

ژنراتور : Mecc Alte

موتور دیزل : Cummins

Standby		Prime		
KVA	KW	KVA	KW	
70	-	64	51	دیزل ژنراتور



S3.8 G7 CoolPac



> Specification sheet

Our energy working for you.™



Description

The Cummins 'S Series' engine powered CoolPac sets offer the lowest cost of maintenance thereby proving to be the most economical power solution. With the robust design and integrated technologies, the 'S Series' CoolPac can command an unrivalled reputation for reliability and performance.

The Cummins 'S Series' engine powered CoolPac sets give you the advantage of optimising your valuable space. All elements of the CoolPac sets are designed from the start to work together to maximize efficiency, even at part loads, thus offering you the advantage of lowest operating costs.

The rugged and reliable Cummins 'S Series' CoolPac sets are unique, because all the major components – the engine and cooling system are manufactured by Cummins India. This integral approach means each element of a CoolPac set is designed to work in harmony from the start.



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

Engine : Cummins 'S Series' CoolPac, powered by Cummins 'S Series' engines, are rated at 1500 RPM and conform to ISO 8528 specifications. The engines are radiator cooled, four stroke and multi-cylinder, conforming to BS 5514/ISO 3046.

The scope of Supply includes :

- Battery Charging Alternator
- Bosch In-line fuel system with mechanical governor
- Dual spin-on fuel filters
- Lube oil filter
- Turbocharger
- Charge Air Cooler (CAC)
- Dry type Air Cleaner
- Coolant recovery bottle
- Fuel pump shut-off coil with Temperature, Pressure & Magnetic Speed sensors
- Flywheel and flywheel housing
- CE compliant guarding
- Oil drain valve

Integrated Design - CoolPac products are supplied fitted with cooling package and medium duty 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
64.9/87	59.6/79.9	41.7/55.9	62.9/84.2	57.6/77.1	39.7/53.1	52.8	66	48	60	33.6	42

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General Engine Data

Type	In line, Radiator cooled
Bore mm	97
Stroke mm	128
Displacement Litre	3.8
Cylinder Block	Cast Iron, 4 Cylinder
Battery Charging Alternator	12V, 35 Amps
Starting Voltage	12V
Fuel System	Direct Injection
Fuel Filter	Spin on
Lube Oil Filter Type(s)	Spin on
Lube Oil Capacity (l)	11
Flywheel Dimensions	SAE3/10

CoolPac Performance Data

Cooling System Design	Charge Air & Jacket Water Cooled
Coolant Ratio	50:50
Coolant Capacity (l)	11
Limiting Ambient Temp. (degC)**	50
Fan Power (Kw)	2
Cooling System Air Flow (m ³ /s)**	0.99
Air Cleaner Type	Dry Type, Replaceable, medium duty

** @ ¼" H₂O

Weight & Dimensions

Length	Width	Height	Weight (dry)
mm	mm	mm	kg
1290	910	1080	500

Fuel Consumption 1500 (50 Hz)

%	kWm	BHP	L/ph	US gal/ph
Standby Power				
100	64.9	87	16.1	4.3
Prime Power				
100	59.6	79.9	14.7	3.9
75	44.7	59.9	11.0	2.9
50	29.8	40	6.1	1.6
25	14.9	20	4.5	1.2
Continuous Power				
100	41.7	55.9	10.6	2.8

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):

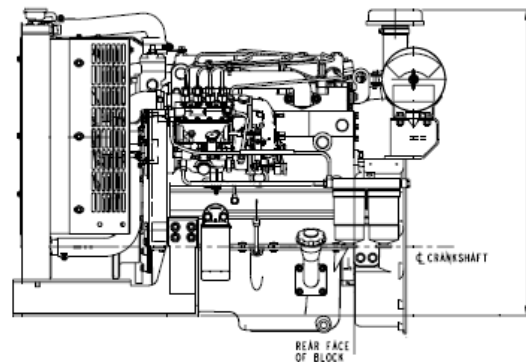
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

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.



