

# DATA SHEET

## Synchronous Alternator



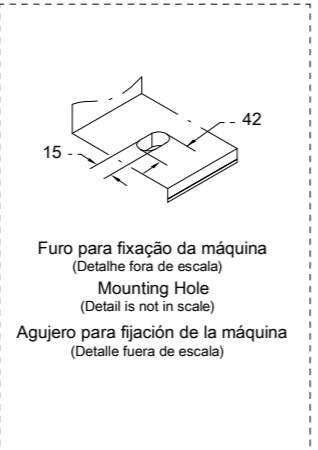
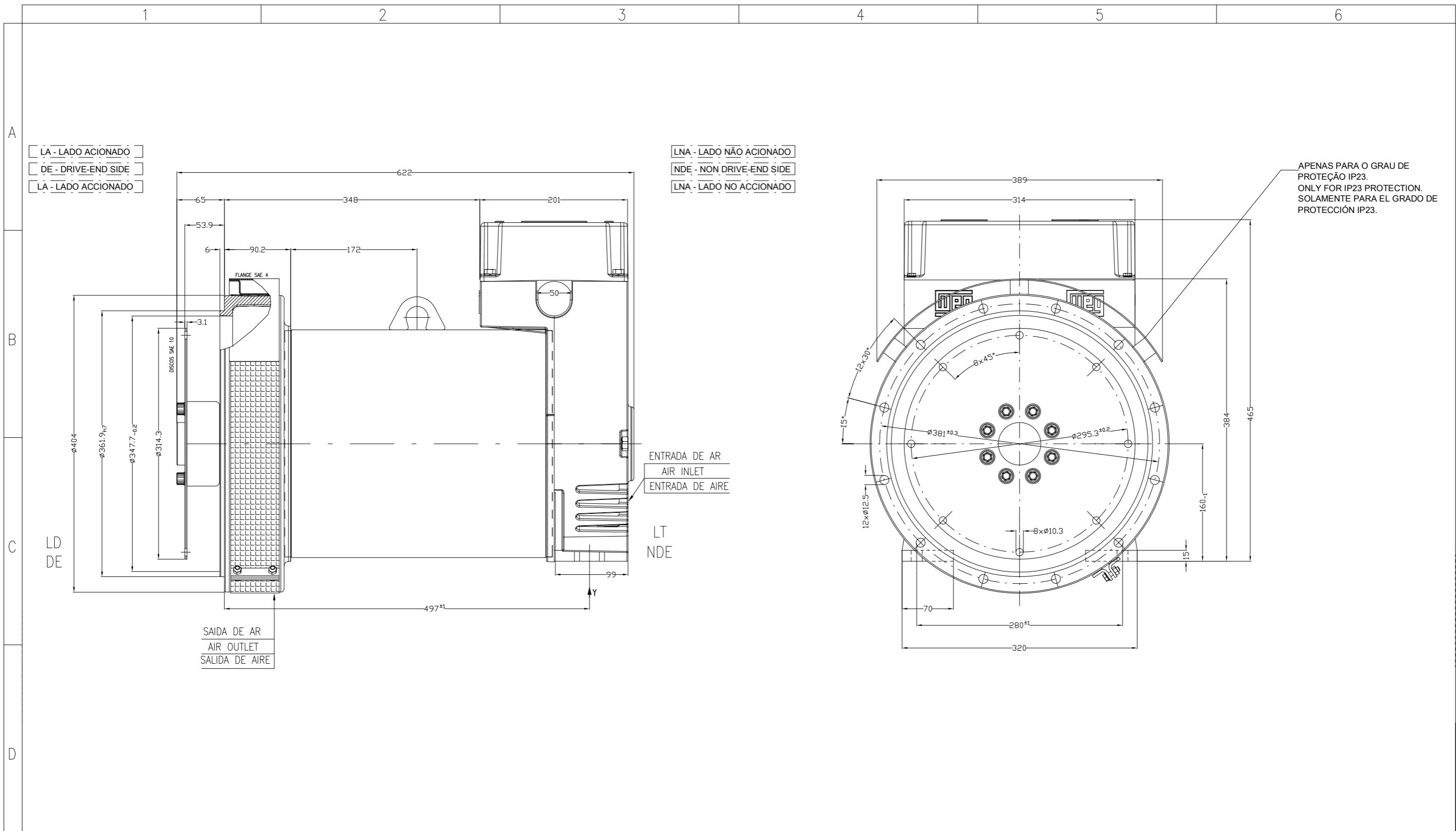
Customer	: HooverTec LLC	Notes:	
Customer reference	:		
Product line	: GTA162AIVD	Product code	: 14076066
Area classification	: Safe		1003931759

