

DATA SHEET

Synchronous Alternator



Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: GTA251AIHE	Product code	: 13943286
Area classification	: Safe		1004243231

General data		Degree of protection	: IP23
Frame (IEC)	: 250	Mounting style	: B15T
Insulation Class	: 180°C (H)	Number of poles	: 4
THD (L-L, no load)	: ≤ 3%	Type of Pole	: Salient
Stator winding pitch	: 2/3	Rated speed - 50 Hz	: 1500 rpm
Altitude	: up to 1000 m.a.s.l	Nominal rotation - 60 Hz	: 1800 rpm
Number of Leads	: 12	Overspeed	: 2250 rpm
Power factor	: 0.8 to 1.0	Approx. weight	: 460 kg
Excitation system	: Brushless with Auxiliary Coil	Overload	: 1.1x In per 1h each 6h
Cooling	: IC01	Momentary Overload	: 1.5x In per 30s

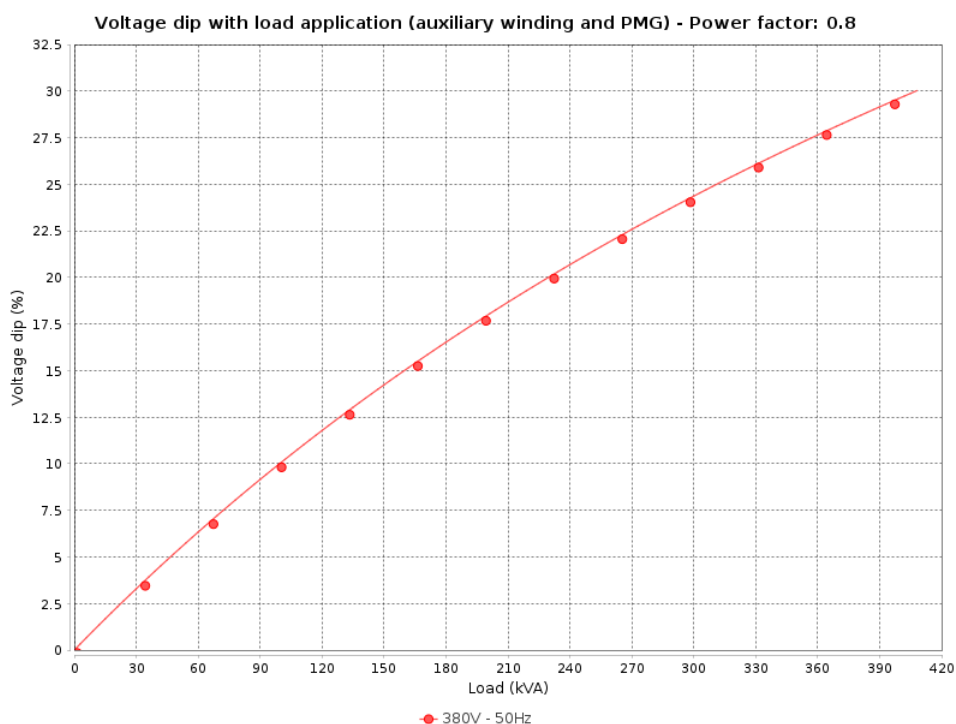
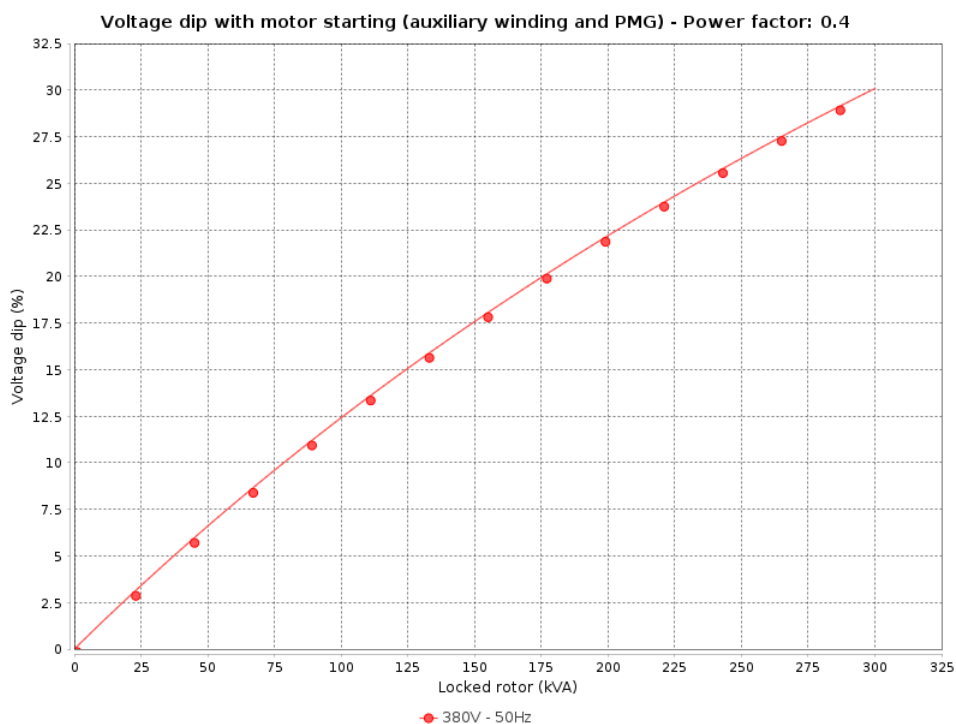
Frequency and number of phases	50 Hz				60 Hz														
	3ph		1ph		3ph		1ph												
