



# GENERATOR TYPE ECP 3-1L/4

Document : **DS150A/1**

issue 002 date 29/04/2014

Electrical Characteristics										
Frequency	Hz	50				60				
Voltage (series star)	V	380	400	415	440	415	440	460	480	
Rated power class H	kVA	11	11	11	9	12	13,2	13,2	13,2	
	kW	8,8	8,8	8,8	7,2	9,6	10,6	10,6	10,6	
Rated power class F	kVA	10	10	10	8	10	12	12	12	
	kW	8	8	8	6,4	8	9,6	9,6	9,6	
Regulation with	DSR	±1 % with any power factor and speed variations between -5% +30%								
Insulation class		H								
Execution		Brushless								
Stator winding		12 ends								
Rotor		without damping cage								
Efficiencies class H	4/4	%	85,8	85,9	85,6	85,4	87	87,5	87,6	87,7
(see graph. for details)	3/4	%	86,1	86,4	86,3	86	87,2	87,4	87,6	87,8
	2/4	%	84,3	84,4	84,4	84,1	85,1	85,2	85,3	85,4
	1/4	%	81,1	81	80,8	80,3	81,8	81,6	81,7	82
Reactances (f. l.cl. F)	Xd	%	238,2	215	199,7	145,4	261,5	255,9	234,1	215
	Xd'	%	23,8	21,5	20	14,5	26,1	25,6	23,4	21,5
	Xd''	%	16,8	15,2	14,1	10,3	18,5	18,1	16,6	15,2
	Xq	%	76,2	68,8	63,9	46,5	83,7	81,9	74,9	68,8
	Xq'	%	76,2	68,8	63,9	46,5	83,7	81,9	74,9	68,8
	Xq''	%	88,5	79,9	74,2	54	97,2	95,1	87	79,9
	X <sub>2</sub>	%	20,3	18,3	17	12,4	22,3	21,8	19,9	18,3
	X <sub>0</sub>	%	6,6	6	5,6	4,1	7,3	7,1	6,5	6
Short Circuit Ratio	Kcc		0,73	0,90	1,06	1,50	0,60	0,68	0,73	0,90
Time Constants	Td'	sec.	0,036							
	Td''	sec.	0,013							
	Tdo'	sec.	0,79							
	Tα	sec.	0,046							
Short Circuit Current Capacity		%	>300				>320			
Excitation at no load	Amp.		0,32	0,34	0,38	0,45	0,2	0,22	0,25	0,3
Excitation at full load	Amp.		1,4	1,46	1,55	1,6	1,1	1,28	1,32	1,4
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.		%	300							
Stator Winding Resistance (20°C)	Ω		0,457							
Rotor Winding Resistance (20°C)	Ω		8,539							
Exciter Resistance (20 °C)	Ω		Rotor : 1,453				Stator : 15,71			
Heat dissipation at f.l.cl.H	W		1456	1444	1480	1231	1434	1509	1495	1481
Telephone Interference			THF < 2%				TIF < 45			
Radio interference			EN61000-6-3, EN61000-6-2. For others standards apply to factory							
Waveform Distors.(THD) at f. load	LL/LN %		2,3 / 2							
Waveform Distors.(THD) at no load	LL/LN %		2,6 / 2,6							
<b>Mechanical characteristics</b>										
Protection			IP 23 (other protection on request)							
DE bearing			6308-2RS							
NDE bearing			6305-2RS							
Weight of wound stator assembly	kg		22,8							
Weight of wound rotor assembly	kg		19							
Weight of complete generator	kg		79							
Maximun overspeed	rpm		2250							
Unbalanced magnetic pull at f.l.cl.F	kN/mm		2,9							
Cooling air requirement	m³/min		3,3				4			
Inertia Constant (H)	sec.		0,082				0,1178			
Noise level at 1m/7m	dB(A)		72 / 58				78 / 60			