<b>General data</b>		Degree of protection	: IP23
Frame (IEC)	: 160	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	: 181 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	-	380	416	440	480	-
	YY (parallel star) connection	190	200	-	190	208	220	240	-
	Δ (series delta) connection	220	230	-	220	240	254	277	-
	ΔΔ (parallel delta) connection	110	115	-	110	120	127	138	-
	Zig-zag or single phase delta	-	-	-	190 - 200	-	-	-	220 - 240
Output power (kVA)	Continuous 80/40	21.0	21.0	12.0	25.4	27.7	29.4	25.9	18.0
	Continuous 105/40	24.0	24.0	14.0	29.1	31.8	33.7	29.7	21.0
	<b>Continuous 125/40</b>	<b>27.0</b>	<b>27.0</b>	<b>15.6</b>	<b>40.0</b>	<b>41.2</b>	<b>42.0</b>	<b>42.0</b>	<b>23.1</b>
	Standby 150/40	29.0	29.0	17.0	40.0	42.4	44.0	44.0	25.0
	Standby 163/27	31.0	31.0	19.0	42.0	44.4	46.0	46.0	26.0
Electrical data (FP=0.8 / Continuous 125/40 (H))	Xd(%) Dir. axis synchronous reactance	173.47	156.8	231.29	267.0	230.59	210.12	177.04	280.16
	X'd(%) Dir. axis transient reactance	10.79	9.74	14.39	16.67	14.35	13.08	11.0	17.44
	X''d(%) Dir. axis subtrans. reactance	8.35	7.54	11.13	12.9	11.11	10.12	8.52	13.49
	Xq(%) Quad. axis sync. reactance	70.98	64.16	94.64	109.23	82.06	85.97	72.44	114.63
	X''q(%) Quad. axis subtrans. react.	8.47	7.65	11.29	13.11	17.94	10.27	8.64	13.69
	X2(%) Negative sequence reactance	8.41	7.59	11.21	13.0	14.52	10.19	8.58	13.59
	X0(%) Zero sequence reactance	1.39	1.26	1.86	2.15	1.85	1.69	1.42	2.25
	T'd(ms) Short Circ. Trans. time const.	36.4	36.4	48.53	36.3	33.93	36.4	36.4	48.53
	T''d(ms) Short Circ. Sub. time const.	0.5	0.5	0.67	0.5	0.45	0.5	0.5	0.67
	T'do(ms) Open Circ. time const Trans	593.4	594.3	791.2	589.9	484.92	592.7	594.3	790.27
	T''do(ms) Open Circ. time const Subt	0.6	0.6	0.8	0.6	0.62	0.6	0.6	0.8
	Ta(ms) Armature time const.	3.81	3.81	5.08	3.81	3.07	3.81	3.82	5.08
	uc(V) Full load excitation voltage	22.99	23.38	22.99	23.14	23.14	23.24	23.57	23.24
	ic(A) Full load excitation current	2.18	2.22	2.18	2.19	2.19	2.2	2.23	2.2
ic(A) No load excitation current	0.5	0.7	0.67	0.3	0.44	0.4	0.6	0.53	
Icc(A) Sustained Short-Circ. Current	123.07	116.91	116.91	182.32	149.99	165.33	151.55	144.38	
Kcc Short-circuit ratio	0.61	0.69	0.81	0.37	0.44	0.49	0.61	0.66	
Efficiency (%)	Power factor	0.8	1.0	0.8	1.0	0.8	1.0	0.8	1.0
	25% of load	74.2	78.8	73.9	78.6	68.3	72.5	78.5	82.6
	50% of load	81.8	85.6	81.8	85.7	75.3	78.8	83.7	87.2
	75% of load	83.4	87.1	83.7	87.4	76.7	80.2	84	87.4
	100% of load	83.3	87.1	83.8	87.5	76.6	80.1	82.9	86.5
	125% of load	82.5	86.5	83.2	87.1	75.9	79.6	81.4	85.2

