موتور دیزل : Cummins

ژنراتور : Mecc Alte

	Standby		Prime	
	KW	KVA	KW	KVA
دیزل ژنراتور	28	35	-	40

X3.3-G1

> Specification sheet

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Description

The X3.3 has all the strength and reliability the genset industry has come to expect from the X Series range but in a smaller, lighter and more economical package. The X3.3 features direct fuel injection, resulting in cleaner, quieter and more fuel efficient performance. With a highly compact 4 cylinder envelope and extremely low heat rejection, the engine offers a high degree of installation flexibility.

CE	This engine has been built to comply with CE certification.
ISO 9001	This engine has been designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

Features

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.

Minimal derate for high altitude or high ambient applications.

Shallow oil pan and single spin-on oil and fuel filter.

SAE '3/11.5' flywheel/flywheel housing.

Integrated Design - Coolpac products are supplied fitted with cooling package and heavy duty air cleaner for a complete power package. Each component has been 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
36/48	32/43	N/A	35/46	31/41	N/A	30	38	28	35	N/A	N/A

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(01/08) (GDSS168)

General Engine Data

Type	3 cycle, in-line, naturally aspirated
Bore mm	91.4 mm (3.59 in.)
Stroke mm	127 mm (5 in.)
Displacement Litre	3.3 litre (199 in.^{3})
Cylinder Block	Cast iron, 4 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)	8.6
Limiting Ambient Temp.**	50.3
Fan Power	1
Cooling System Air Flow (m^3/s)**	1.7
Air Cleaner Type	Dry replaceable element with restriction indicator

** @ 8 mm H^{2}0

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.

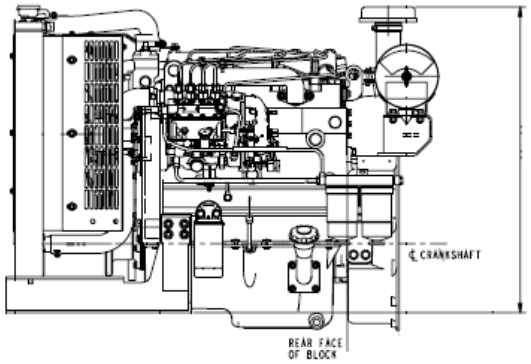
Base Load (Continuous) Power (COP):
Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN6271 and BS 5514.

Weight & Dimensions

Length	Width	Height	Weight (dry)
mm	mm	mm	kg
1124	686	850	322

Fuel Consumption 1500 (50 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	36	48	10.4	2.7
Prime Power				
100	32	43	8.5	2.2
75	24	32	6.1	1.6
50	16	21	4.3	1.1
25	8	11	2.8	0.7
Continuous Power				
100			TBD	TBD



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(01/08) (GDSS168)

