



# GENERATOR TYPE ECO 38-3SN/4

Document : DS072A/1

issue 003 date 01/06/2011

Electrical Characteristics										
Frequency	Hz	50				60				
Voltage (series star)	V	380	400	415	440	415	440	460	480	
Rated power class H	kVA	225	225	225	210	260	270	270	270	
	kW	180	180	180	168	208	216	216	216	
Rated power class F	kVA	207	207	207	190	240	250	250	250	
	kW	166	166	166	152	192	200	200	200	
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	%	92,9	93	92,7	92,5	93,5	94	94,1	94,2
(see graph. for details)	3/4	%	93	93,3	93,2	92,9	93,9	94,1	94,3	94,5
	2/4	%	91,9	92	92	91,8	93,1	93,2	93,3	93,4
	1/4	%	89,6	89,4	89,2	89	90,6	90,6	90,6	90,4
Reactances (f. l.cl. F)										
	Xd	%	212,7	192	178,4	148,1	247,3	228,5	209,1	192
	Xd'	%	13,6	12,3	11,4	9,5	15,8	14,6	13,4	12,3
	Xd''	%	7,2	6,5	6,0	5,0	8,4	7,7	7,1	6,5
	Xq	%	117,5	106	98,5	81,8	136,6	126,1	115,4	106
	Xq'	%	117,5	106	98,5	81,8	136,6	126,1	115,4	106
	Xq''	%	24,6	22,2	20,6	17,1	28,6	26,4	24,2	22,2
	X <sub>2</sub>	%	17,1	15,4	14,3	11,9	19,8	18,3	16,8	15,4
	X <sub>0</sub>	%	2,9	2,6	2,4	2,0	3,3	3,1	2,8	2,6
Short Circuit Ratio	Kcc		0,42	0,45	0,67	1,12	0,32	0,37	0,42	0,45
Time Constants										
	Td'	sec.	0,083							
	Td''	sec.	0,013							
	Tdo'	sec.	1,10							
	Tα	sec.	0,018							
Short Circuit Current Capacity										
		%	>300				>350			
Excitation at no load	Amp.		0,55	0,67	0,8	1,1	0,3	0,4	0,5	0,65
Excitation at full load	Amp.		2,8	3	3,2	3,3	2,4	2,5	2,7	2,9
Overload (long-term)	%	1 hour in a 6 hours period 110% rated load								
Overload per 20 sec.	%	300								
Stator Winding Resistance (20°C)	Ω	0,0085								
Rotor Winding Resistance (20°C)	Ω	4,449								
Exciter Resistance (20 °C)	Ω	Rotor : 0,685				Stator : 15,28				
Heat dissipation at f.l.cl.H	W	13757	13548	14175	13622	14460	13787	13543	13299	
Telephone Interference		THF < 2%				TIF < 40				
Radio interference		EN61000-6-3, EN61000-6-1. For others standards apply to factory								
Waveform Distors.(THD) at f. load	LL/LN %	2,8 / 2,9								
Waveform Distors.(THD) at no load	LL/LN %	2,6 / 2,8								
Mechanical characteristics										
Protection		IP 21 (other protection on request )								
DE bearing		6318.2RS								
NDE bearing		6314.2RS								
Weight of wound stator assembly	kg	195								
Weight of wound rotor assembly	kg	128								
Weight of complete generator	kg	590								
Maximun overspeed	rpm	2250								
Unbalanced magnetic pull at f.l.cl.F	kN/mm	5,7								
Cooling air requirement	m <sup>3</sup> /min	32				39				
Inertia Constant (H)	sec.	0,114				0,137				
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