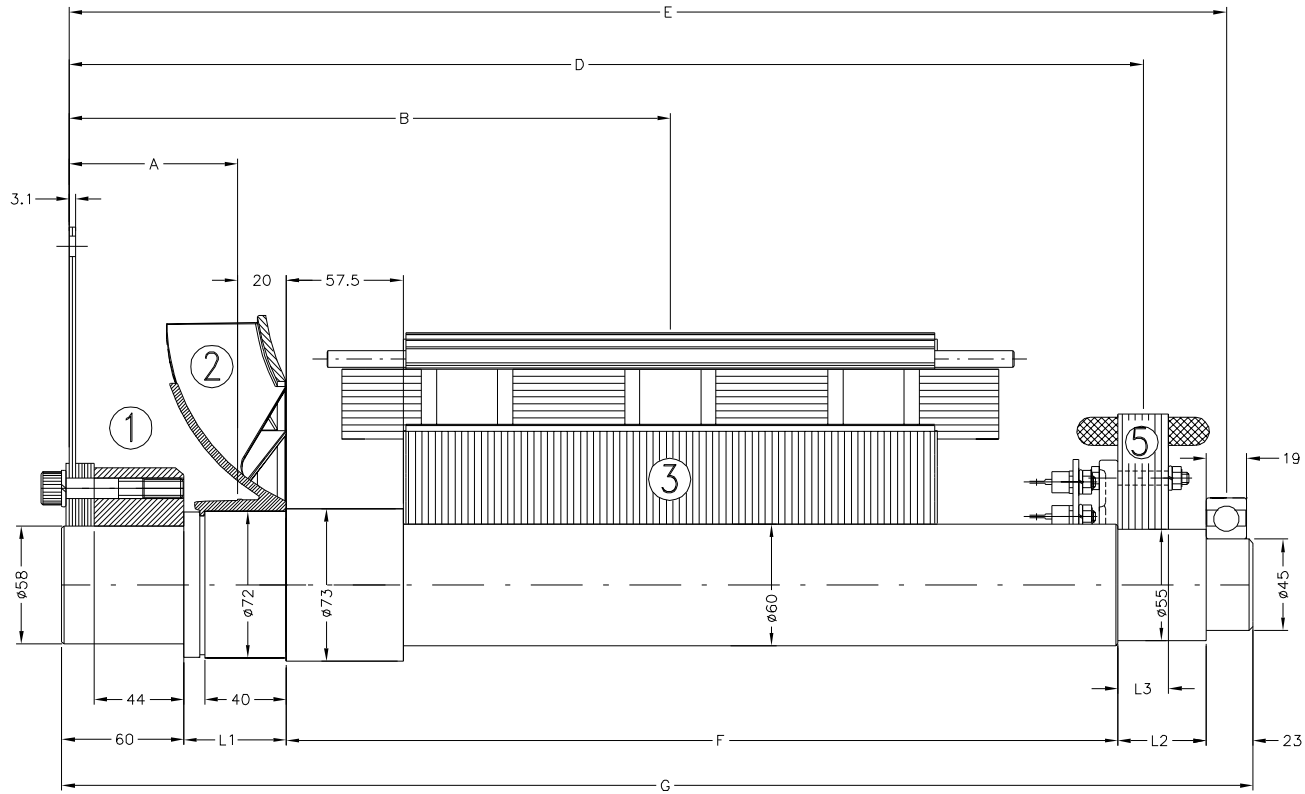
<b>Other characteristics</b>		<b>Automatic voltage regulator</b>		<b>According to:</b>	
Air flow	: 0.4 m³/s	Accuracy (stability)	: +/- 0.5%	IEC 60034	
Exciter stator winding resistance at 20°C	: 10.55 ohm	Rated current	: 5 A	NBR 5117	
Stator winding resistance at 20°C	: 0.23176 ohm	Analog input	: Yes	NEMA MG1	
Rotor winding resistance	: 2.39 ohm	Digital input	: No	VDE530	
Stator winding layers	: 2	Peak current	: 7 A/10 s	ISO 8528	
Inertia WR²	: 0.26 kgm²	Droop / TC	: No	CSA	
NDE Bearing	: 6209-2RS/ZZ	Dynamic recovery	: 8 to 500 ms		
DE bearing		U/F	: Yes		
Flange	: SAE 4	Internal voltage adjustment	: +/- 15%		
Coupling disc	: SAE 10	External voltage adjustment	: +/- 10%		
		Transient recovery time for ΔU=20%	: 500 ms		