GENERATOR TYPE ECO 32-2S/4

Document : **DS006A/1**
issue 008 date 24/07/2012

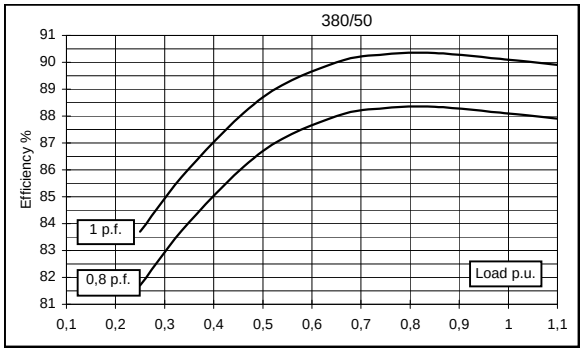
Electrical Characteristics									
Frequency		Hz	50				60			
Voltage (series star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	35	35	35	28	41	42	42	42
		kW	28	28	28	22,4	32,8	34	33,6	33,6
Rated power class F		kVA	33	33	33	26	39	40	40	40
		kW	26,4	26,4	26,4	20,8	31,2	32	32	32
Regulation 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	4/4	%	88,1	88,2	87,9	87,7	89,1	89,6	89,7	89,8
(see graph. for details)	3/4	%	88,3	88,6	88,5	88,2	89,6	90	90	90,2
	2/4	%	86,7	86,8	86,8	86,8	88,5	88,8	88,9	89
	1/4	%	81,7	81,5	81,3	81,2	85,1	85,3	85,4	85,5
Reactances (f. l.cl. F)	Xd	%	277,0	250	232,3	165,3	326,5	297,5	272,2	250
	Xd'	%	16,62	15	13,94	9,92	19,59	17,85	16,33	15
	Xd"	%	11,75	10,6	9,85	7,01	13,84	12,61	11,54	10,6
	Xq	%	100,8	91	84,5	60,2	118,8	108,3	99,1	91
	Xq'	%	100,8	91	84,5	60,2	118,8	108,3	99,1	91
	Xq"	%	34,3	31	28,8	20,5	40,5	36,9	33,8	31
	X_2	%	24,38	22	20,44	14,55	28,73	26,18	23,95	22
	X_0	%	3,10	2,8	2,60	1,85	3,66	3,33	3,05	2,8
Short Circuit Ratio	Kcc		0,60	0,70	0,86	1,38	0,40	0,50	0,60	0,70
Time Constants	Td'	sec.	0,058							
	Td"	sec.	0,012							
	Tdo'	sec.	1,35							
	Tα	sec.	0,025							
Short Circuit Current Capacity		%	>300				>350			
Excitation at no load		Amp.	0,47	0,64	0,73	1,1	0,3	0,4	0,46	0,6
Excitation at full load		Amp.	2,1	2,2	2	2,5	1,9	1,7	1,6	1,7
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.		%	300							
Stator Winding Resistance (20°C)		Ω	0,097							
Rotor Winding Resistance (20°C)		Ω	2,01							
Exciter Resistance (20 °C)		Ω	Rotor : 0,417				Stator : 10,6			
Heat dissipation at f.l.cl.H		W	3782	3746	3854	3142	4013	3900	3858	3816
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 %	4 / 3,9							
Waveform Distors.(THD) at no load		LL/LN %	3,5 / 3,4							
Mechanical characteristics										
Protection			IP 21 (other protection on request)							
DE bearing			6312-2RS							
NDE bearing			6309-2RS							
Weight of wound stator assembly		kg	56							
Weight of wound rotor assembly		kg	39,5							
Weight of complete generator		kg	199							
Maximun overspeed		rpm	2250							
Unbalanced magnetic pull at f.l.cl.F		kN/mm	4,5							
Cooling air requirement		m^3/min	11,8				14,5			
Inertia Constant (H)		sec.	0,113				0,136			
Noise level at 1m/7m		dB(A)	75 / 60				79 / 64			