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

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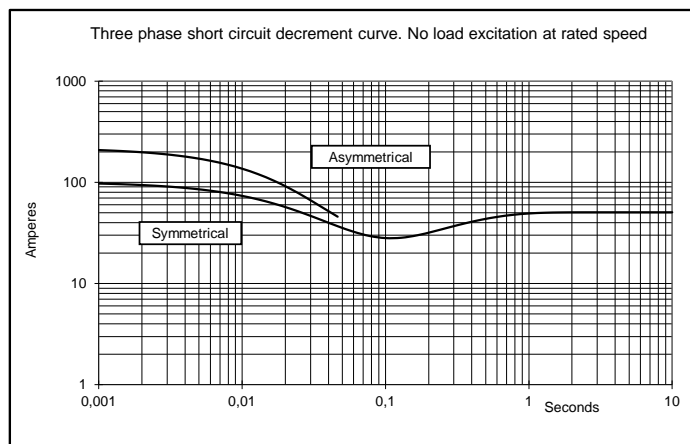
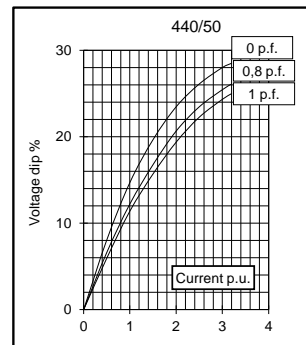
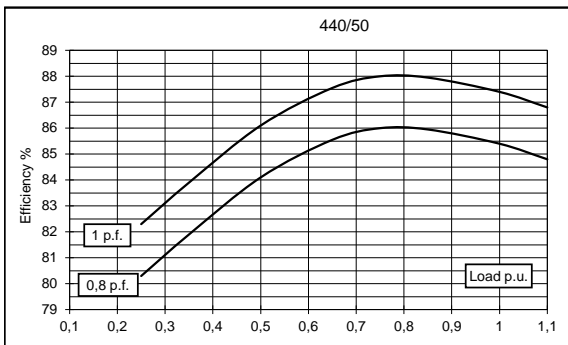
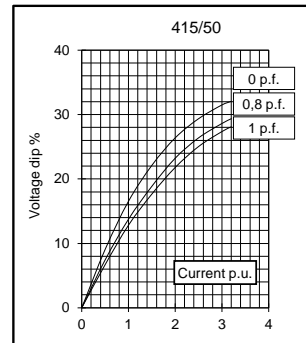
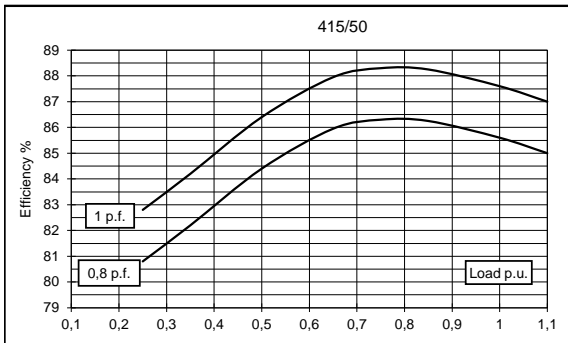
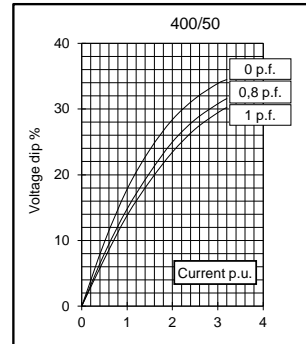
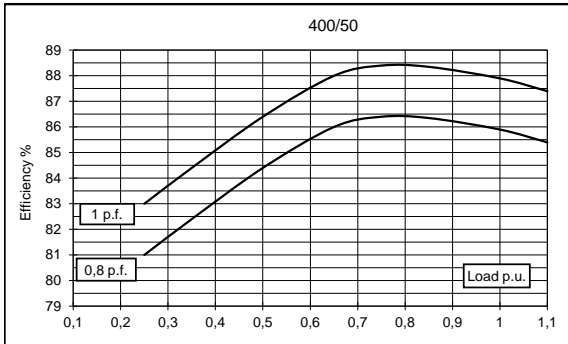
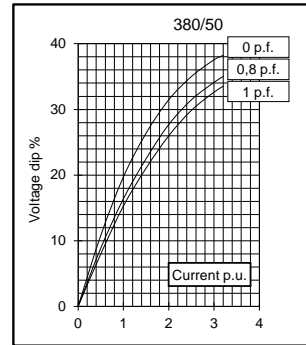
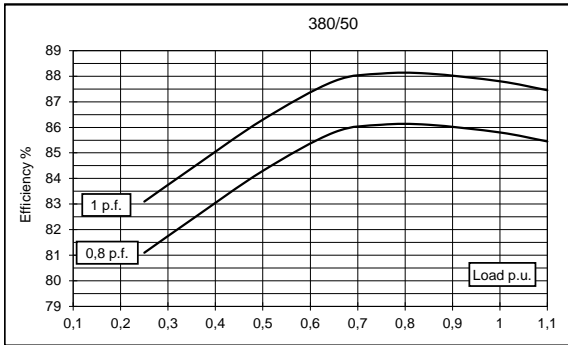