Rev.	Changes Summary				Performed				Checked				Date			
Performed by																
Checked by																
Date	08/09/2023								Page				Revision			
									1 /							



PESO BRUTO / GROSS WEIGHT		PESO LIQUIDO / NET WEIGHT		ESC / SCALE	1:8
EXEC. / EXECUTED	LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS		EXECUTADO / EXECUTED	VERIFICADO / CHECKED
VERIF. / CHECKED	ECM	DIMENSIONAL GTA162 B15T		LIBERADO / RELEASED	DATA / DATE
LIBER. / RELEASED					VER
DATA LB / REL DT	21.01.2018	WEN	JARAGUA DO SUL	ALTERNADORES GENSET	FOLHA / SHEET 01 / 01
					10005054541
					000 03

NOTAS / NOTES / NOTAS  
 Máquina / Machine / Máquina : GTA162 - B15T  
 Grau de proteção / Protection / Grado de protección: IP21 / IP23  
 Flange de acoplamento / Coupling flange / Brida de acoplamiento: SAE 4  
 Disco de acoplamento / Coupling disc / Disco de acoplamiento: SAE 10



TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm										1		2		3		5		Total Weight kg	Total Mom. Iner. J																				
		L1	L2	L3	A	B	C	D	E	F	G	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>																						
GTA 162 __VD	SAE 11.5	49	56.5	35	85.5	---	528.5	577.0	405.5	617.5	4.5	0.041	0.6	0.004	38.0	0.18	5.2	0.023	48.3	0.24																					
GTA 161 __SR																					213	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
GTA 161 __HS																					223	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HH																					228	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HI																					238	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HJ																					253	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TIPO	DISCOS	DIMENSÕES: mm / DIMENSIONS: mm										1		2		3		5		Total Weight kg	Total Mom. Iner. J																				
		L1	L2	L3	A	B	C	D	E	F	G	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>	WEIGHT kg	MOMENT kgm <sup>2</sup>																						
GTA 162 __VD	SAE 7.5	49	56.5	35	76.0	---	519.0	567.5	405.5	617.5	3.3	0.012	0.6	0.004	38.0	0.18	5.2	0.023	47.1	0.22																					
GTA 161 __SR																					203.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
GTA 161 __HS																					213.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HH																					218.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HI																					228.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
GTA 161 __HJ																					243.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

PESO BRUTO / GROSS WEIGHT		kg		PESO LÍQUIDO / NET WEIGHT		kg		ESC / SCALE		1:4		
EMISSÃO INICIAL / INITIAL EMISSION												
ECM	LOC	RESUMO MODIFICAÇÃO / SUMMARY OF MODIFICATIONS						EXECUTADO	VERIFICADO	LIBERADO	DATA	VER
EXEC / EXECUTED	LOC	ANÁLISE TORSIONAL LINHA G-PLUS 160 B15						EXECUTED	CHECKED	RELEASED	DATE	VER
VERIF. / CHECKED								10009091394				
LIBER. / RELEASED								000				00
DATA LB / REL DT		JARAGUA DO SUL		ENGENHARIA DO PRODUTO		FOLHA / SHEET		1 / 1				