

ژنراتور : Mecc Alte

موتور دیزل : Cummins

Standby		Prime		
KVA	KW	KVA	KW	
27	-	25	20	دیزل ژنراتور



X2.5 G2



> Specification sheet

Our energy working for you.™



Description

The X2.5 has all the strength and reliability the industry has come to expect from Cummins Inc., but in a smaller, lighter and more economical package. The X2.5 features direct fuel injection, resulting in cleaner quieter and more fuel efficient performance. The CoolPac system offers a cost effective, fully warranted, high ambient, integrated system solution capable of meeting our customers application requirements.



This engine has been built to comply with CE certification.



This engine has been designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

Features

The X2.5 is built to last, with a cast-iron block designed for durability and reliability. Design elements include:

- Bosch direct injection in-line pump for cleaner, more efficient fuel consumption.
- Parent bore block with deep, stiff crankcase and optimised rib arrangement to enhance strength and reduce noise.
- 12 volt electrics package as standard, with starter, alternator and fuel solenoid.
- Single spin-on oil filter and Fuel Filter
- SAE '3' flywheel housing

Integrated Design - Coolpac products are supplied complete and factory fitted with cooling package and air cleaner for a complete power package. Each component has been specifically developed and rigorously tested for G-Drive products, ensuring high performance, durability and reliability.

Service and Support - G-Drive products are backed by an uncompromising level of technical support and after sales service, delivered through a world class service network.

1500 rpm (50 Hz Ratings)

Gross Engine Output			Net Engine Output			Typical Generator Set Output					
Standby	Prime	Base	Standby	Prime	Base	Standby (ESP)		Prime (PRP)		Base (COP)	
kWm/BHP			kWm/BHP			kWe	kVA	kWe	kVA	kWe	kVA
27/36	24/32	22/29	26/35	23/31	21/28	22	27.5	20	25	18	22

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General Engine Data

Type	4 cycle, in-line, naturally aspirated
Bore mm	91.7mm (3.61 in.)
Stroke mm	127mm (5 in.)
Displacement Litre	2.5 litre (153in. ³)
Cylinder Block	Cast iron, 3 cylinder
Battery Charging Alternator	36 amps
Starting Voltage	12 volt, negative ground
Fuel System	Direct injection
Fuel Filter	Spin on fuel filters with Water Drain Facility
Lube Oil Filter Type(s)	Spin on full flow filter
Lube Oil Capacity (l)	6.5
Flywheel Dimensions	3/11.5

Coolpac Performance Data

Cooling System Design	Jacket Water
Coolant Ratio	50% ethylene glycol; 50% water
Coolant Capacity (l)	5.5
Limiting Ambient Temp.**	50
Fan Power	0.9
Cooling System Air Flow (m ³ /s)**	1.6
Air Cleaner Type: Heavy Duty	Dry replaceable element with restriction indicator

** @ 13 mm H₂O

Ratings Definitions

Emergency Standby Power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):

Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN6271 and BS 5514.

Weight & Dimensions

Length	Width	Height	Weight (dry)
mm	mm	mm	kg
1160	670	800	285

Fuel Consumption 1500 (50 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	27	36	6.5	1.7
Prime Power				
100	24	32	6	1.6
75	18	24	4.8	1.3
50	12	16	3.5	0.9
25	6	8	2.5	0.7
Continuous Power				
100	22	29	5.6	1.5

Cummins G-Drive Engines

Asia Pacific
10 Toh Guan Road
#07-01
TT International Tradepark
Singapore 608838
Phone 65 6417 2388
Fax 65 6417 2399

Europe, CIS, Middle East and Africa
Manston Park Columbus Ave
Manston Ramsgate
Kent CT12 5BF. UK
Phone 44 1843 255000
Fax 44 1843 255902

Latin America
Rua Jati, 310, Cumbica
Guarulhos, SP 07180-900
Brazil
Phone 55 11 2186 4552
Fax 55 11 2186 4729

Mexico
Cummins S. de R.L. de C.V.
Eje 122 No. 200 Zona Industrial
San Luis Potosí, S.L.P. 78090
Mexico
Phone 52 444 870 6700
Fax 52 444 870 6811

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432
USA
Phone 1 763 574 5000
USA Toll-free 1 877 769 7669
Fax 1 763 574 5298