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Document : DS150A/2

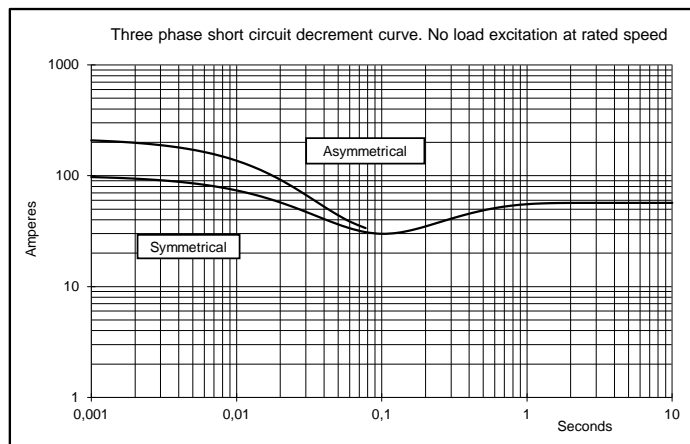
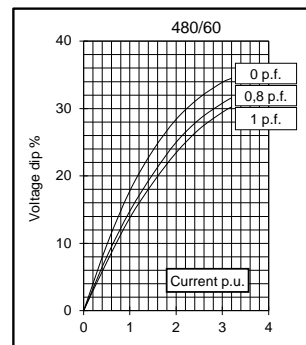
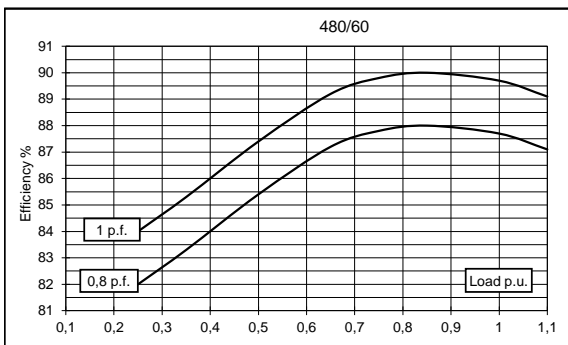
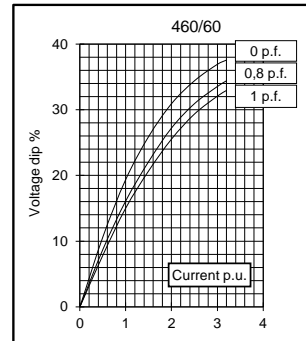
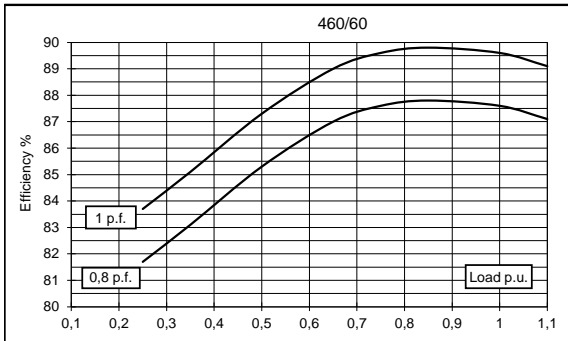
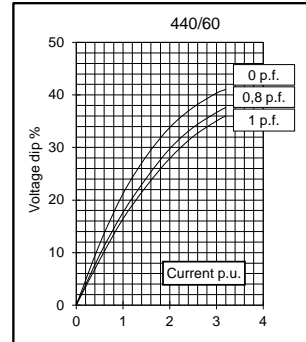
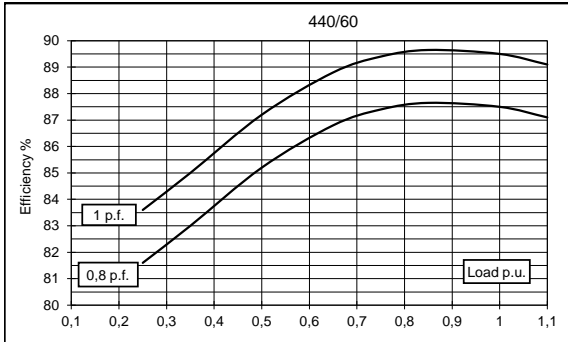
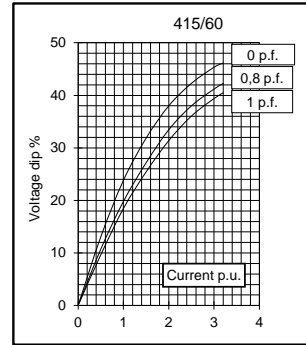
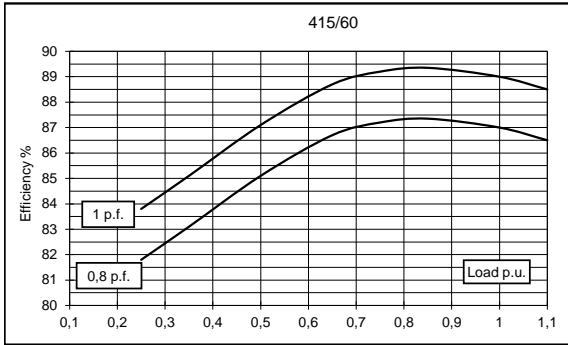
issue 002 date : 29/04/2014

