



# GENERATOR TYPE ECP 28-3L/2 A

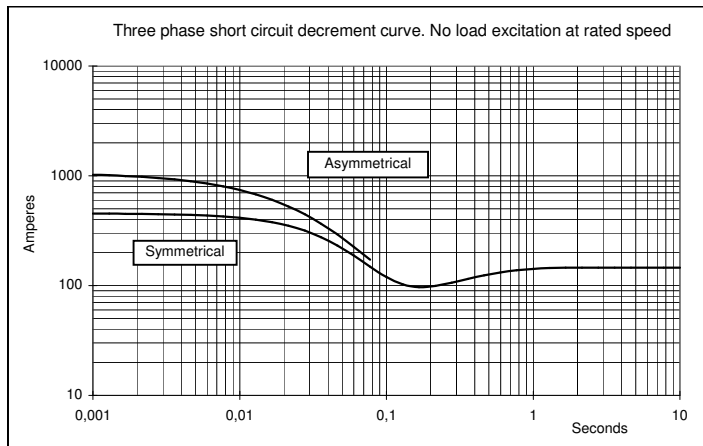
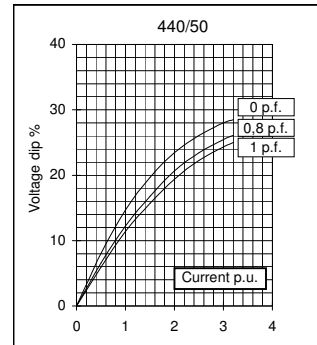
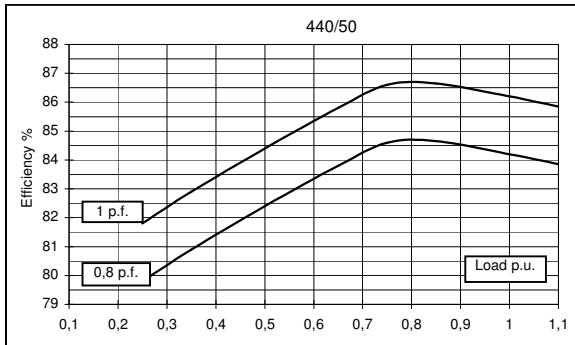
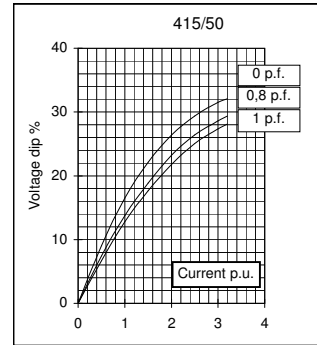
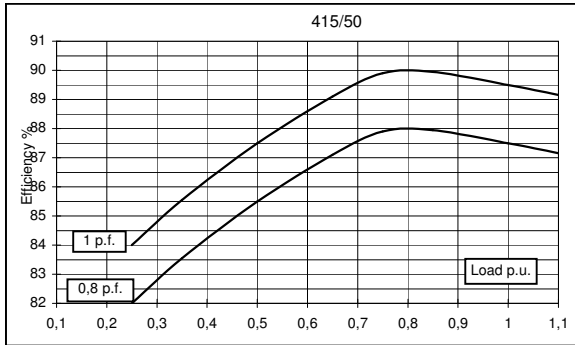
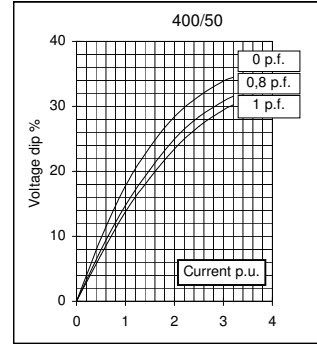
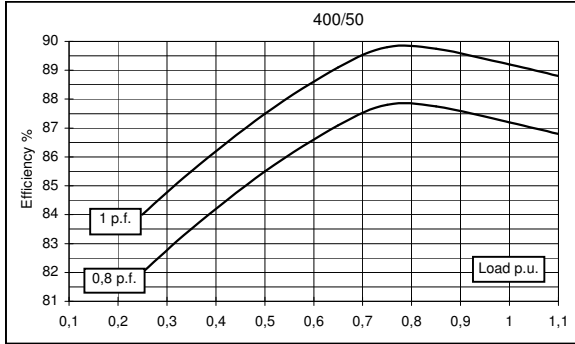
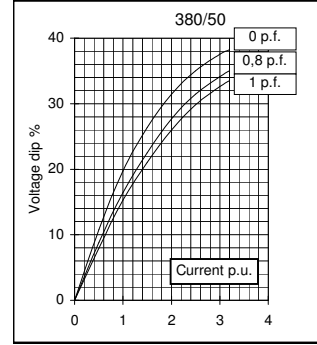
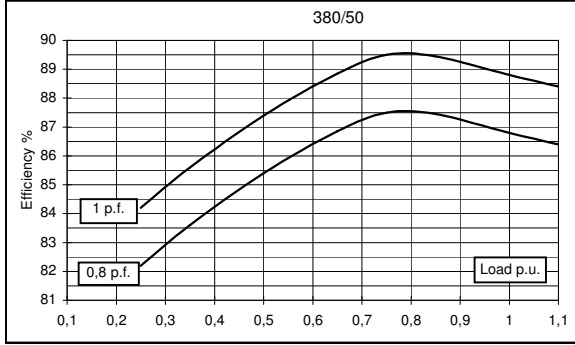
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Electrical Characteristics										
Frequency	Hz	50				60				
Voltage (star)	V	380	400	415	440	415	440	460	480	
Rated power class H	kVA	31,5	31,5	31,5	27	32	36	38	38	
	kW	25,2	25,2	25,2	21,6	25,6	28,8	30,4	30,4	
Rated power class F	kVA	30	30	30	25,5	30	34	36	36	
	kW	24	24	24	20,4	24	27,2	28,8	28,8	
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 (see graph. for details)	4/4	%	86,8	87,2	87,5	84,2	88,3	88,6	88,8	89,2
	3/4	%	87,5	87,8	87,9	84,6	89,2	89,4	89,6	89,8
	2/4	%	85,4	85,5	85,5	82,4	87,2	87,3	87,4	87,5
	1/4	%	82,2	82	82	79,8	83,2	83,2	83,2	83
Reactances (f. l.cl. F)	Xd	%	265,9	240	223,0	170,0	270,4	270,6	261,3	240
	Xd'	%	8,31	7,5	6,97	5,3	8,45	8,46	8,17	7,5
	Xd''	%	4,32	3,9	3,62	2,8	4,39	4,40	4,25	3,9
	Xq	%	141,7	127,9	118,8	90,6	144,1	144,2	139,3	127,9
	Xq'	%	141,7	127,9	118,8	90,6	144,1	144,2	139,3	127,9
	Xq''	%	23,9	21,6	20,1	15,3	24,3	24,4	23,5	21,6
	X <sub>2</sub>	%	14,07	12,7	11,80	9,0	14,31	14,32	13,83	12,7
	X <sub>0</sub>	%	4,88	4,4	4,09	3,1	4,96	4,96	4,79	4,4