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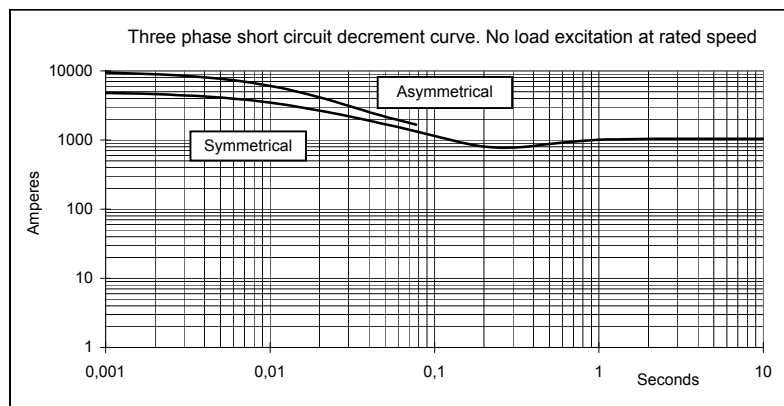
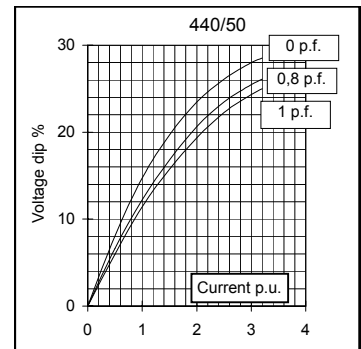
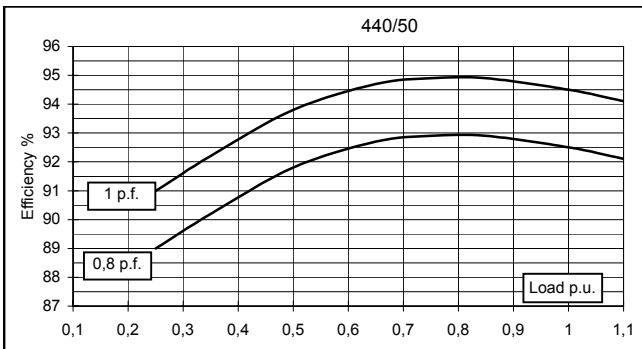
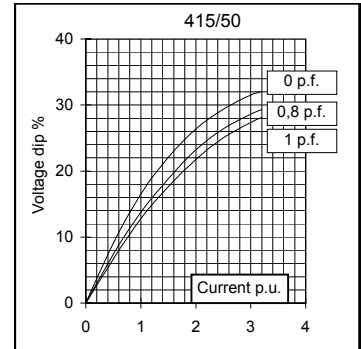
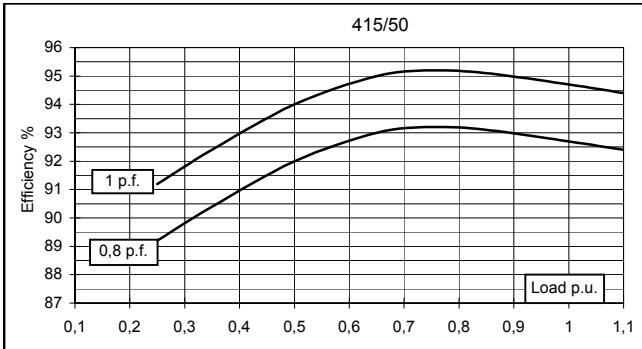
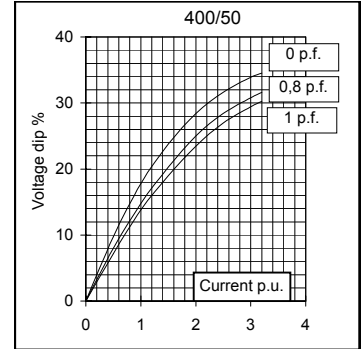
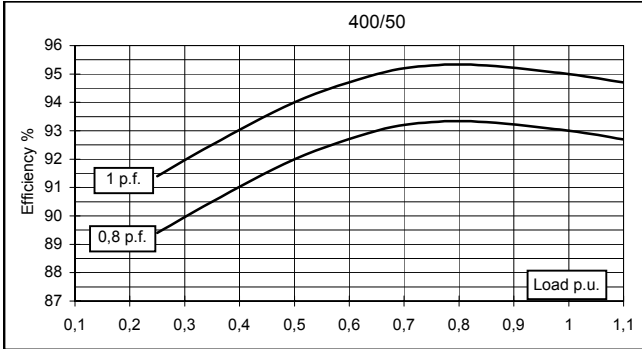
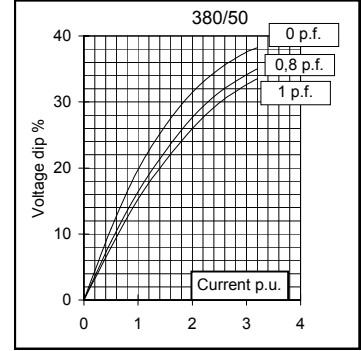
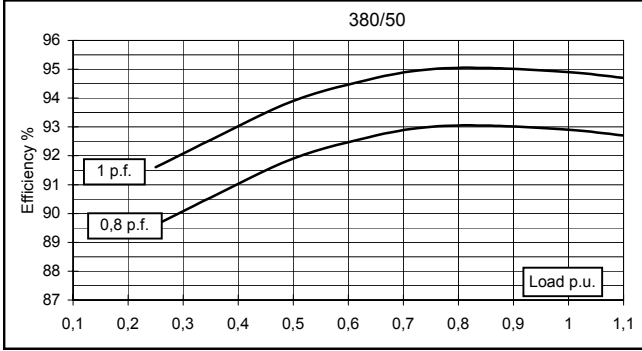