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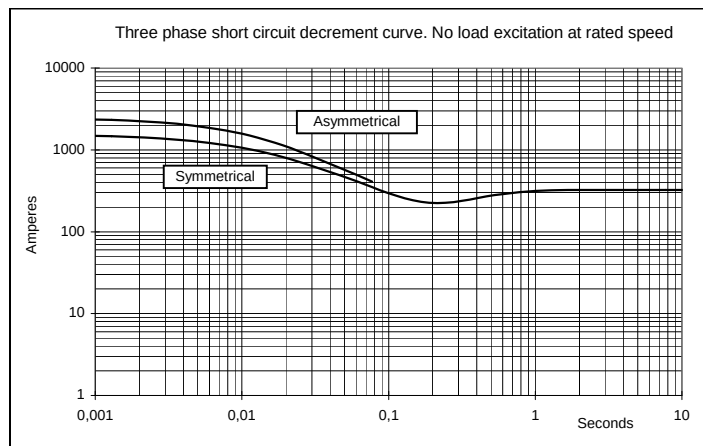
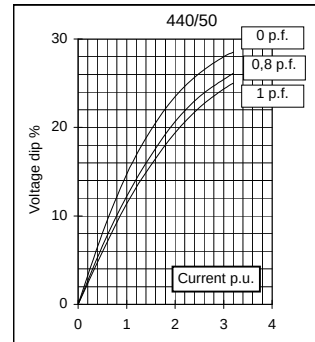
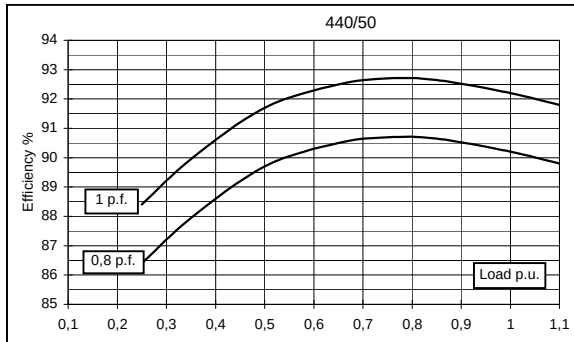
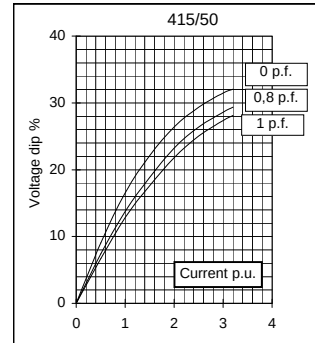
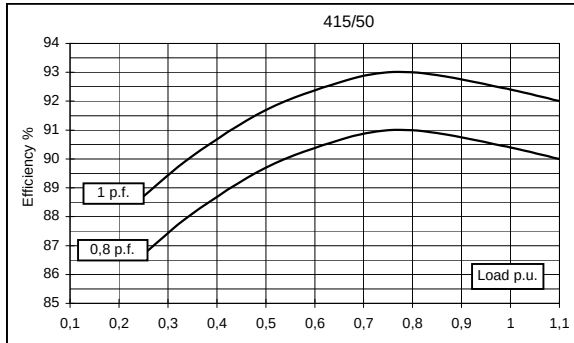
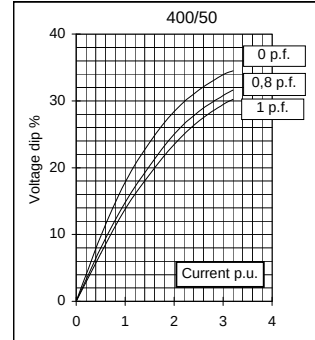
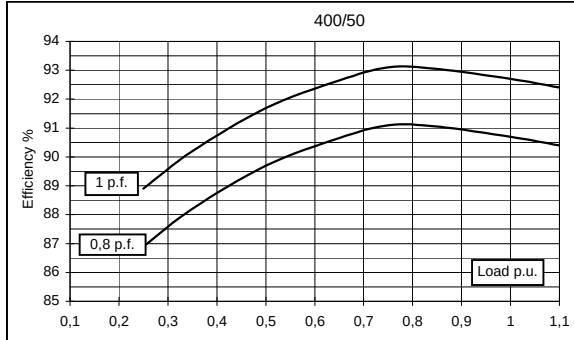
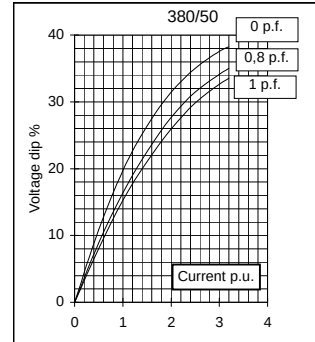
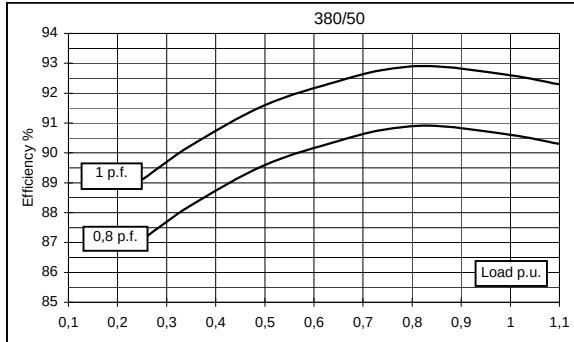


