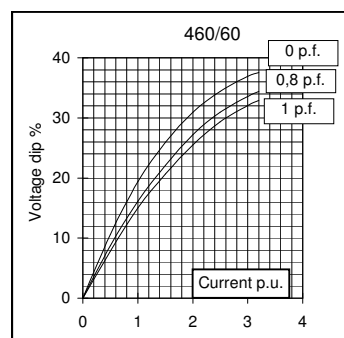
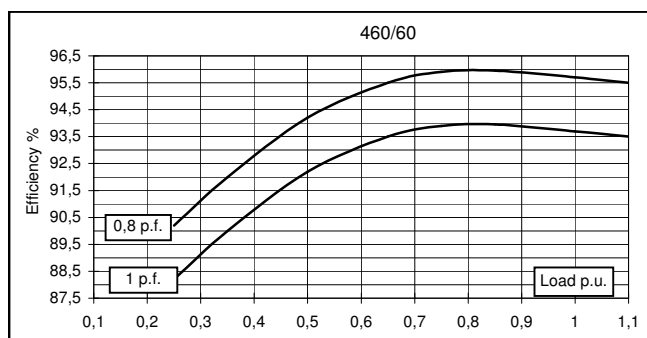
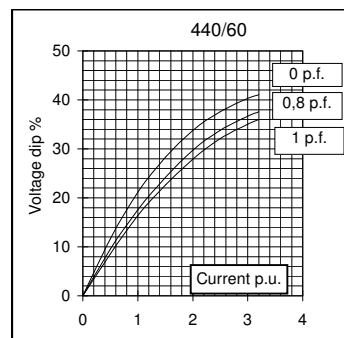
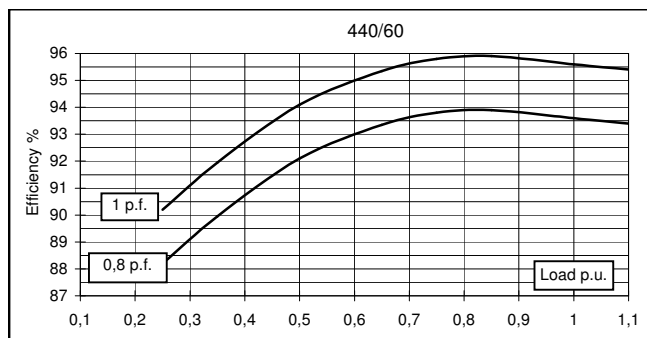
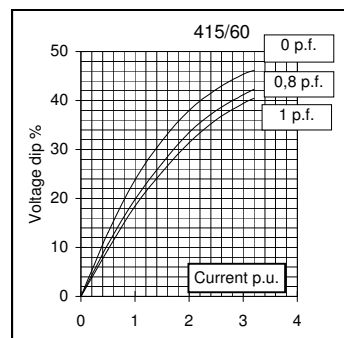
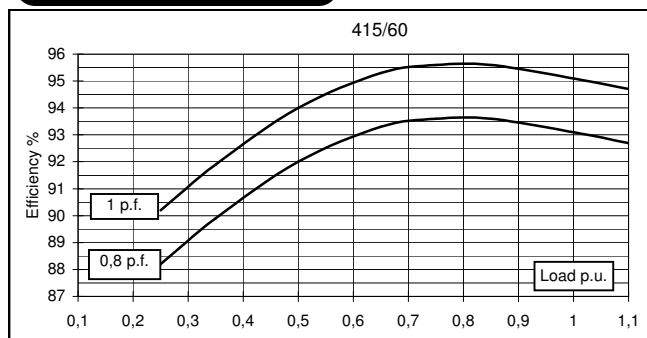
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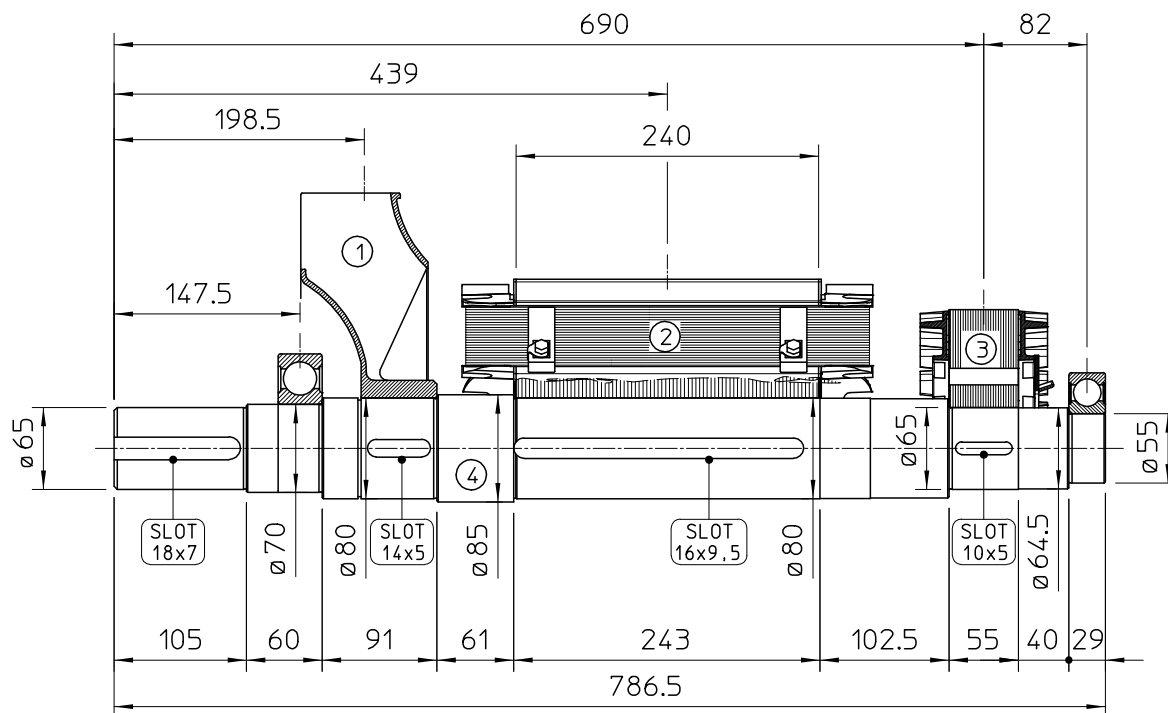
50 Hz