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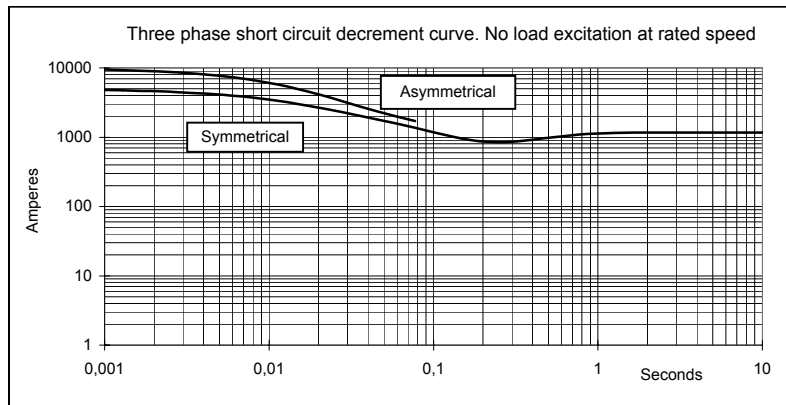
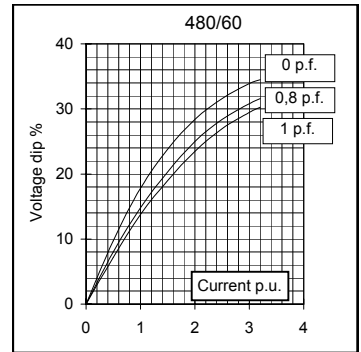
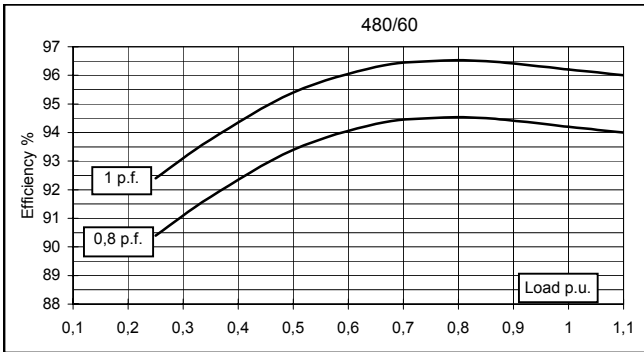
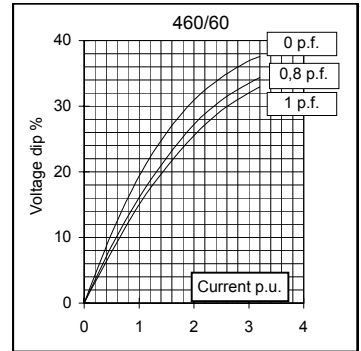
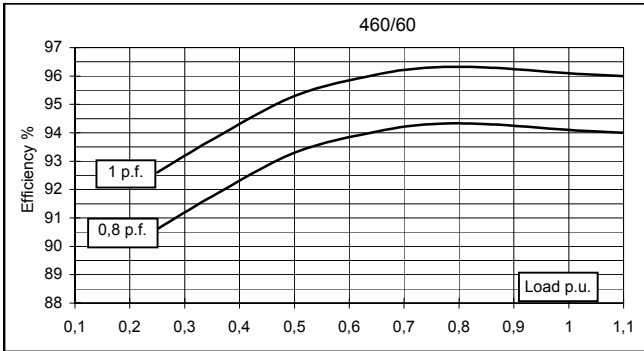