Voltages (V)	Y (series star) connection	380	400	415	-	380	416	440	480	-									
	YY (parallel star) connection	190	200	208	-	190	208	220	240	-									
	Δ (series delta) connection	220	230	239	-	220	240	254	277	-									
	ΔΔ (parallel delta) connection	110	115	120	-	110	120	127	138	-									
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	-	220 - 240									
Output power (kVA)	Continuous 80/40	128.0	143.0	136.0	73.9	154	164	171	180	98.9									
	Continuous 105/40	147.0	164	156	84.7	176	188	196	206	113.3									
	Continuous 125/40	160	180	171	92.4	192	205	214	225	123.6									
	Standby 150/40	165	196	187	101.2	205	220	230	243	135.4									
	Standby 163/27	170	206	195	105.5	214	229	240	252	141.1									
Electrical data (FP=0.8 / Continuous 125/40 (H)) Saturated reactances values	Xd(%) Dir. axis synchronous reactance	366.4	372.6	353.9	488.6	524.9	469.2	438.2	388.07	584.34									
	X'd(%) Dir. axis transient reactance	21.6	21.9	20.8	28.76	31.0	27.6	25.8	22.82	34.44									
	X''d(%) Dir. axis subtrans. reactance	15.0	15.2	14.5	20.02	21.6	19.2	18.0	15.88	23.97									
	Xq(%) Quad. axis sync. reactance	141.3	143.7	136.5	188.46	202.4	200.4	169.0	149.68	225.39									
	X''q(%) Quad. axis subtrans. react.	16.9	17.1	16.3	22.49	24.3	34.6	20.2	17.84	26.92									
	X2(%) Negative sequence reactance	15.9	16.1	15.3	21.18	22.9	26.9	19.0	16.81	25.36									
	X0(%) Zero sequence reactance	2.5	2.5	2.4	3.34	3.6	3.2	3.0	2.65	3.99									
	T'd(ms) Short Circ. Trans. time const.	56.4	56.4	56.4	75.2	56.4	86.9	56.4	56.4	75.2									
	T''d(ms) Short Circ. Sub. time const.	1.6	1.6	1.6	2.13	1.6	2.3	1.6	1.6	2.13									
	T'do(ms) Open Circ. time const Trans	988	990	990	1317.72	983	1732	987	989.61	1316.46									
	T''do(ms) Open Circ. time const Subt	2.2	2.2	2.2	2.89	2.2	3.1	2.2	2.17	2.89									