## 50 Hz



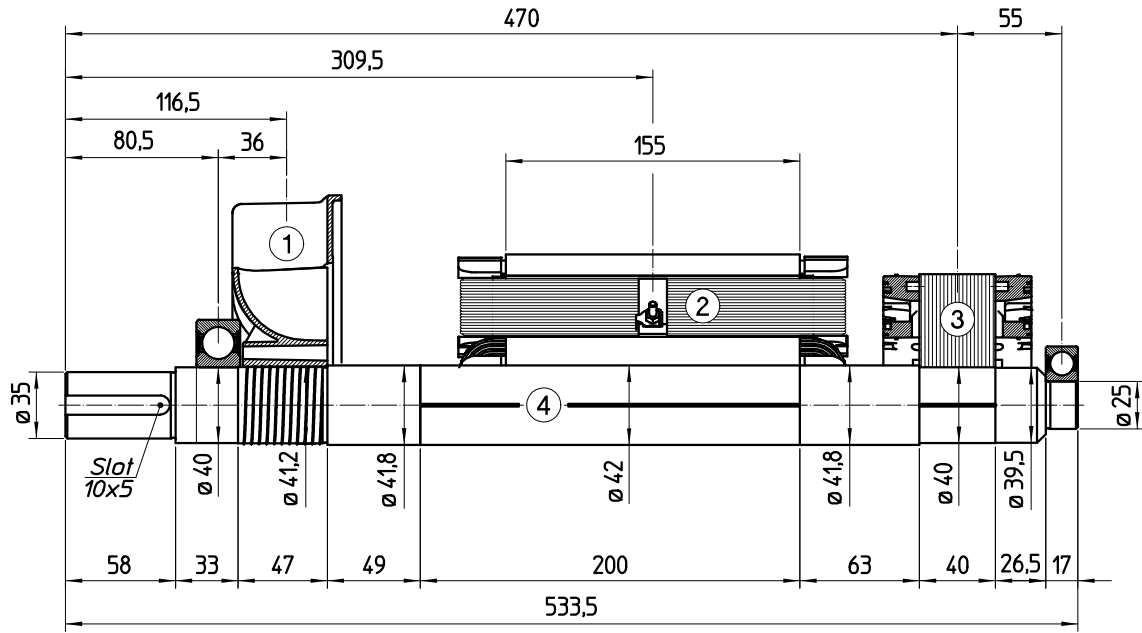
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**60 Hz**