60 Hz

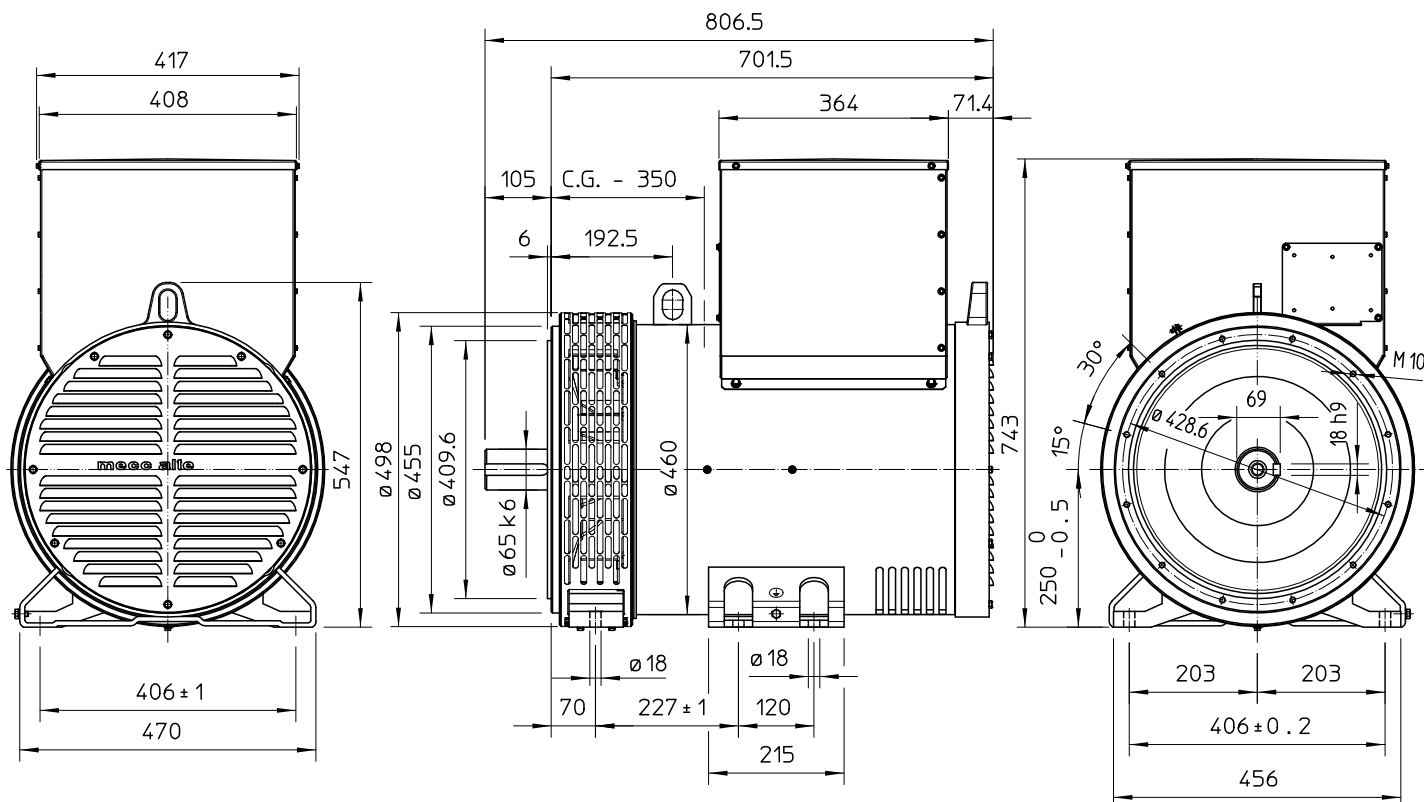


TWO BEARING MOMENTS OF INERTIA



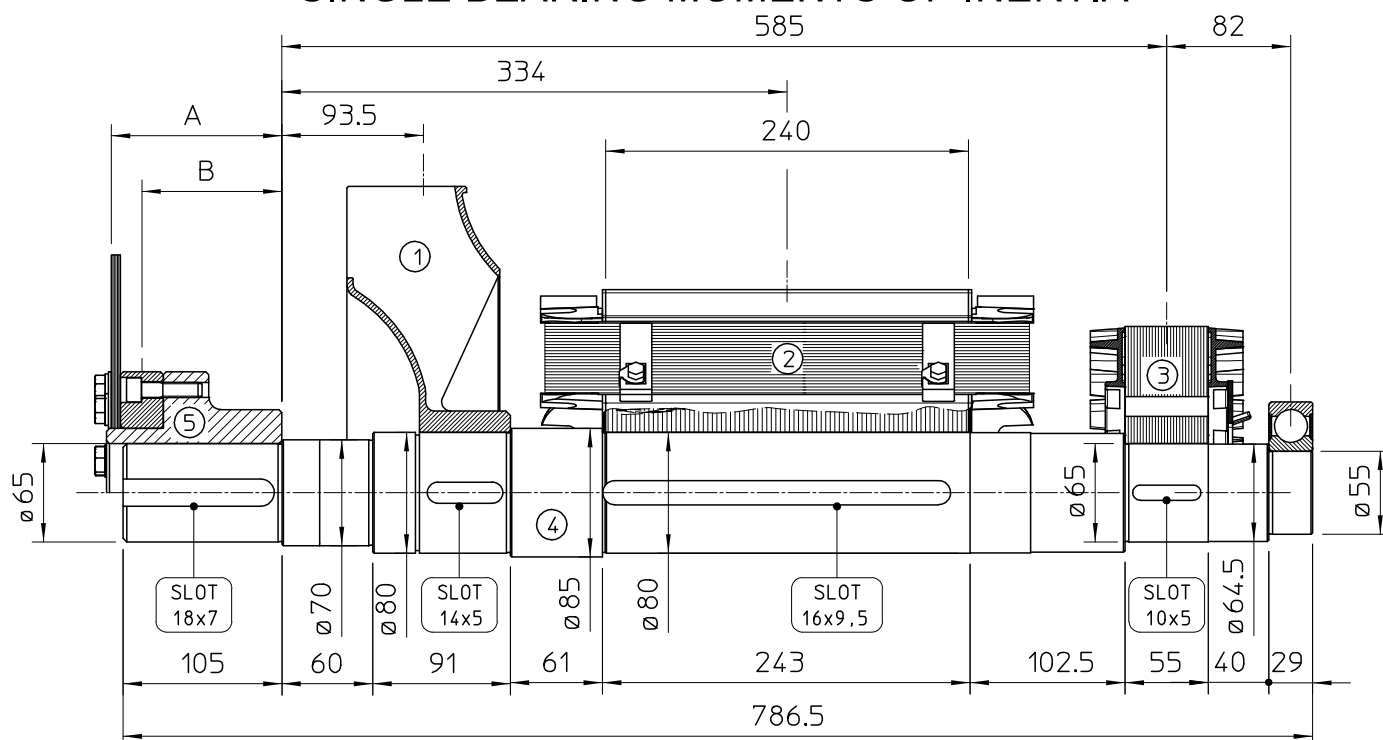
POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	3.6	0.0451
2	MAIN ROTOR	83.7	0.7539
3	EX. ROTOR	14.5	0.0874
4	SHAFT	26.8	0.0196
TOTAL		128.6	0.906