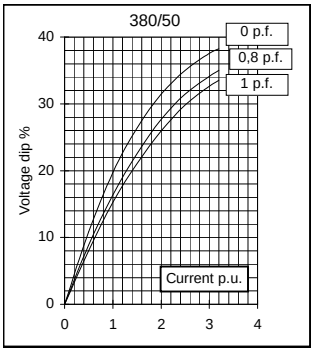
GENERATOR TYPE ECO 32-2S/4

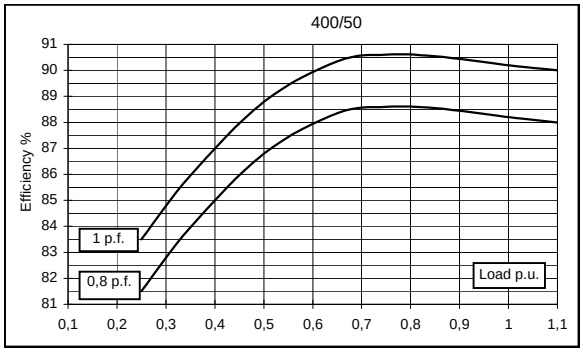
Document : **DS006A/2**

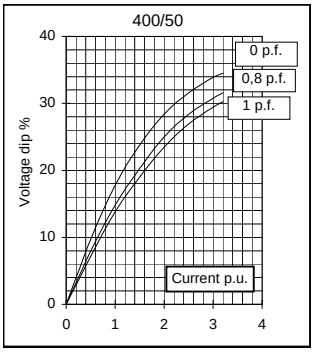
issue 008 date : 24/07/2012

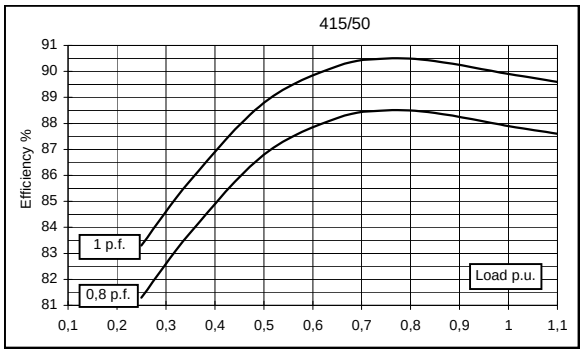
50 Hz

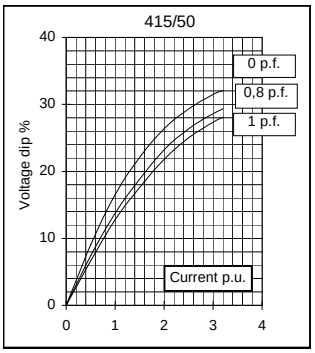