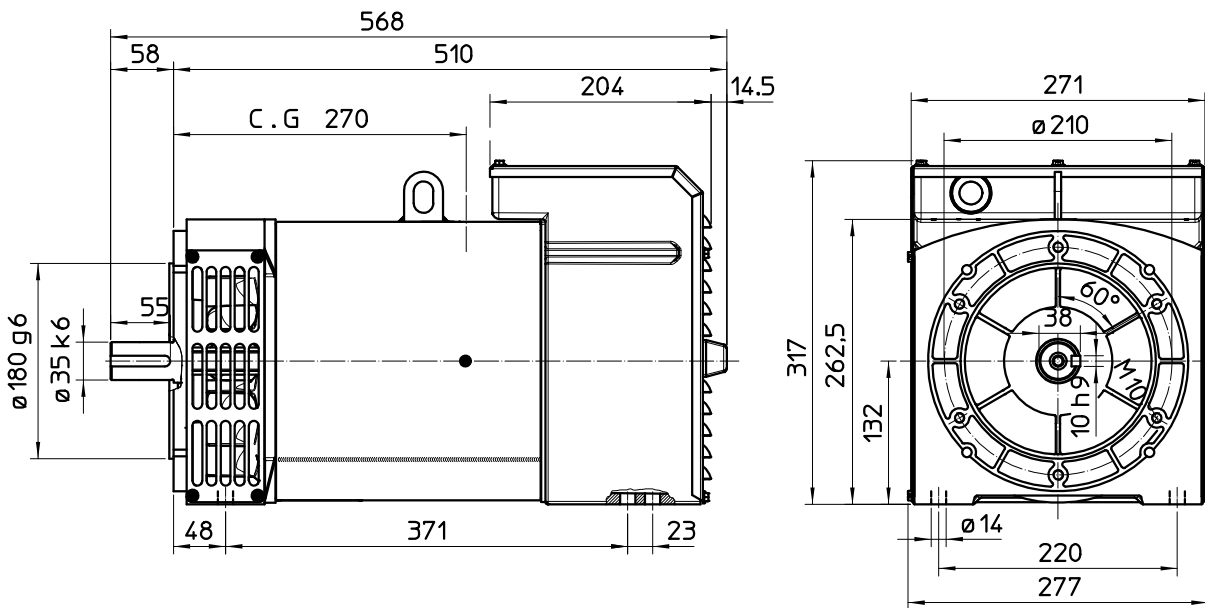
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### TWO BEARING MOMENTS OF INERTIA

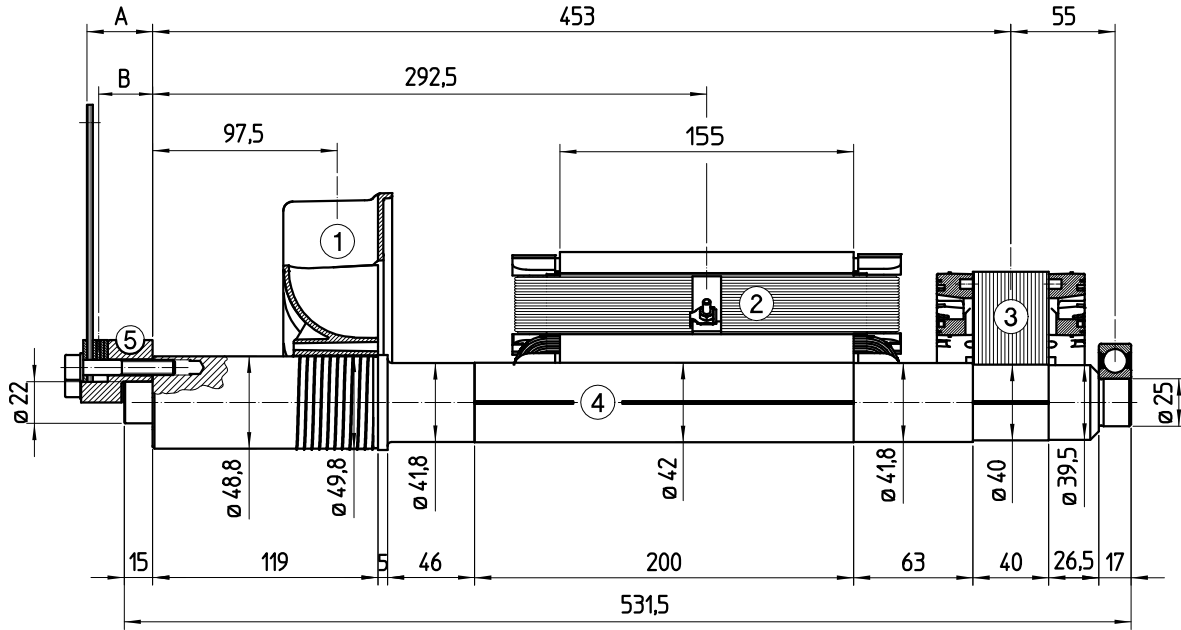


POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	0,4	0,00206
2	MAIN ROTOR	19,0	0,05838
3	EX. ROTOR	4,2	0,01086
4	SHAFT	5,2	0,00101
TOTAL		28,8	0,07231