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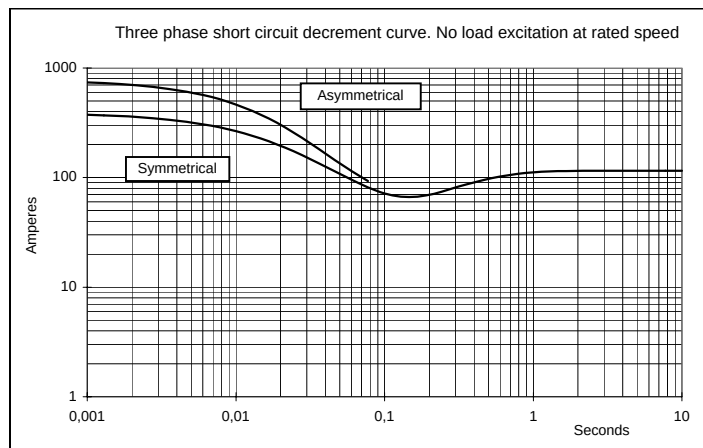
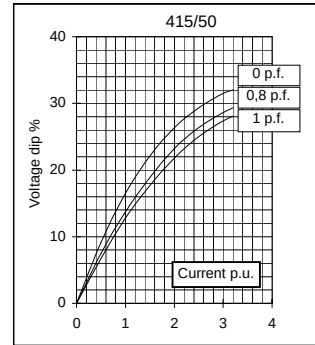
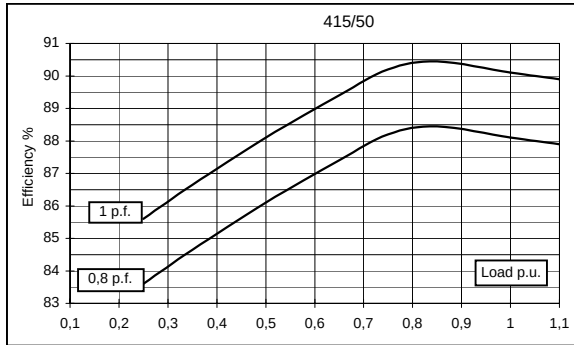
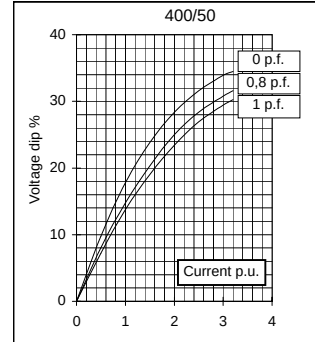
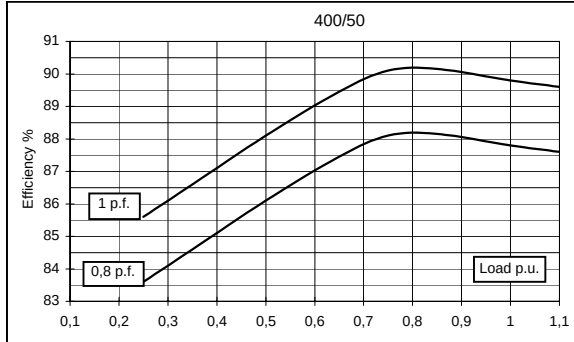
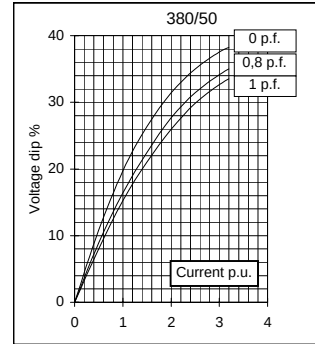
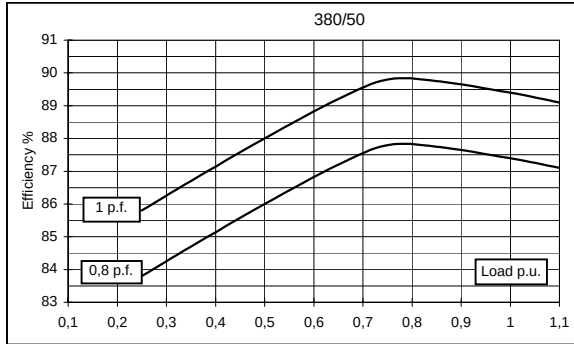