	Ta(ms) Armature time const.	8	8	8	11.12	8	14	8	8.34	11.12									
	uc(V) Full load excitation voltage	46.0	50.3	50.3	45.96	46.5	47.3	48.2	50.35	48.17									
	ic(A) Full load excitation current	3.8	4.1	4.1	3.78	3.8	3.9	4.0	4.14	3.96									
ic(A) No load excitation current	0.6	0.8	0.8	0.8	0.6	0.8	0.9	1.3	1.2										
Icc(A) Sustained Short-Circ. Current	729	779	713	692.82	875	807	842	811.9	772.41										
Kcc Short-circuit ratio	0.29	0.3	0.28	0.38	0.18	0.21	0.23	0.29	0.31										
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0		
	25% of load	84.8	88	85.6	88.6	85.9	89	78	80.9	86.7	89.5	87.1	89.8	87.4	90.2	87.5	90.3	80.4	82.9
	50% of load	88.1	90.9	88.4	91.2	88.8	91.5	81	83.6	88.7	91.2	89.2	91.7	89.6	92.1	89.9	92.4	82.4	84.8
	75% of load	87.9	90.9	88	91.1	88.4	91.4	80.9	83.6	87.8	90.6	88.5	91.2	89	91.7	89.6	92.3	81.9	84.4