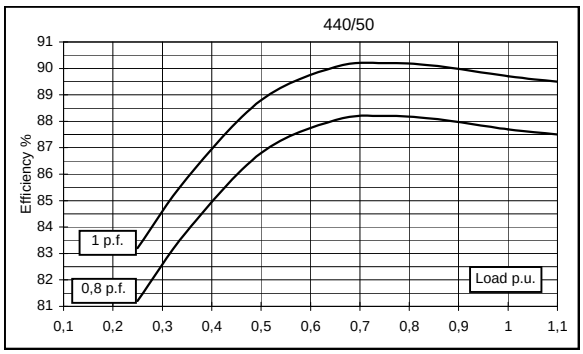


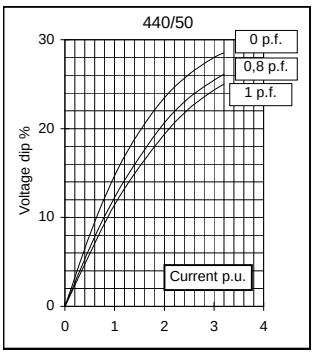


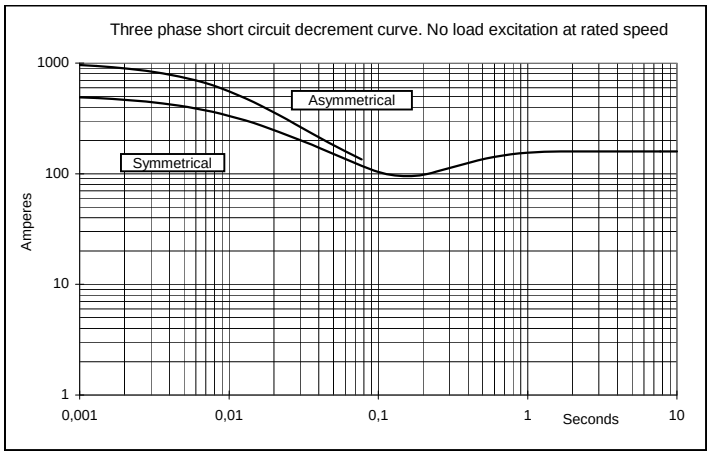










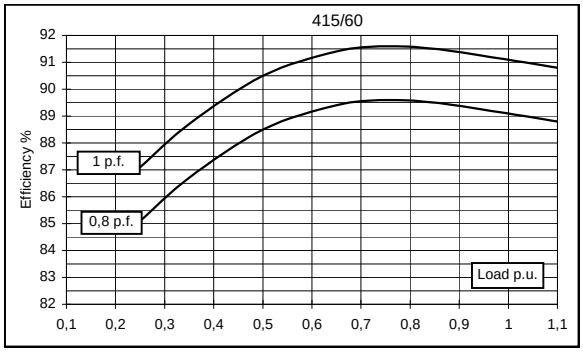


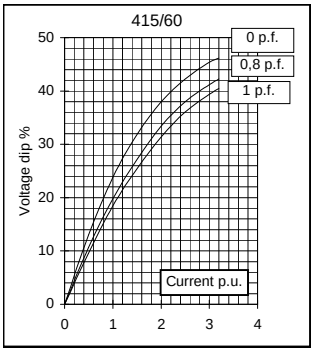
GENERATOR TYPE ECO 32-2S/4

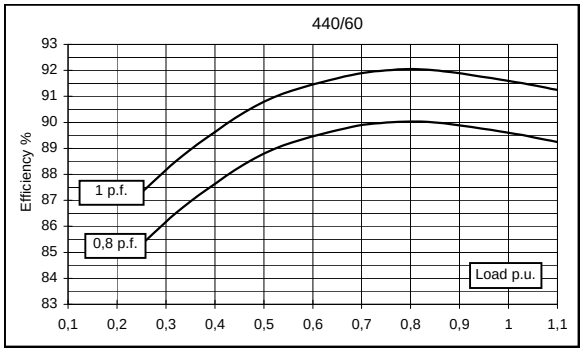
Document : **DS006A/3**