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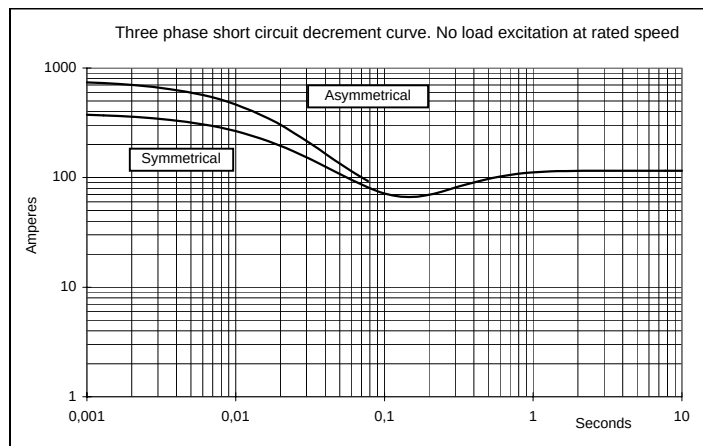
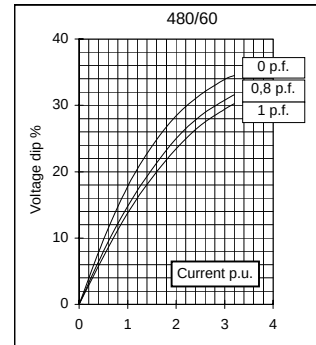
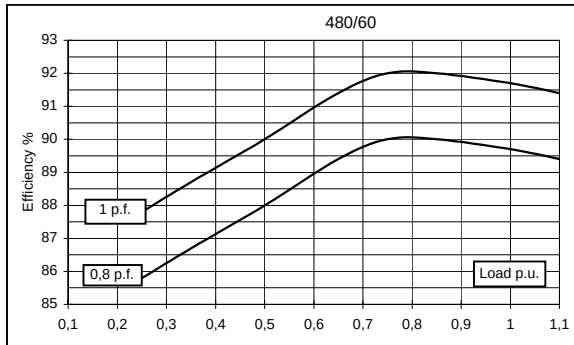
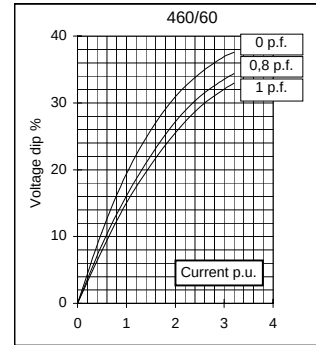
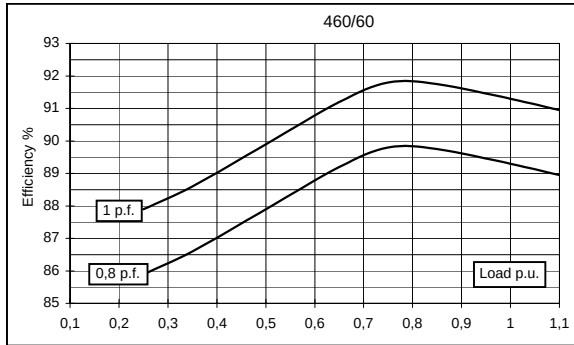
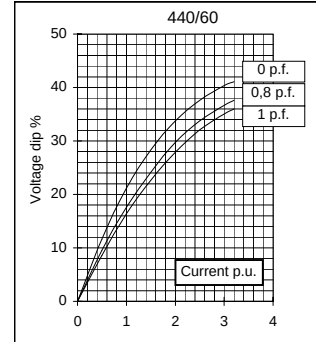
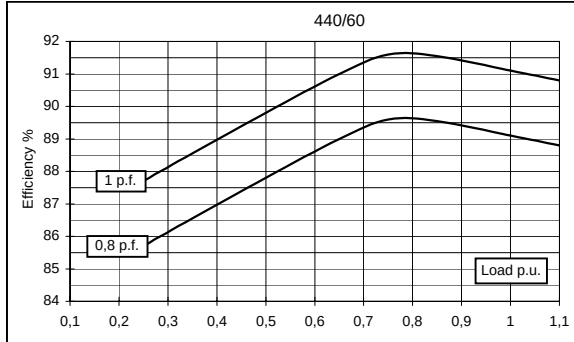
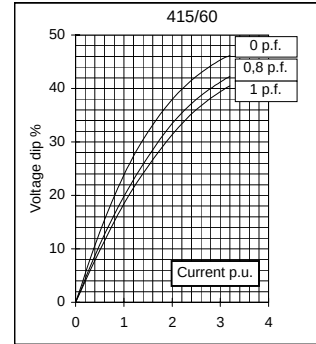
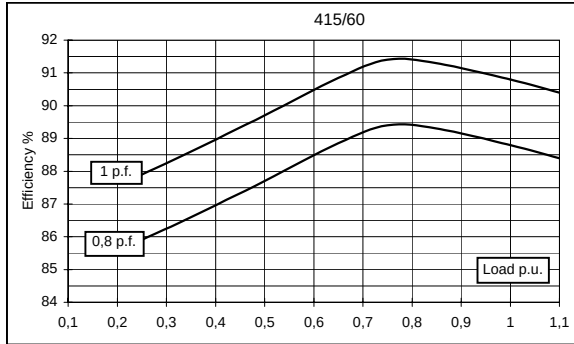