	Short Circuit Ratio	Kcc		0,90	1	1,20	1,30	0,78	0,83	0,90
Time Constants	Td'	sec.	0,040							
	Td''	sec.	0,013							
	Tdo'	sec.	0,75							
	Tα	sec.	0,057							
Short Circuit Current Capacity	%	>300				>350				
Excitation at no load	Amp.	0,3	0,4	0,5	0,60	0,2	0,25	0,3	0,4	
Excitation at full load	Amp.	1,4	1,6	1,7	1,80	1,2	1,3	1,4	1,5	
Overload (long-term)	%	1 hour in a 6 hours period 110% rated load								
Overload per 20 sec.	%	300								
Stator Winding Resistance (20 °C)	Ω	0,086								
Rotor Winding Resistance (20 °C)	Ω	5,848								
Exciter Resistance (20 °C)	Ω	Rotor : 0,417				Stator : 10,60				
Heat dissipation at f.l.cl.H	W	3832	3699	3600	4053	3392	3706	3834	3681	
Telephone Interference		THF < 2%				TIF < 45				
Radio interference		EN61000-6-3, EN61000-6-1. For others standards apply to factory								
Waveform Distors.(THD) at f. load	LL/LN %	2,8 / 3								
Waveform Distors.(THD) at no load	LL/LN %	2,7 / 2,9								
Mechanical characteristics										
Protection		IP 23 (other protection on request)								
DE bearing		6309-2RS								
NDE bearing		6207-2RS								
Weight of wound stator assembly	kg	51,9								
Weight of wound rotor assembly	kg	24,1								
Weight of complete generator	kg	141								
Maximun overspeed	rpm	4500								
Unbalanced magnetic pull at f.l.cl.F	kN/mm	3,8								
Cooling air requirement	m³/min	9,7				11				
Inertia Constant (H)	sec.	0,189				0,226				
Noise level at 1m/7m	dB(A)	86 / 74				90,5 / 78				