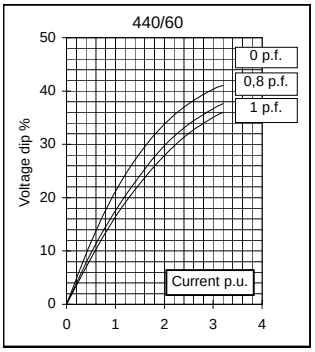
issue 008 date : 24/07/2012

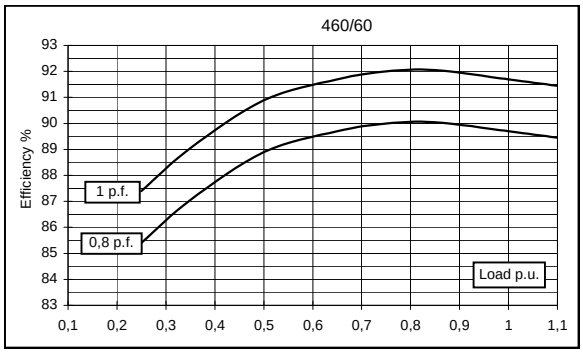
60 Hz

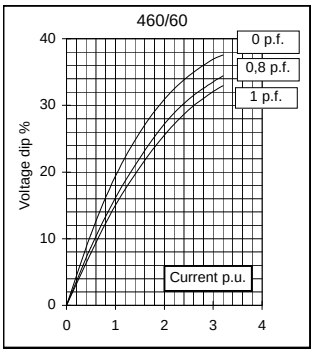


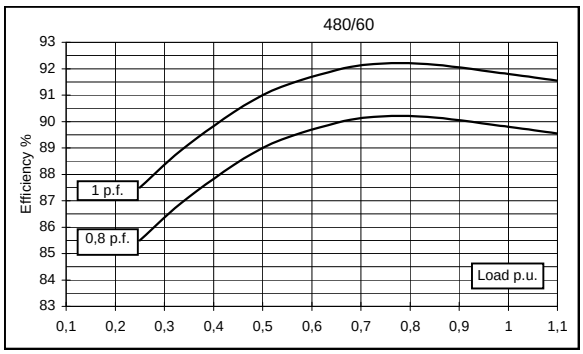


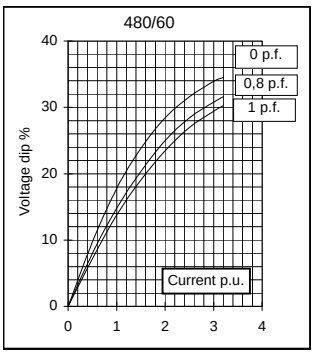


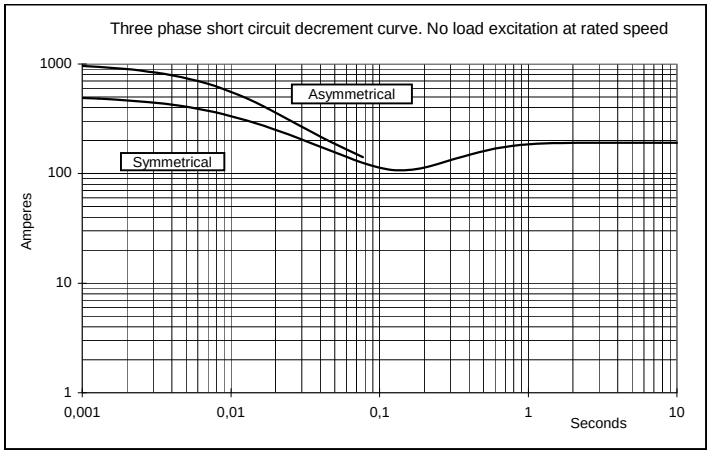