	100% of load	86.9	90.1	86.8	90.2	87.2	90.6	80	82.9	86.3	89.3	87.1	90.1	87.8	90.7	88.5	91.5	80.8	83.5
	125% of load	85.5	89	85.3	89.1	85.6	89.5	78.7	81.9	84.5	87.8	85.5	88.8	86.3	89.5	87.1	90.5	79.4	82.4

Other characteristics		Automatic voltage regulator		According to:	
Air flow	: 1.4 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 12.17 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.03877 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 1.0 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 1.42 kgm²	Droop / TC	: Yes	CSA	
NDE Bearing	: 6214-2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 3	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 11,5	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

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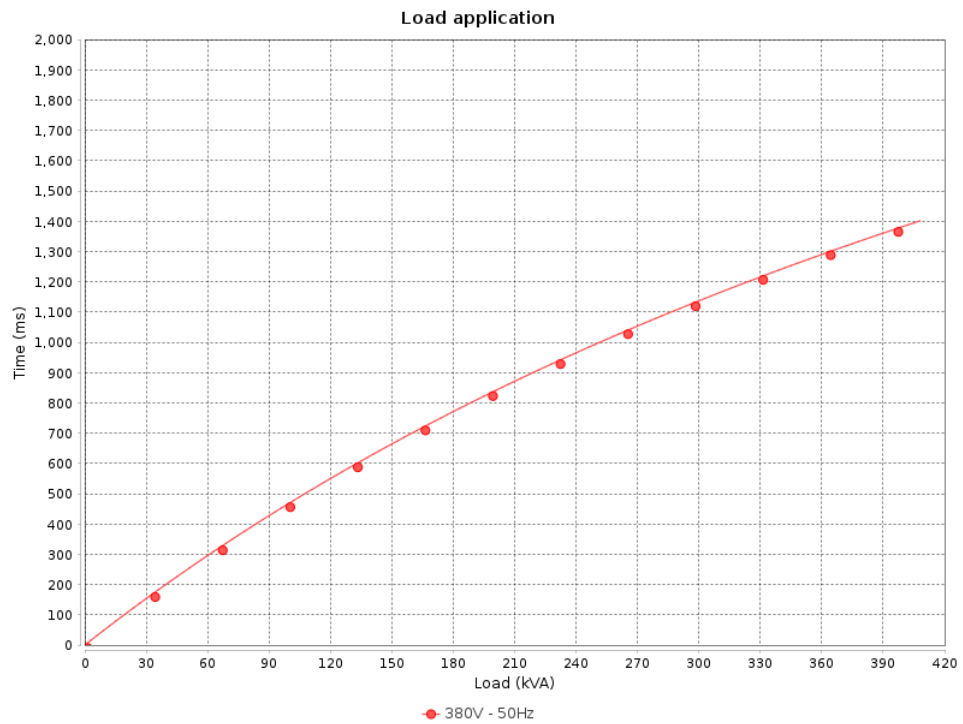
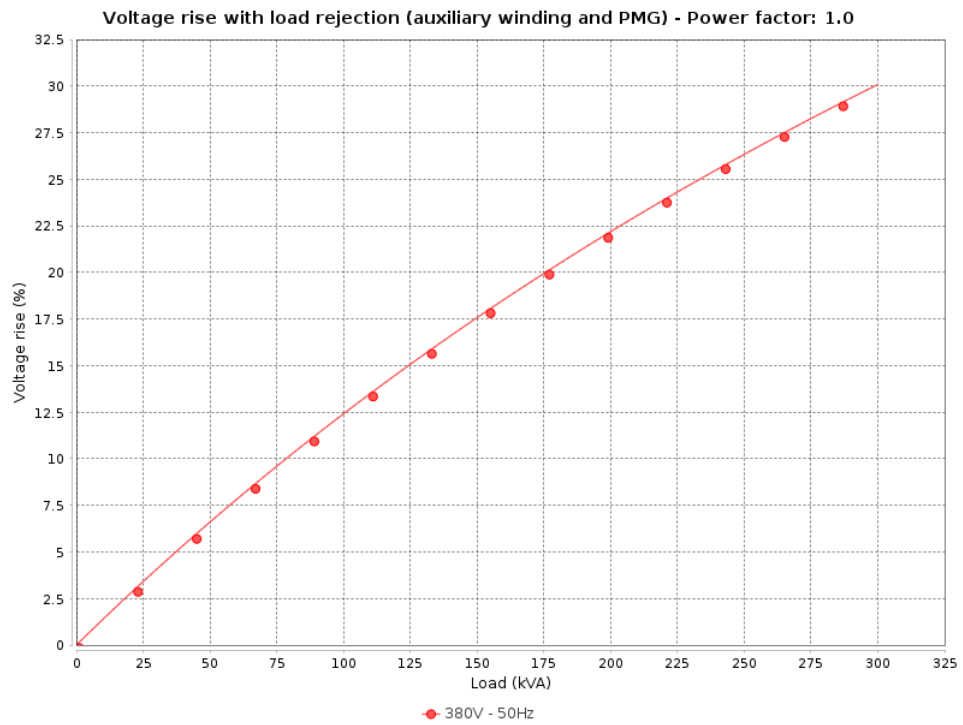