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

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**50 Hz**



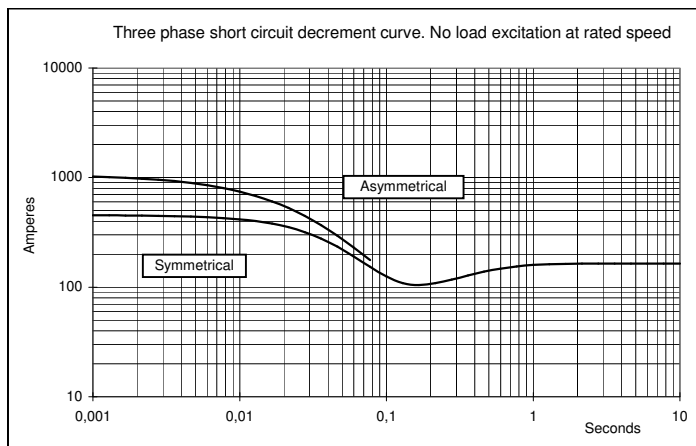
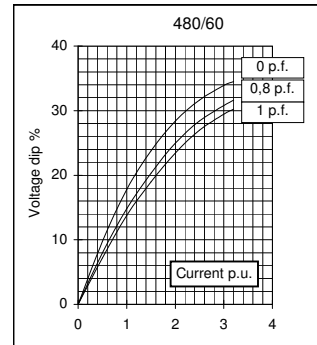
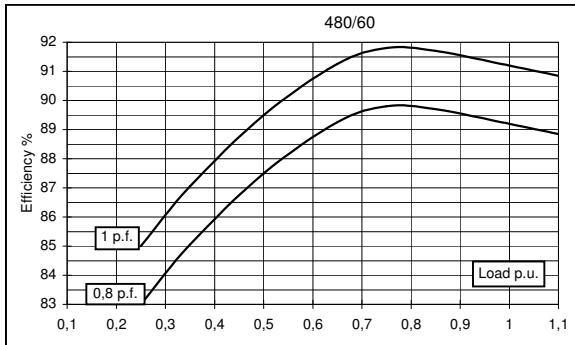
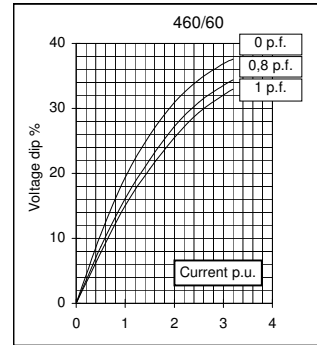
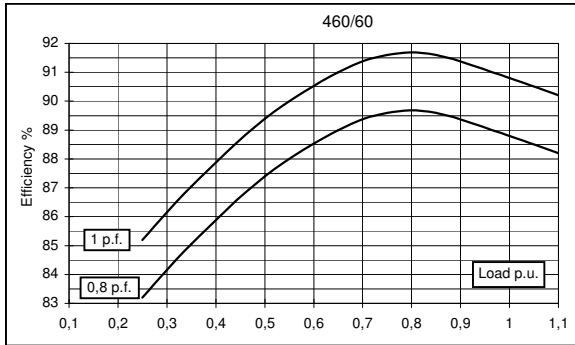
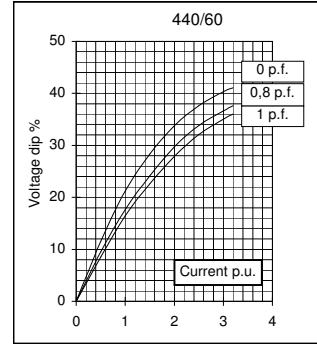
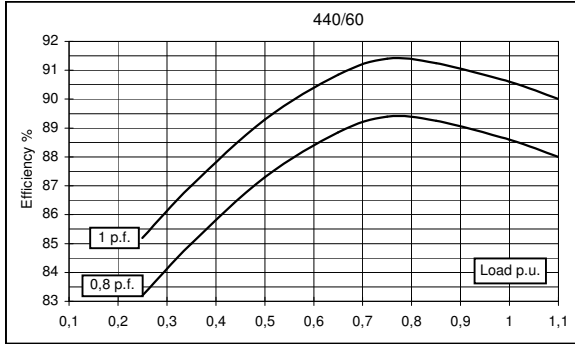
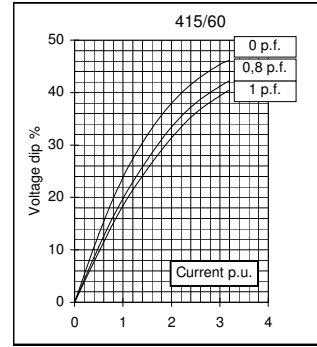
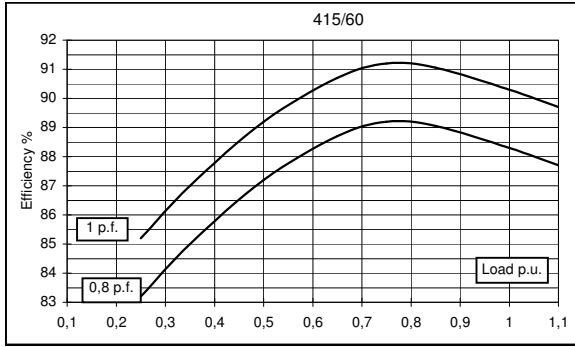