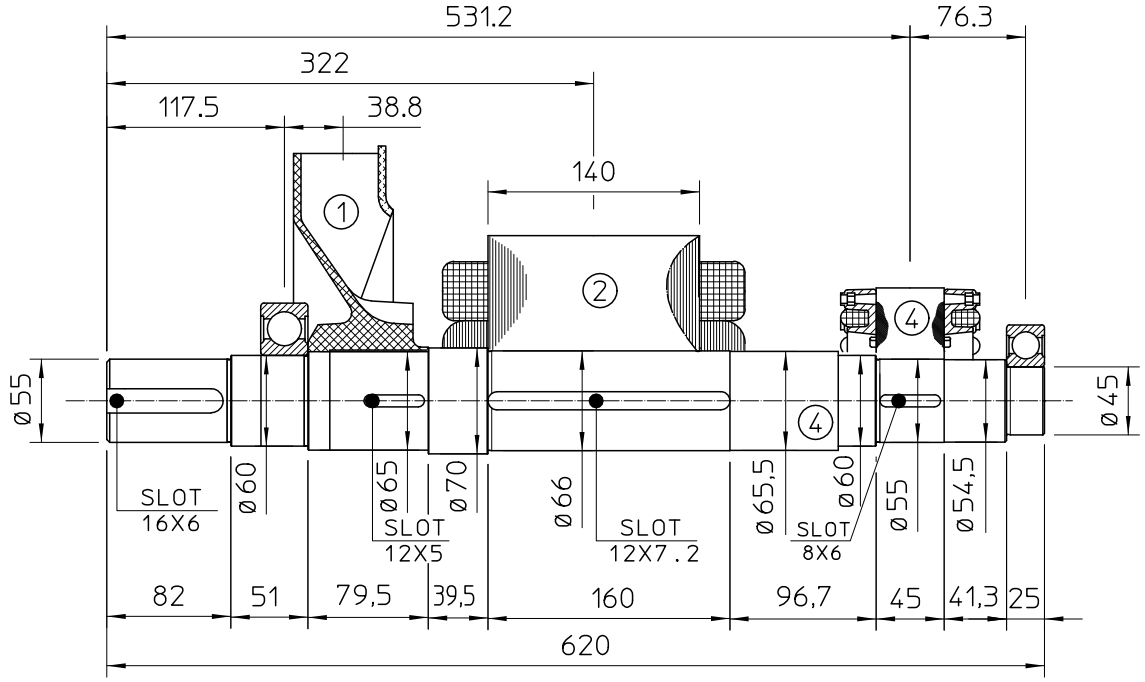






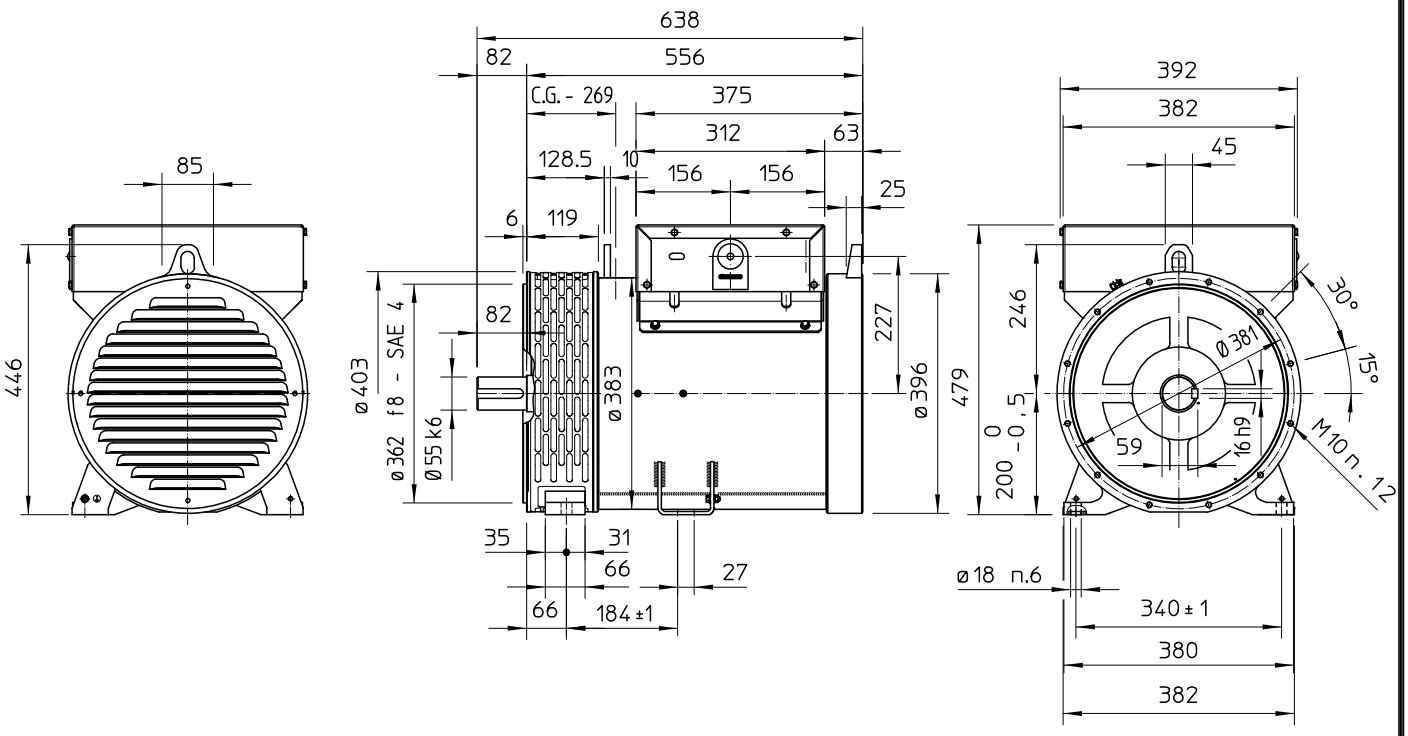


TWO BEARING MOMENTS OF INERTIA



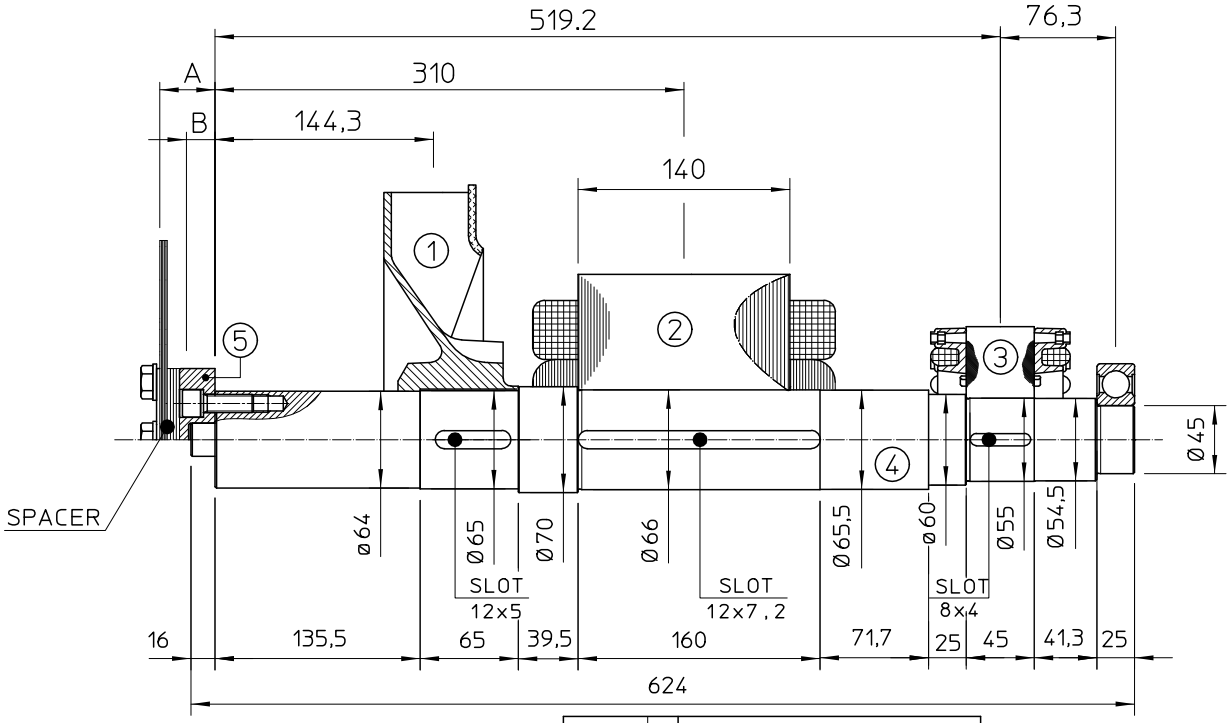
POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	2.3	0.0224
2	MAIN ROTOR	39.5	0.2804
3	EX. ROTOR	5.4	0.012
4	SHAFT	14.1	0.0069
TOTAL		61.3	0.3217