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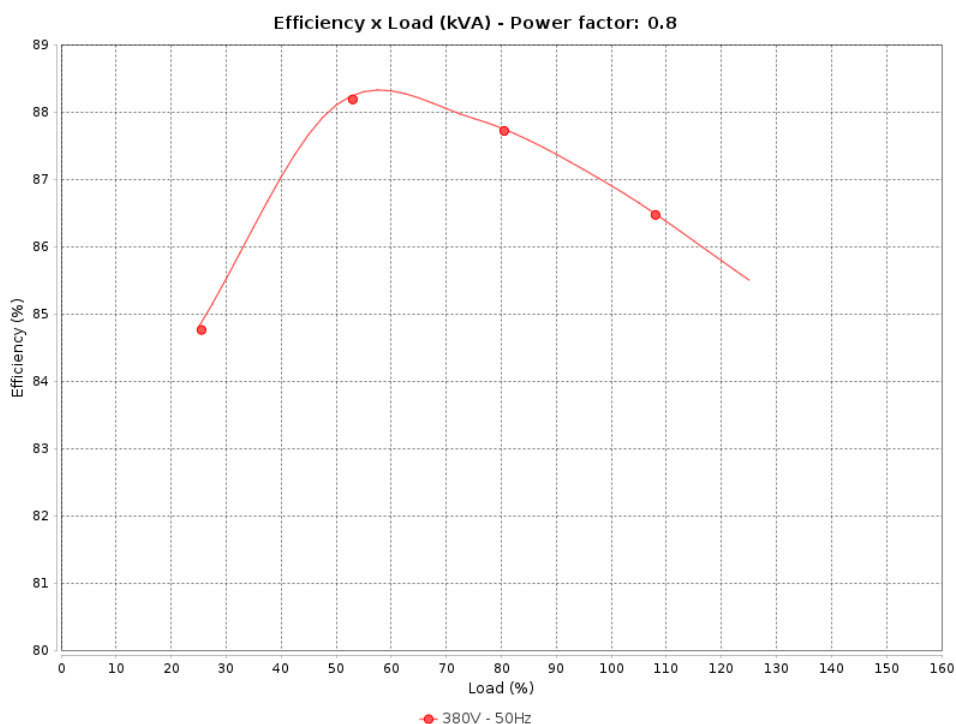
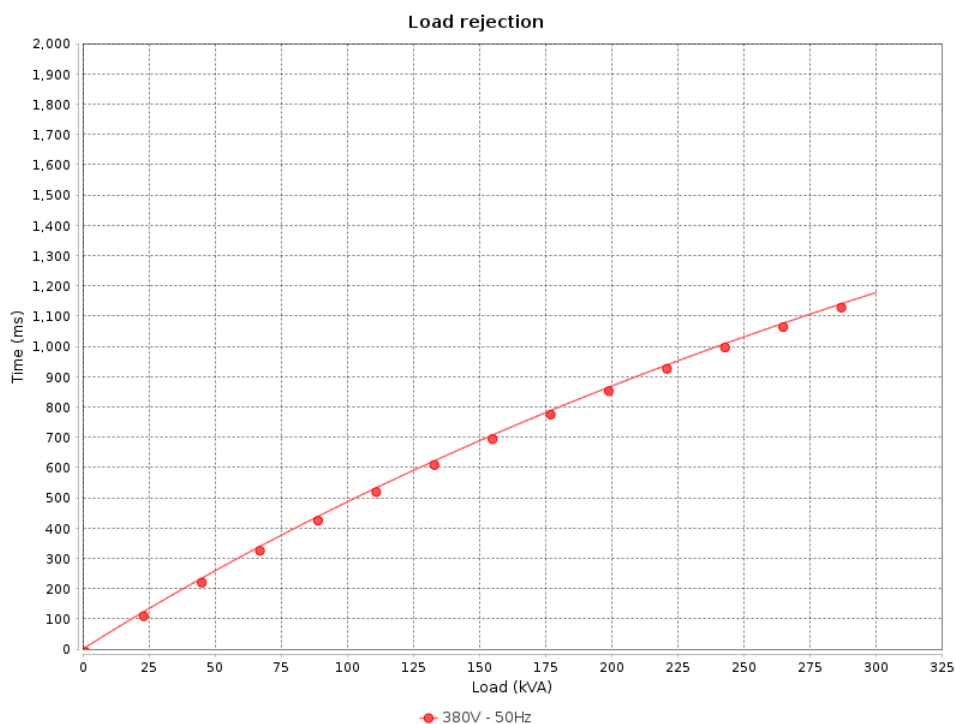
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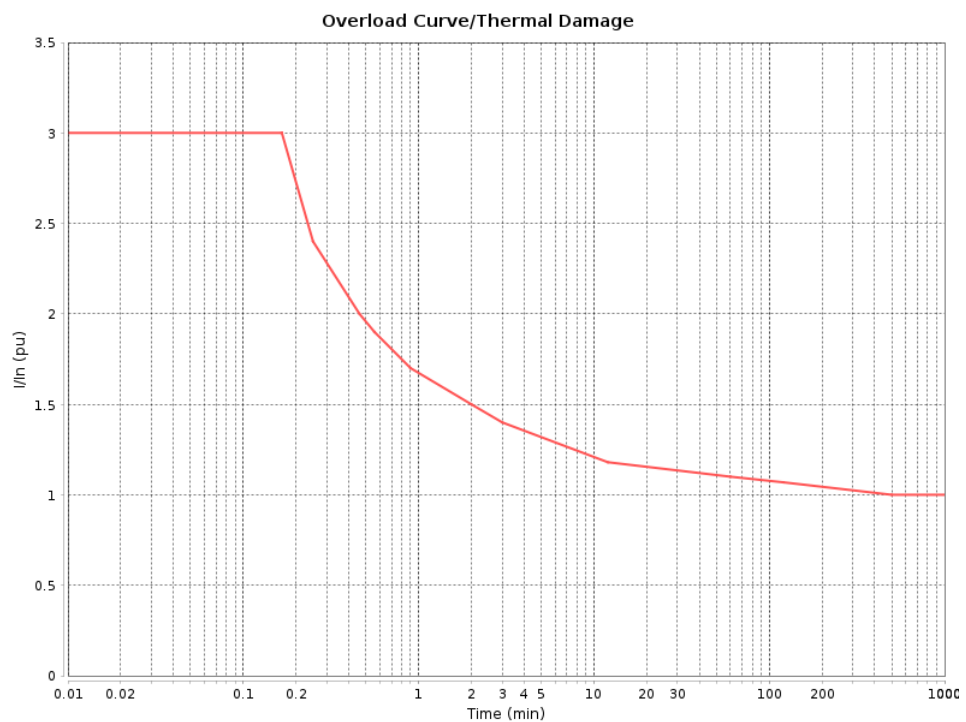
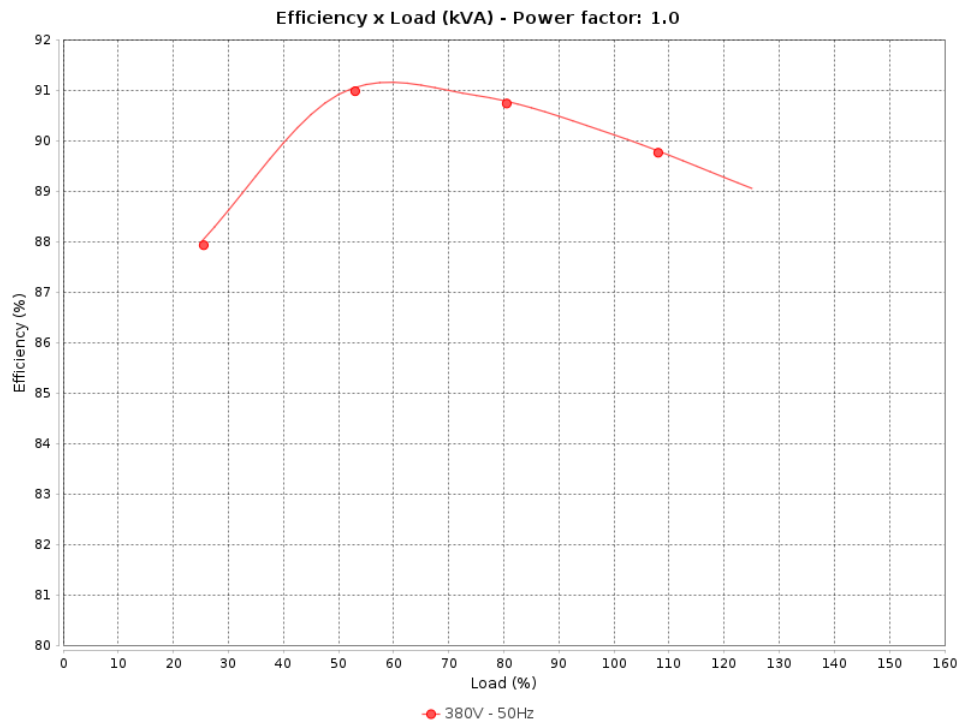
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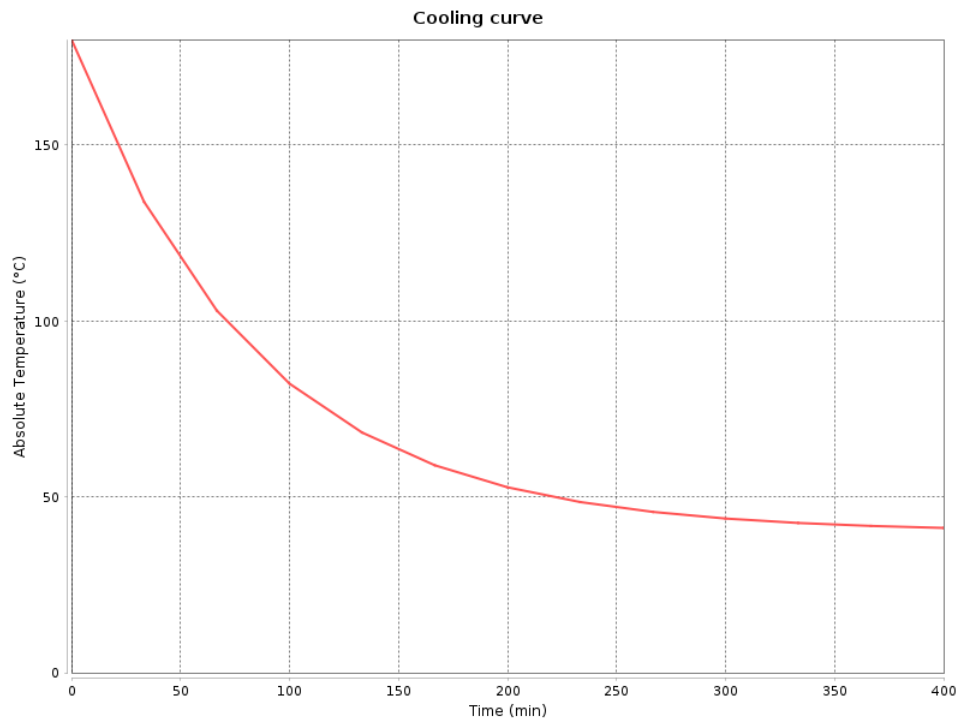
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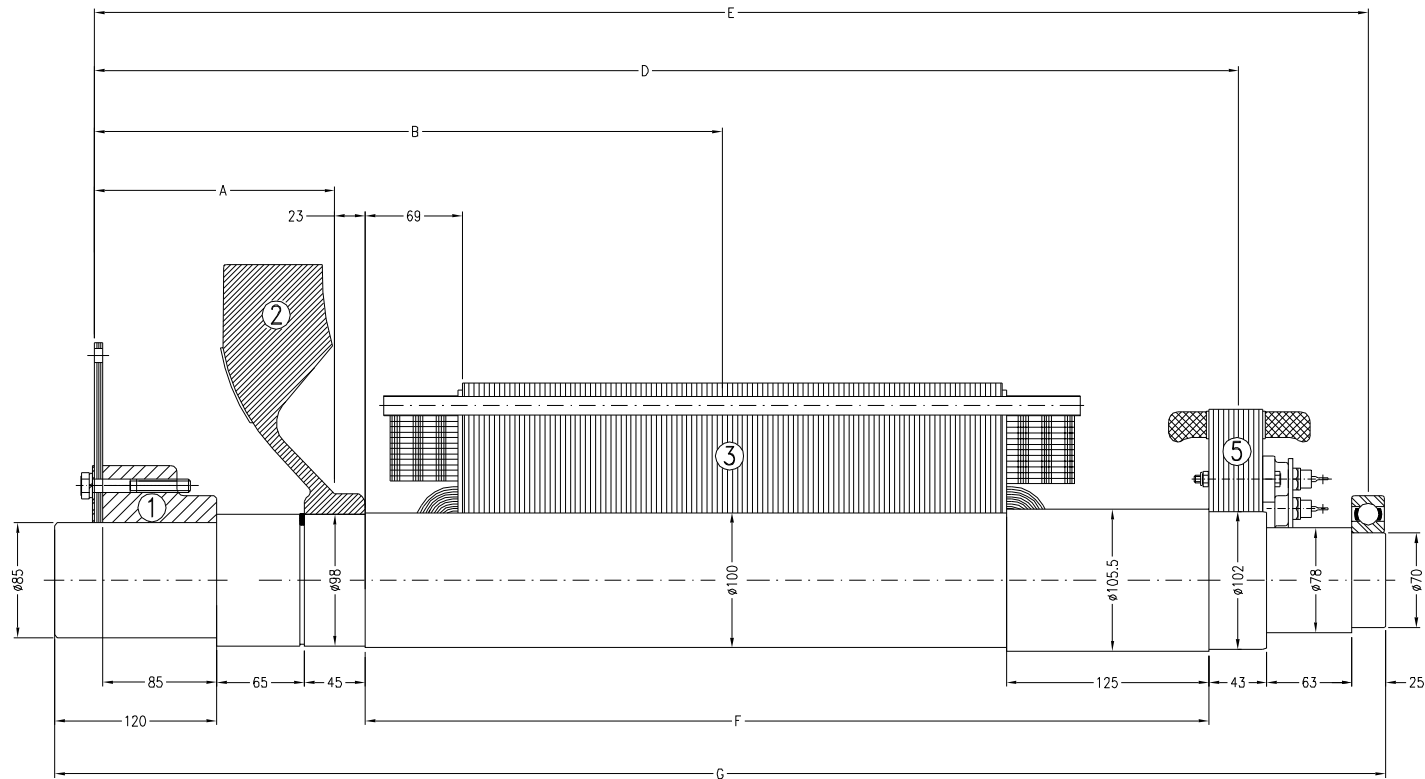
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



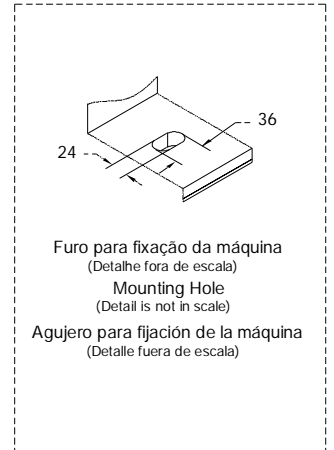
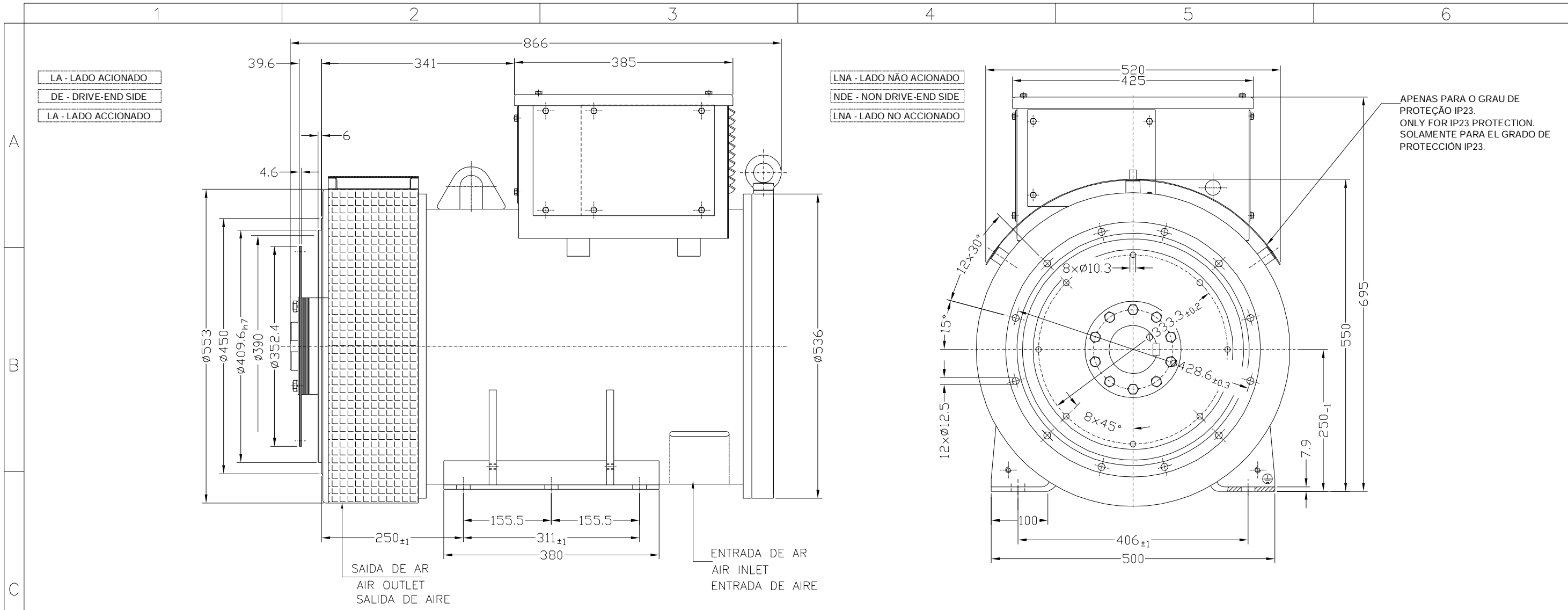
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TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm						1		2		3		5		Total Weight	Total Mom. Iner.										
TYPE	DISCS	A	B	C	D	E	F	G	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J									
GTA 251 __HD	SAE 14	176.0	348.0	---	694.0	792.0	475	836	17.0	0.27	1.7	0.043	109.0	1.24	14.0	0.14	141.7	1.69									