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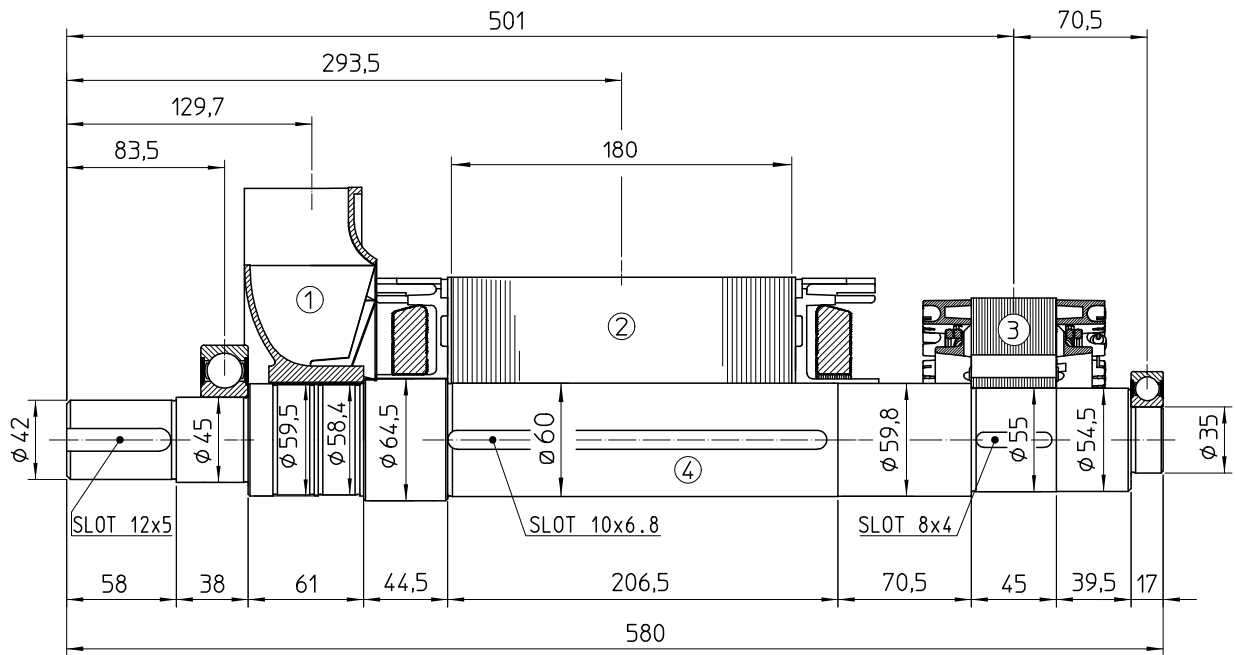
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## 60 Hz