Electrical Characteristics										
Frequency		Hz	50				60			
Voltage (series star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	25	25	25	-	26	27,5	30	30
		kW	20	20	20	-	20,8	22	24	24
Rated power class F		kVA	23	23	23	-	24	25,5	27,5	27,5
		kW	18,4	18,4	18,4	-	19,2	20,4	22	22
Regulation with		SR7/2	±1,5 % 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	%	87,4	87,8	88,1	-	88,8	89,1	89,3	89,7
(see graph. for details)	3/4	%	87,8	88,1	88,2	-	89,4	89,6	89,8	90
	2/4	%	86	86,1	86,1	-	87,7	87,8	87,9	88
	1/4	%	83,8	83,6	83,6	-	85,9	85,7	85,9	85,8
Reactances (f. l.cl. F)	Xd	%	205,0	185	171,9	-	214,5	201,8	201,4	185
	Xd'	%	17,95	16,2	15,05	-	18,78	17,67	17,64	16,2
	Xd''	%	10,19	9,2	8,55	-	10,67	10,04	10,02	9,2
	Xq	%	84,2	76	70,6	-	88,1	82,9	82,8	76
	Xq'	%	84,2	76	70,6	-	88,1	82,9	82,8	76
	Xq''	%	23,3	21	19,5	-	24,3	22,9	22,9	21
	X ₂	%	15,18	13,7	12,73	-	15,88	14,95	14,92	13,7
	X ₀	%	3,43	3,1	2,88	-	3,59	3,38	3,38	3,1
Short Circuit Ratio	Kcc		0,50	0,58	0,80	-	0,38	0,43	0,50	0,58
Time Constants	Td'	sec.	0,047							
	Td''	sec.	0,013							
	Tdo'	sec.	0,93							
	Tα	sec.	0,011							
Short Circuit Current Capacity		%	>300				>350			
Excitation at no load		Amp.	0,45	0,6	0,7	-	0,3	0,4	0,5	0,55
Excitation at full load		Amp.	1,4	1,6	1,8	-	1,3	1,4	1,5	1,6
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.		%	300							
Stator Winding Resistance (20°C)		Ω	0,128							
Rotor Winding Resistance (20°C)		Ω	1,67							
Exciter Resistance (20 °C)		Ω	Rotor : 0,417				Stator : 10,60			
Heat dissipation at f.l.cl.H		W	2883	2779	2701	-	2623	2691	2876	2756
Telephone Interference			FHT < 2%				TIF < 45			
Radio interference			EN60034-1. For others standards apply to factory							
Waveform Distors.(THD) at f. load	LL/LN %		2 / 2							
Waveform Distors.(THD) at no load	LL/LN %		3,4 / 3,2							
Mechanical characteristics										
Protection			IP 23 (other protection on request)							
DE bearing			6309-2RS							
NDE bearing			6209-2RS							
Weight of wound stator assembly		kg	50							
Weight of wound rotor assembly		kg	27							
Weight of complete generator		kg	139							
Maximun overspeed		rpm	2250							
Unbalanced magnetic pull at f.l.cl.F		kN/mm	4,5							
Cooling air requirement		m³/min	5,3				5,8			
Inertia Constant (H)		sec.	0,082				0,099			
Noise level at 1m/7m		dB(A)	68 / 57				71 / 61			