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

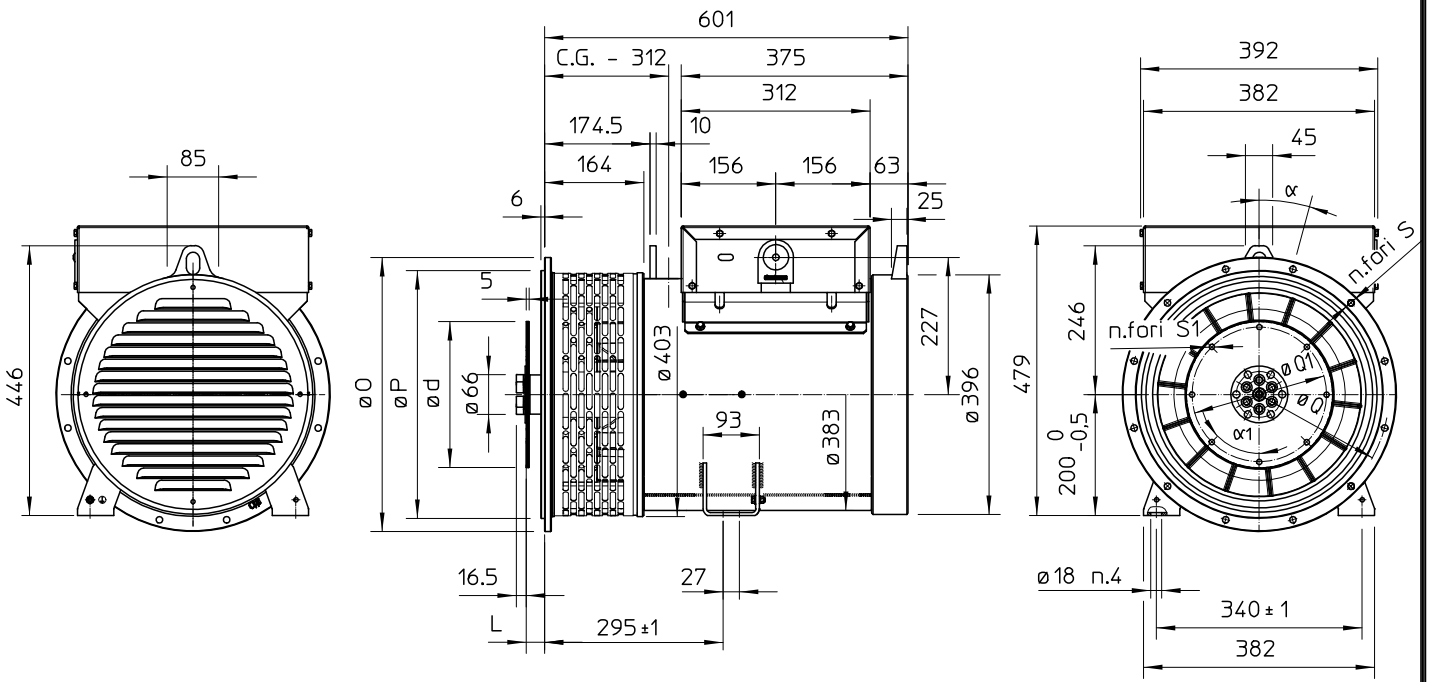
SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm^2)
1	FAN	2.3	0.0224
2	MAIN ROTOR	39.5	0.2804
3	EX. ROTOR	5.4	0.012
4	SHAFT	14.5	0.0074
TOTAL		61.7	0.3222

SAE	5	SHAFTS COUPLING FLEX PLATE		
N°	A	B	WEIGHT kg	J kgm^2
6,5	5	2.5	1.74	0.0084
7,5	5	2.5	2.1	0.013
8	36.6	28.1	3.9	0.02
10	28.6	21.6	4.47	0.038
11.5	15	11.5	4.51	0.059

SINGLE BEARING DIMENSIONS



SAE N.	FLANGIA / FLANGE BRIDE / FLANSCH					
	O	P	Q	S	N. FORI HOLES N°	α
5	356	314.3	333.4	11	8	45
4	403	362	381	11	12	30
3	451	409.6	428.6	11	12	30
2	490	447.7	466.7	11	12	30
1	552	511.2	530.2	11	12	30

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

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