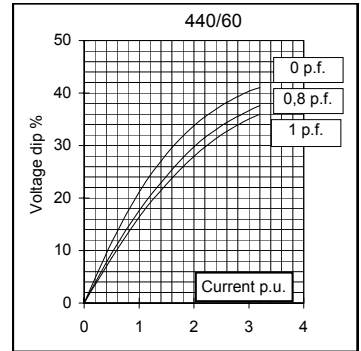
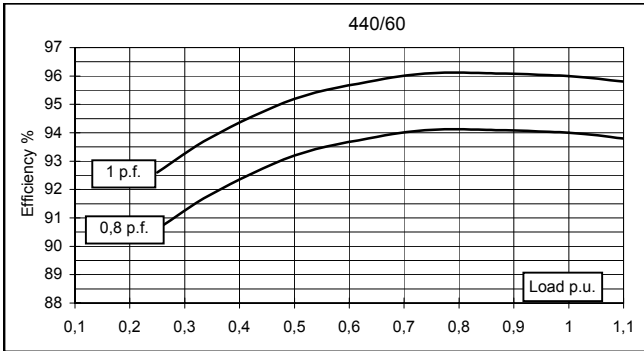
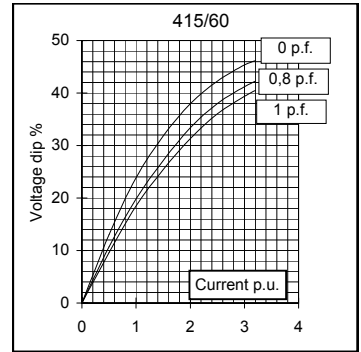
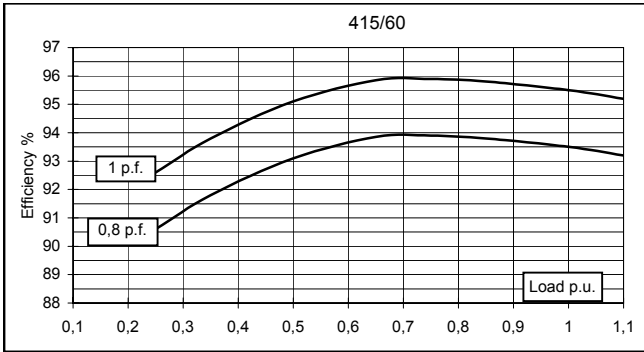
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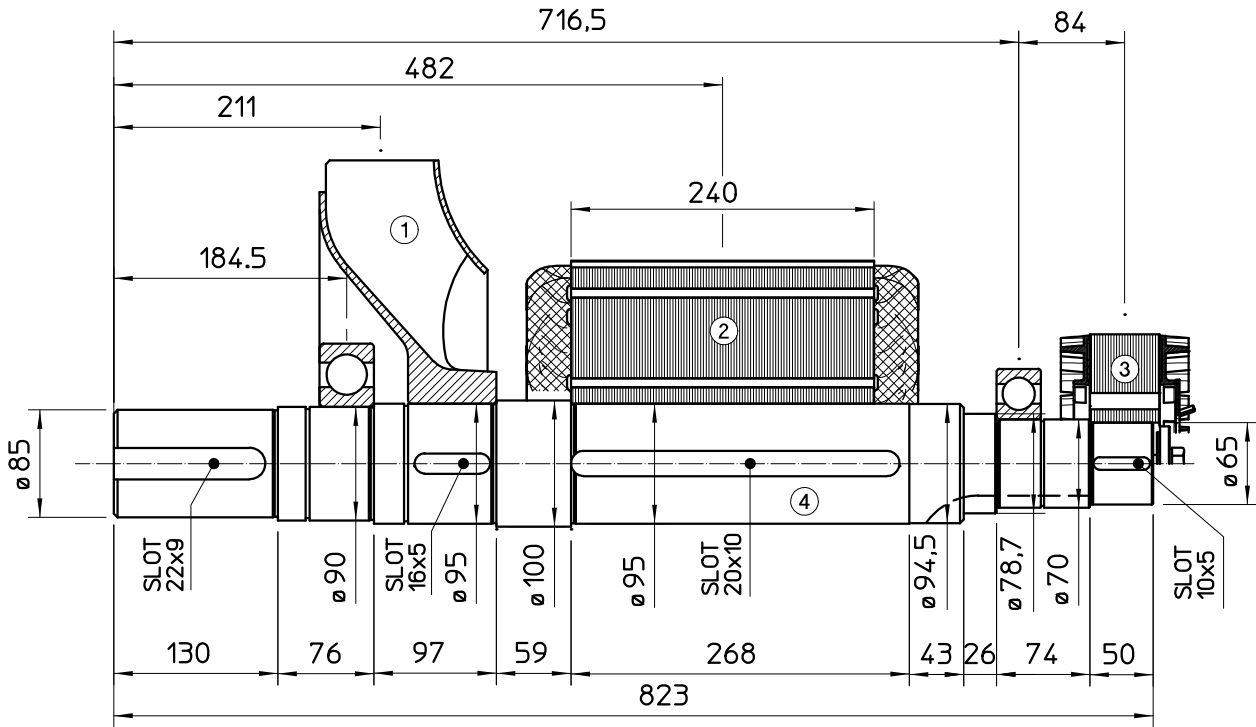
## 50 Hz