50 Hz



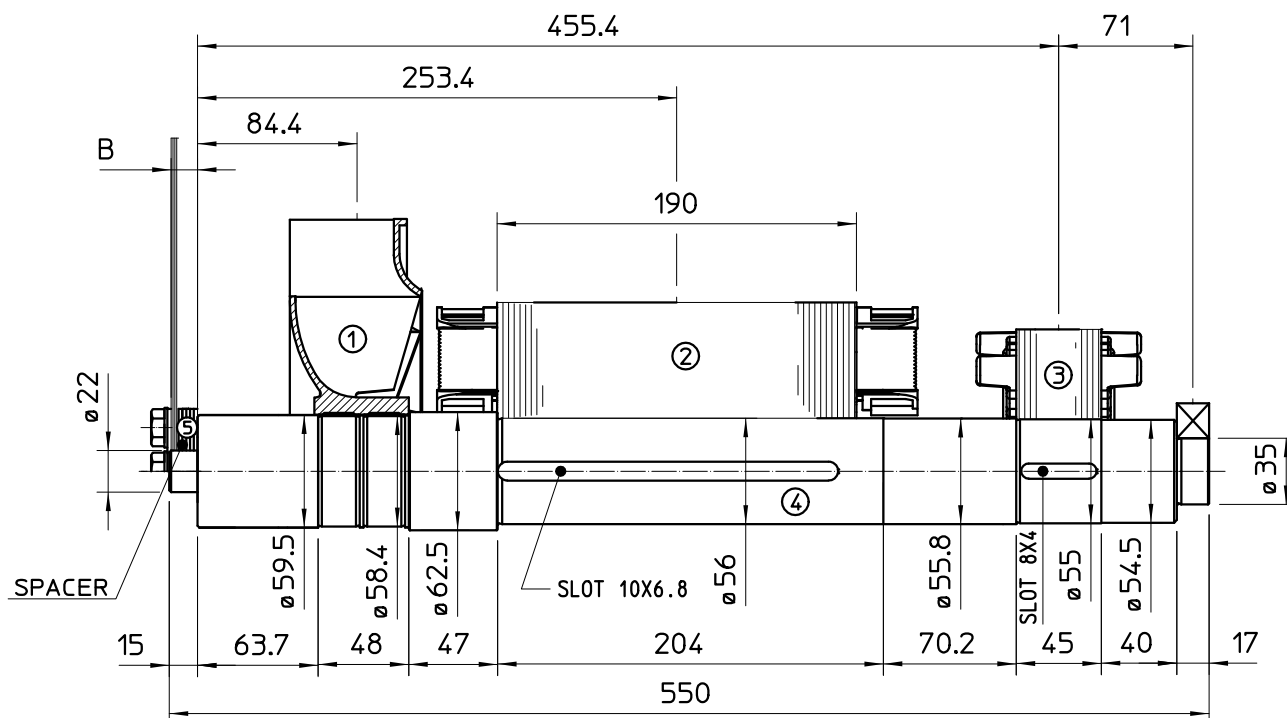
60 Hz



	COMPONENT	WEIGHT Kg	J Kg ^m ²
1	FAN	1.2	0.0102
2	MAIN ROTOR	26.8	0.117
3	EX ROTOR	5.4	0.012
4	SHAFT	10.6	0.004
6	TOTAL	44	0.1432