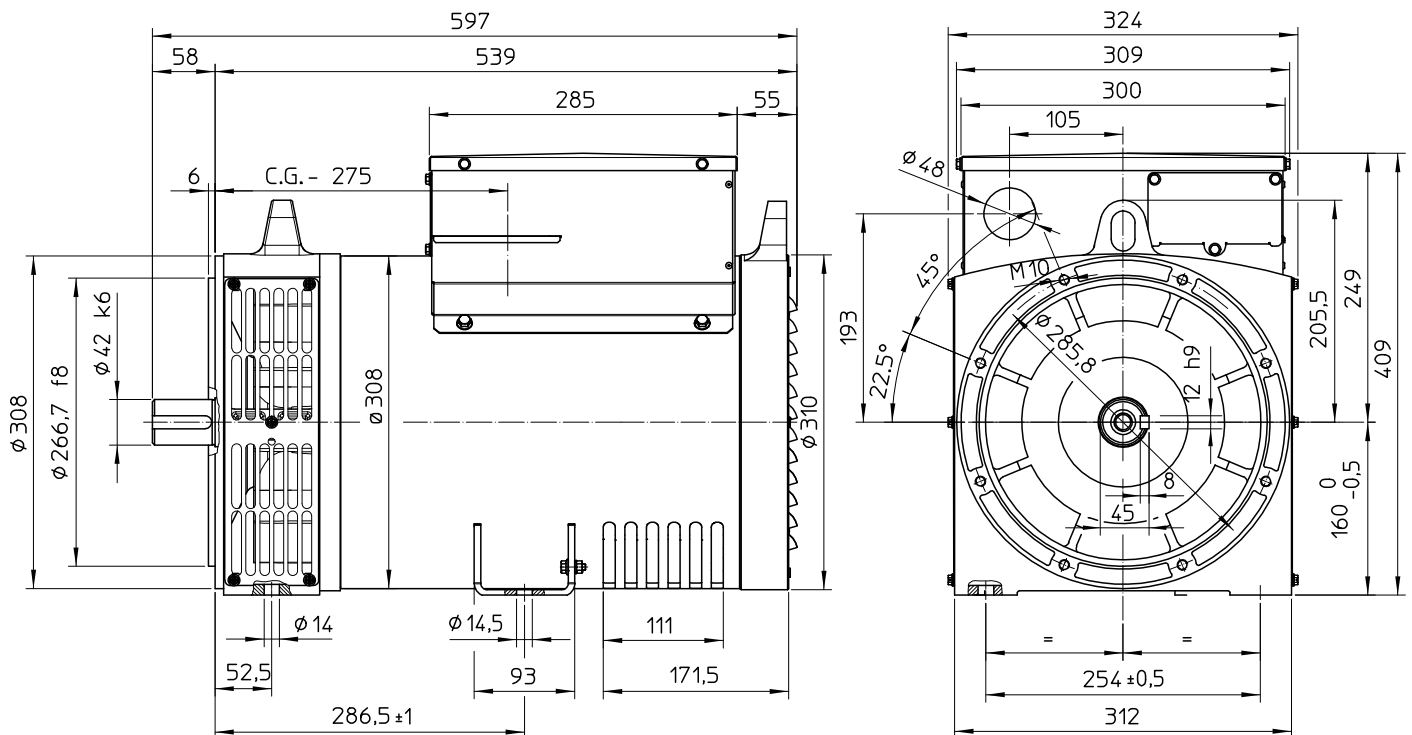


### TWO BEARING MOMENTS OF INERTIA



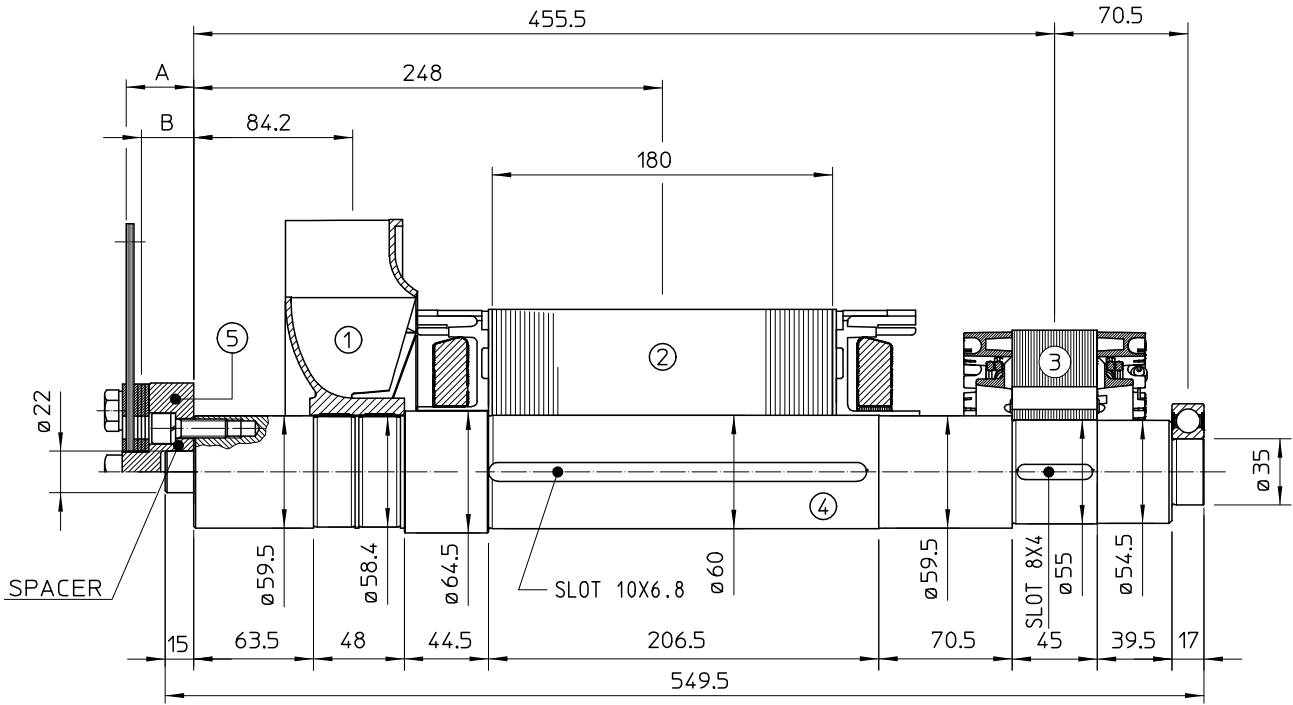
POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	1.2	0.0087
2	MAIN ROTOR	24.1	0.0898
3	EX. ROTOR	5.5	0.0172
4	SHAFT	11	0.0047
TOTAL		41.8	0.1204

### TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

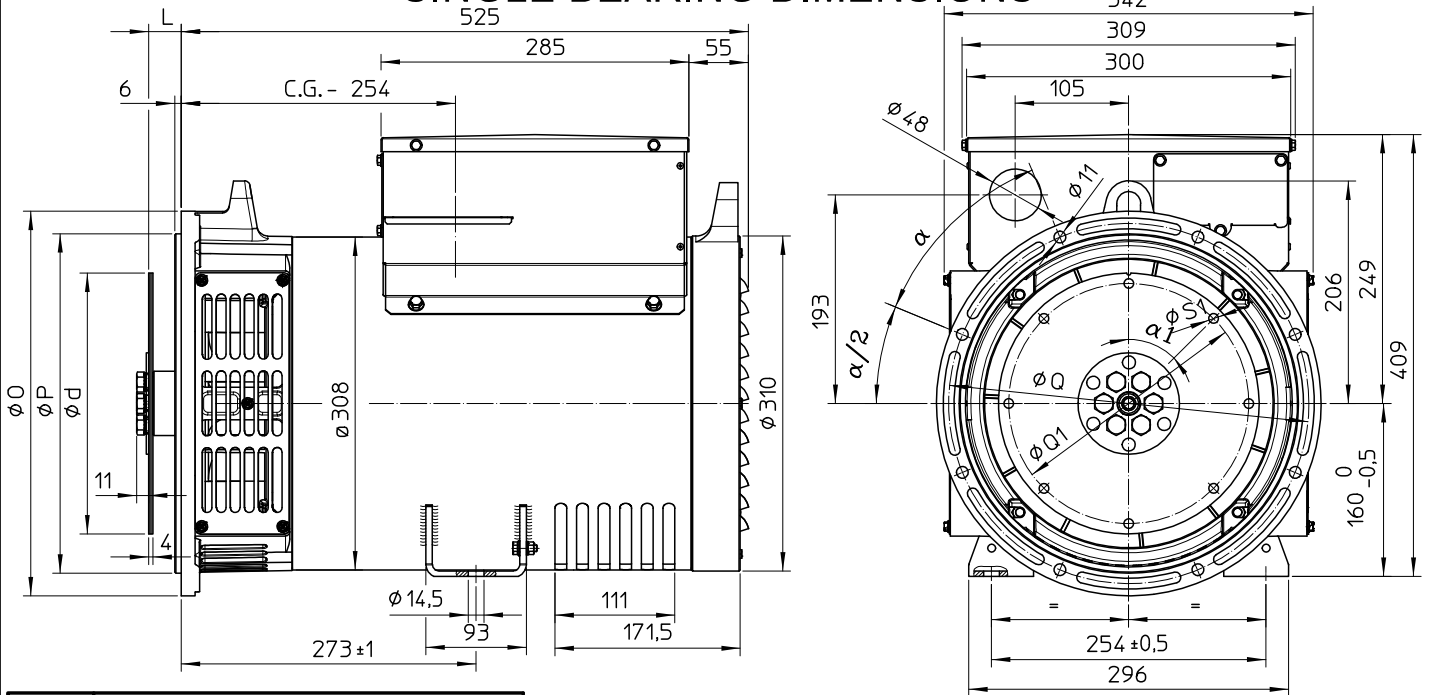
### SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	1.2	0.0087
2	MAIN ROTOR	24.1	0.0898
3	EX. ROTOR	5.5	0.0172
4	SHAFT	11	0.0047
TOTAL		41.8	0.1204

SAE N°	5		SHAFTS COUPLING FLEX PLATE	
	A	B	WEIGHT kg	J kgm <sup>2</sup>
6 1/2	4	2	1.08	0.0065
7 1/2	4	2	1.35	0.0101
8	35.6	28.3	2.84	0.0158
10	27.6	22.9	3.25	0.0303
11 1/2	14	11.2	3.6	0.471

### SINGLE BEARING DIMENSIONS



SAE N.	GIUNTI A DISCHI / DISC COUPLING DISCQUE DE MONOPALIER / SCHEIBENKUPPLUNG				
	d	L	Q1	S1	α <sub>1</sub>
6 1/2	215.9	30.2	200	9	60°
7 1/2	241.3	30.2	222.25	9	45°
8	263.52	62	244.47	11	60°
10	314.32	53.8	295.27	11	45°
11 1/2	352.42	39.6	333.37	11	45°

SAE N.	FLANGIA / FLANGE BRIDE / FLANSCH			
	O	P	Q	α
5	356	314.3	333.4	45°
4	403	362	381	30°
3	451	409.6	428.6	30°
2	490	447.7	466.7	30°

C.G.= GRAVITY CENTER