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

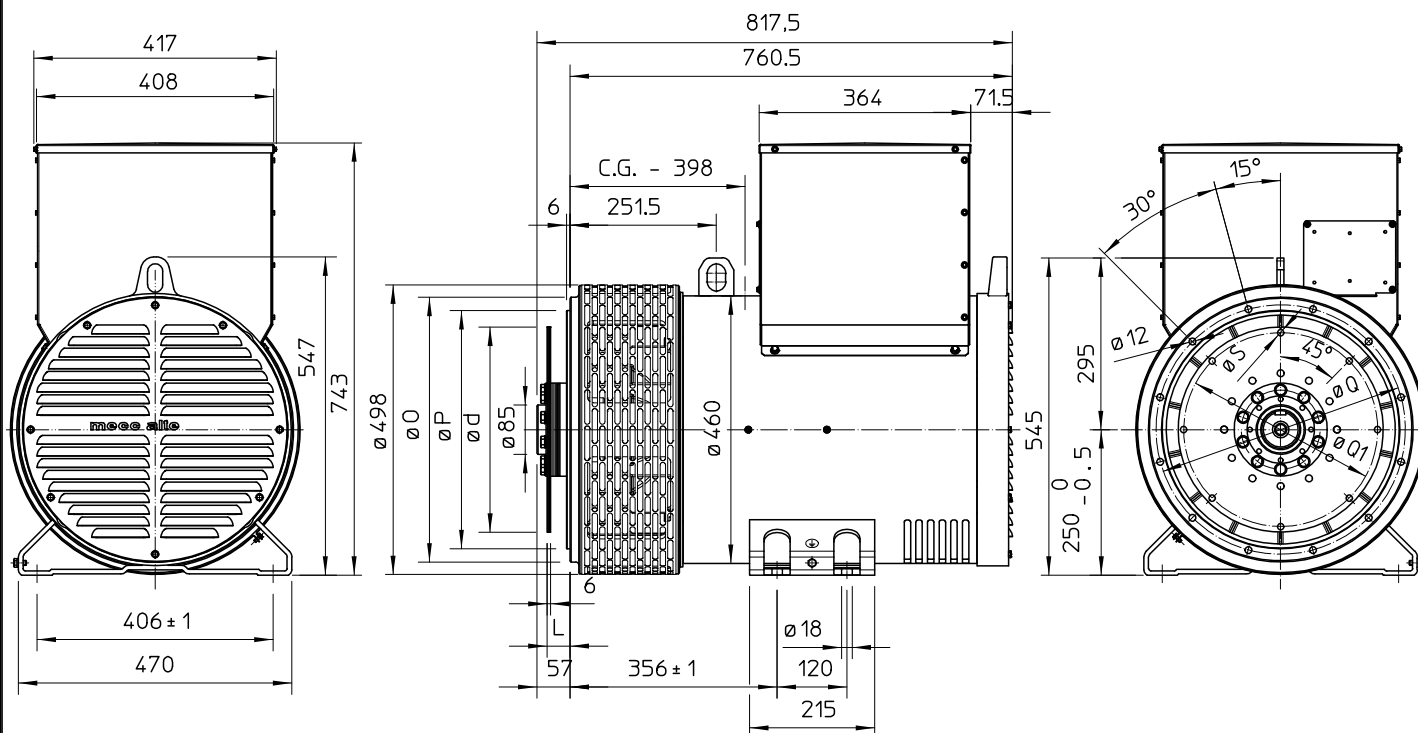
SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	3.6	0.0451
2	MAIN ROTOR	83.7	0.7539
3	EX. ROTOR	14.5	0.0874
4	SHAFT	26.8	0.0196
TOTAL		128.6	0.906

SAE N°	5	SHAFTS COUPLING FLEX PLATE			
	A	B	WEIGHT kg	J kgm ²	
10	112.8	35.6	13.5	0.0770	
11 1/2	98.6	71.5	12.4	0.0956	
14	84.4	68.6	14.8	0.2360	

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

SAE N.	GIUNTI A DISCHI / DISC COUPLING DISQUE DE MONOPALIER / SCHEIBENKUPPLUNG			
	L	d	Q1	S
10	53.8	314.32	295.27	11
11 1/2	39.6	352.42	333.37	11
14	25.4	466.72	438.15	14

C.G.= GRAVITY CENTER