C.G. = GRAVITY CENTER

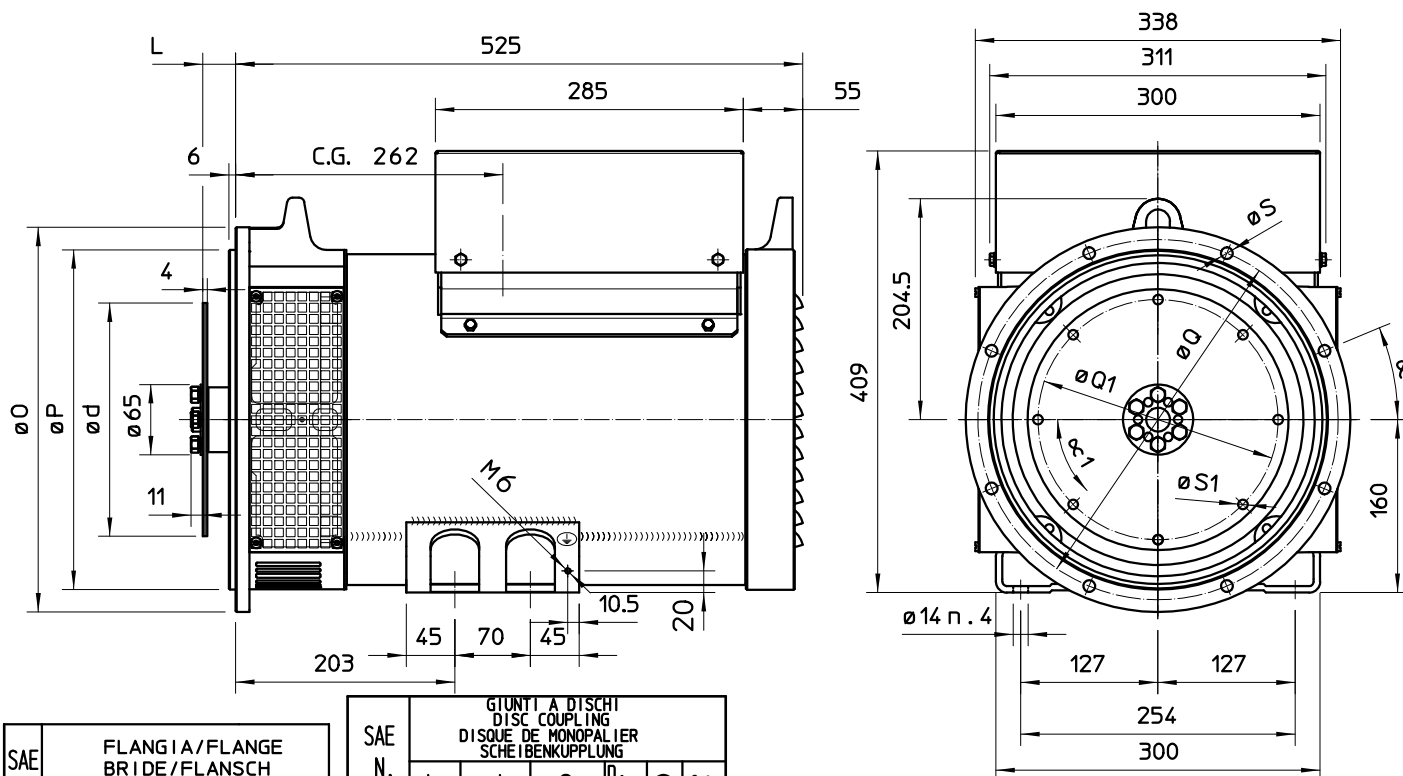
SINGLE BEARING MOMENTS OF INERTIA



COMPONENT	WEIGHT Kg	J Kg ^{m2}
1 FAN	1.2	0.0102
2 MAIN ROTOR	26.8	0.117
3 EX ROTOR	5.4	0.012
4 SHAFT	10.5	0.0041
6 TOTAL	43.9	0.1433

SAE N.	5	SHAFT COUPLING FLEX PLATE	
B (mm)	WEIGHT kg	J kg ^{m2}	
6 1/2	4	1.14	0.0067
7 1/2	4	1.42	0.0103
8	35.6	1.97	0.0171
10	27.6	2.59	0.0319
11 1/2	14	3.1	0.0481

SINGLE BEARING DIMENSIONS



SAE N.	O	P	Q	n. fori	S	α
FLANGIA/FLANGE BRIDE/FLANSCH						
5	356	314.3	333.4	8	11	22°30'
4	403	362	381	12	11	15°
3	451	409.6	428.6	12	11	15°
2	489	447.7	466.7	12	11	15°

SAE N.	L	d	Q1	n. fori	S1	α1
GIUNTI A DISCHI DISC COUPLING DISQUE DE MONOPALIER SCHEIBENKUPPLUNG						
6 1/2	30.2	215.9	200	6	9	60°
7 1/2	30.2	241.3	222.25	8	9	45°
8	62	263.52	244.47	6	11	60°
10	53.8	314.32	295.27	8	11	45°
11 1/2	39.6	352.42	333.37	8	11	45°

C.G. = GRAVITY CENTER