GTA 251 __HE			363.0	---															844.0	942.0	625	986	138.0	1.56	170.7	2.01	
GTA 252 __VB			403.0	---	468.0	155.0	1.76	187.7																			2.21
GTA 252 __II			443.0	---																							
GTA 252 __IR			468.0	---																							

TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm						1		2		3		5		Total Weight	Total Mom. Iner.										
TYPE	DISCS	A	B	C	D	E	F	G	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	WEIGHT MASSA kg	MOMENT MOMENTO kgm ²	kg	J									
GTA 251 __HD	SAE 11.5	190.0	362.0	---	708.0	806.0	475	836	15.0	0.12	1.7	0.043	109.0	1.24	14.0	0.14	139.7	1.54									
GTA 251 __HE			377.0	---															858.0	956.0	625	986	138.0	1.56	168.7	1.86	
GTA 252 __VB			417.0	---	482.0	155.0	1.76	185.7																			2.06
GTA 252 __II			457.0	---																							
GTA 252 __IR			482.0	---																							

PESO BRUTO / GROSS WEIGHT		kg		PESO LÍQUIDO / NET WEIGHT		kg		ESC / SCALE	1:3.84		
EMISSÃO INICIAL / INITIAL EMISSION											
EXEC / EXECUTED	LOC / LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS					EXECUTADO / EXECUTED	VERIFICADO / CHECKED	LIBERADO / RELEASED	DATA / DATE	VER / VER
EXEC / EXECUTED		ANÁLISE TORSIONAL LINHA G-PLUS 250 B15									
VERIF. / CHECKED							10009091382				
LIBER. / RELEASED							000		00		
DATA LB / REL DT	WEN	JARAGUA DO SUL	ENGENHARIA DO PRODUTO	FOLHA / SHEET	1 / 1						



PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE				
ECM ECM	LOC LOC	RESUMO MODIFICAÇÃO SUMMARY OF MODIFICATIONS		EXECUTADO EXECUTED	VERIFICADO CHECKED	LIBERADO RELEASED	DATA DATE	VER VER
EXEC. / EXECUTED		DIMENSIONAL GTA251 B15T			10005057727			
VERIF. / CHECKED					000	01		
LIBER. / RELEASED								
DATA LB / REL DT	29.01.2018				FOLHA / SHEET	01 / 01		