**60 Hz**

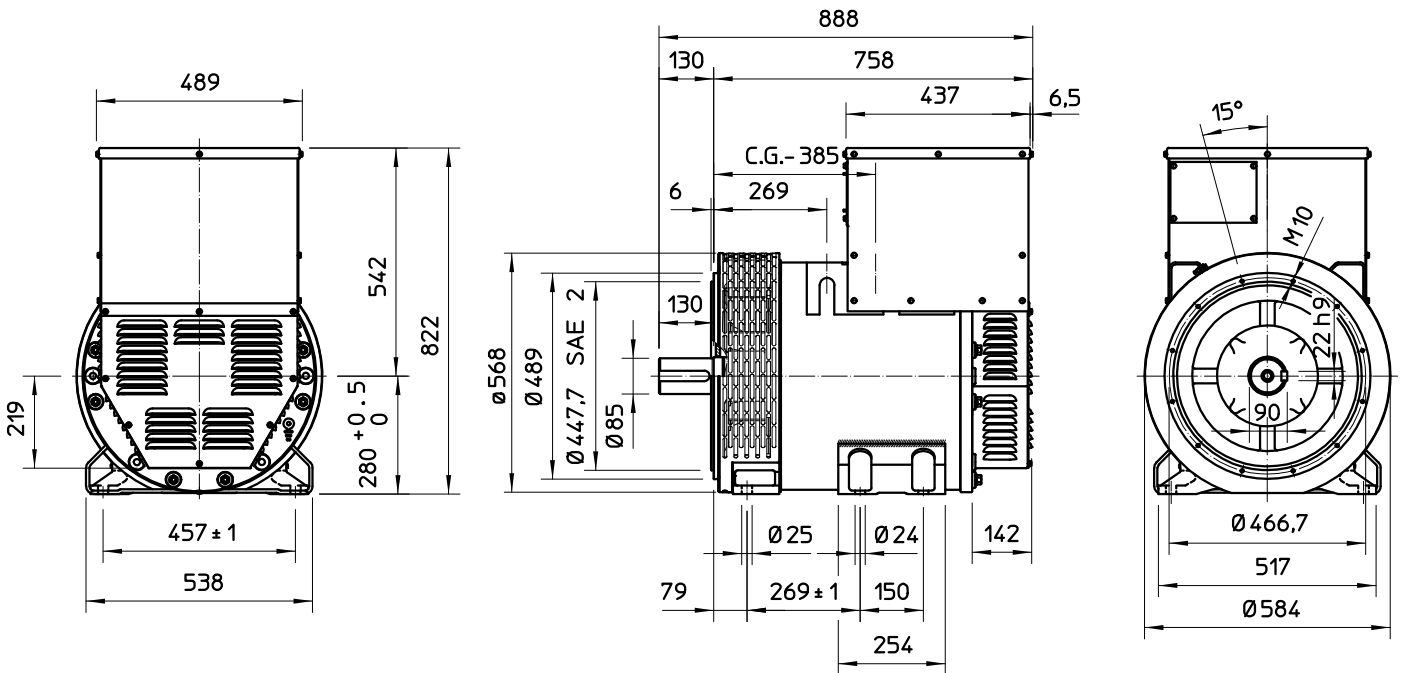


TWO BEARING MOMENTS OF INERTIA

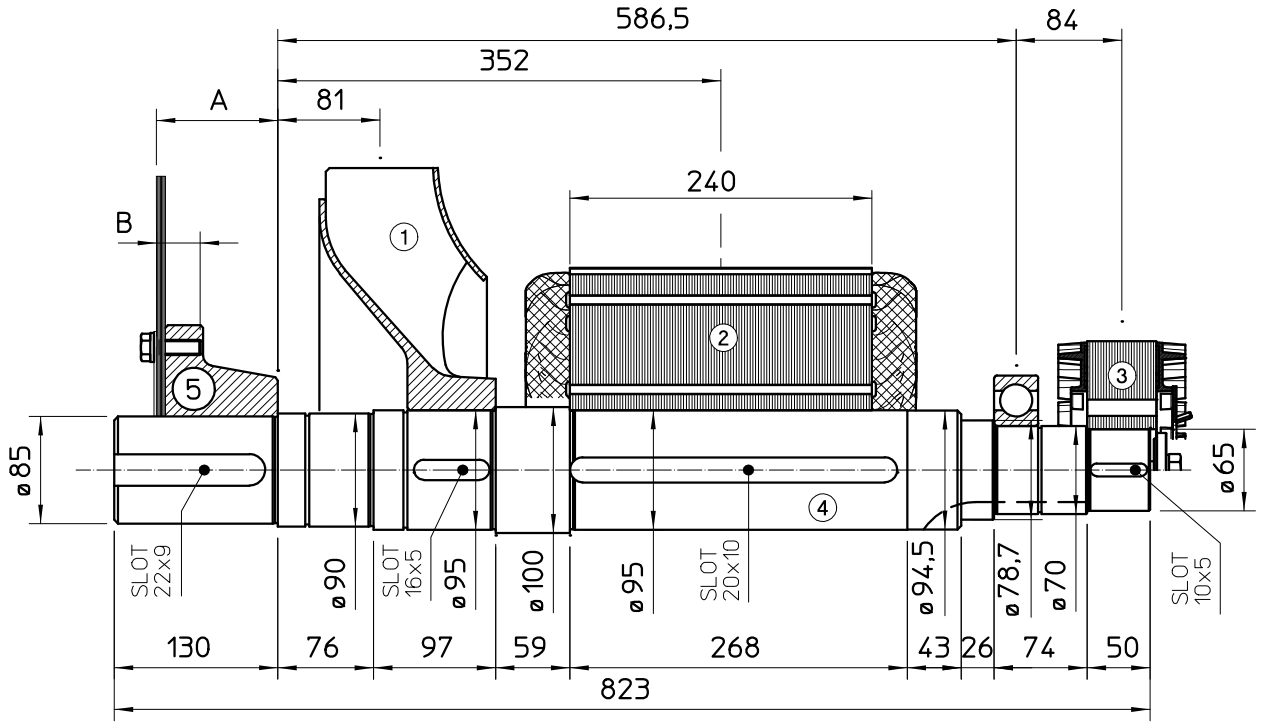


POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	6.1	0.1887
2	MAIN ROTOR	128	1.7593
3	EX. ROTOR	14.5	0.0874
4	SHAFT	38.5	0.0397
TOTAL		187.1	2.0751