### TWO BEARING DIMENSIONS



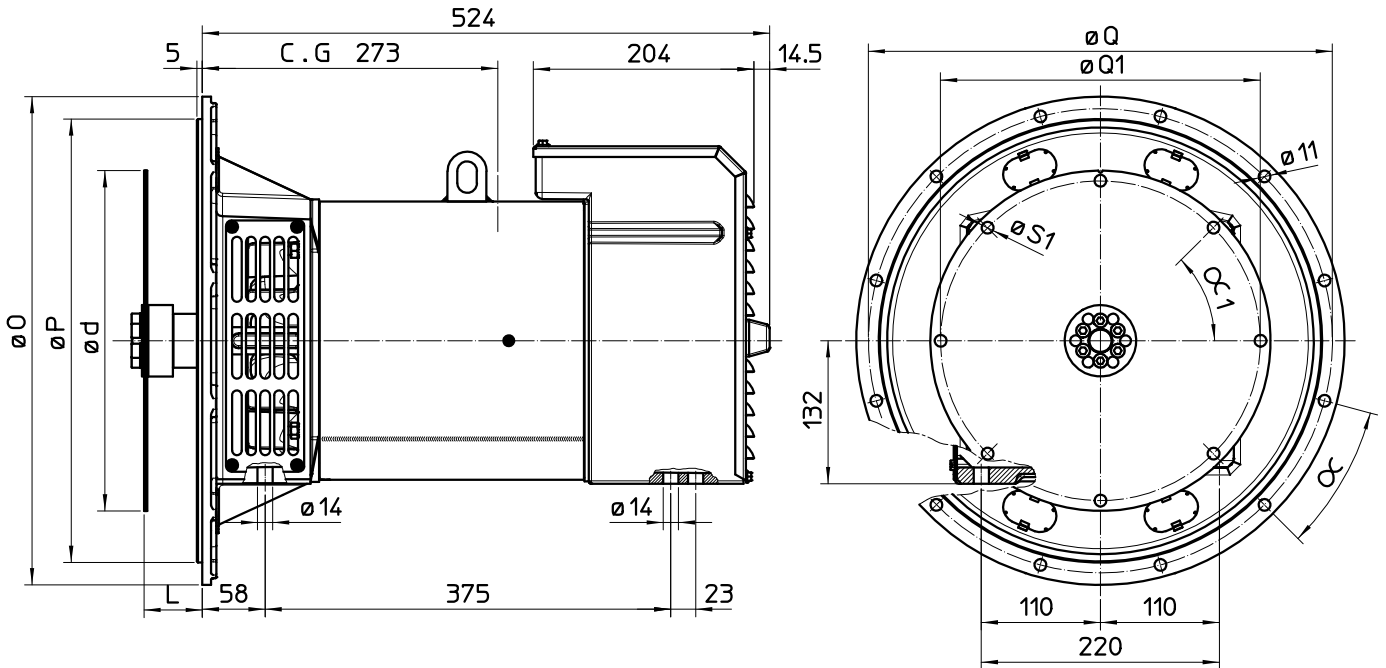
SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm <sup>2</sup> )
1	FAN	0,4	0,00206
2	MAIN ROTOR	19,0	0,05838
3	EX. ROTOR	4,2	0,01086
4	SHAFT	5,8	0,00140
TOTAL		29,4	0,07270

SAE N°	SHAFTS COUPLING FLEX PLATE			
	A	B	WEIGHT kg	J kgm <sup>2</sup>
5				
6 1/2	3	1,5	1,00	0,00495
7 1/2	3	1,5	1,20	0,00769
8	34,6	29,5	1,75	0,01114
10	26,6	23,5	2,14	0,02220
11 1/2	13	11	2,60	0,03524

SINGLE BEARING DIMENSIONS



GIUNTO A DISCO / COUPLING DISC PLATEX						
SAE	L	d	Q1	Fori N° Holes N°	S1	α <sub>1</sub>
6 ‡	30,2	215,9	200	6	9	60°
7 ‡	30,2	241,3	222,25	8	9	45°
8	62	263,52	244,47	6	11	60°
10	53,8	314,52	295,27	8	11	45°
11 ‡	39,6	352,42	333,37	8	11	45°

FLANGIE / FLANGE					
SAE	O	P	Q	Fori N° Holes N°	α
6	308	266,7	285,75	8	22°30'
5	356	314,3	333,4	8	22°30'
4	403	362	381	12	15°
3	451	409,6	428,6	12	15°

C.G.= GRAVITY CENTER