TWO BEARING DIMENSIONS



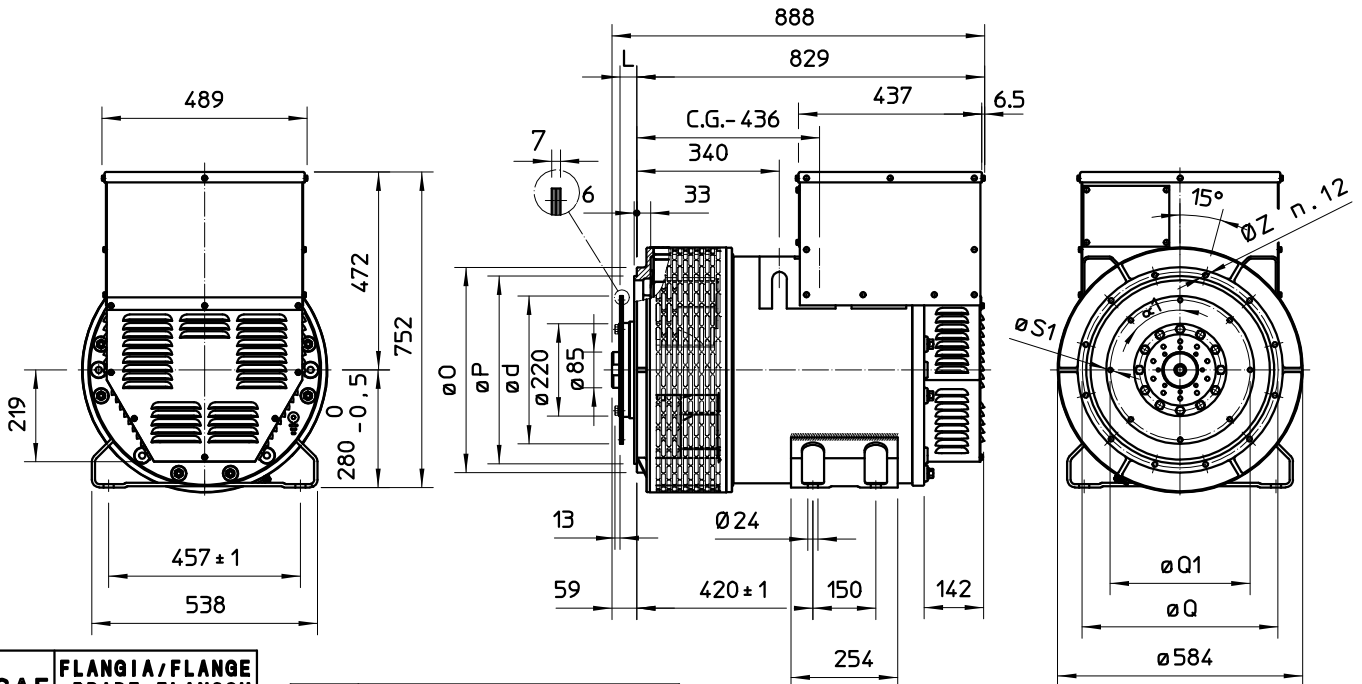
### SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	6.1	0.1887
2	MAIN ROTOR	128	1.7593
3	EX. ROTOR	14.5	0.0874
4	SHAFT	38.5	0.0397
TOTAL		187.1	2.0751

SAE N°	SHAFTS COUPLING FLEX PLATE			
	A	B	WEIGHT kg	J kgm <sup>2</sup>
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