Electrical Characteristics										
Frequency		Hz	50				60			
Voltage (series star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	75	75	75	70	80	86	90	90
		kW	60	60	60	56	64	69	72	72
Rated power class F		kVA	67	67	67	62	73	80	83	83
		kW	53,6	53,6	53,6	49,6	58,4	64	66,4	66,4
Regulation 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	%	90,6	90,7	90,4	90,2	92,5	93	93,1	93,2
(see graph. for details)	3/4	%	90,8	91,1	91	90,7	92,8	93	93,2	93,4
	2/4	%	89,6	89,7	89,7	89,7	90,8	90,9	91	91,1
	1/4	%	87,1	86,9	86,7	86,4	88,1	88,1	88,1	87,9
Reactances (f. l.cl. F)	Xd	%	338,3	305,4	283,7	235,5	363,1	347,2	332,5	305,4
	Xd'	%	14,84	13,4	12,44	10,33	15,93	15,23	14,58	13,4
	Xd''	%	7,72	7	6,47	5,37	8,28	7,92	7,58	7
	Xq	%	130,6	117,9	109,5	90,9	140,1	134,0	128,3	117,9
	Xq'	%	130,6	117,9	109,5	90,9	140,1	134,0	128,3	117,9
	Xq''	%	38,0	34,3	31,9	26,4	40,8	39,0	37,3	34,3
	X ₂	%	25,88	23,4	21,70	18,02	27,77	26,56	25,43	23,4
	X ₀	%	3,68	3,3	3,09	2,56	3,95	3,78	3,62	3,3
Short Circuit Ratio	Kcc		0,48	0,57	0,64	1,19	0,36	0,40	0,48	0,57
Time Constants	Td'	sec.	0,065							
	Td''	sec.	0,0135							
	Tdo'	sec.	1,30							
	Tα	sec.	0,027							
Short Circuit Current Capacity		%	>300				>350			
Excitation at no load		Amp.	0,5	0,6	0,7	1,2	0,25	0,3	0,4	0,5
Excitation at full load		Amp.	2,1	2,2	2,4	2,8	1,8	1,7	1,9	2,1
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.		%	300							
Stator Winding Resistance (20°C)		Ω	0,035							
Rotor Winding Resistance (20°C)		Ω	3,171							
Exciter Resistance (20 °C)		Ω	Rotor : 0,442				Stator : 11,35			
Heat dissipation at f.l.cl.H		W	6225	6152	6372	6084	5189	5178	5336	5253
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	%	3,9 / 3,7							
Waveform Distors.(THD) at no load	LL/LN	%	3,3 / 3,1							
Mechanical characteristics										
Protection			IP 21 (other protection on request)							
DE bearing			6312-2RS							
NDE bearing			6309-2RS							
Weight of wound stator assembly		kg	110							
Weight of wound rotor assembly		kg	74							
Weight of complete generator		kg	298							
Maximun overspeed		rpm	2250							
Unbalanced magnetic pull at f.l.cl.F		kN/mm	5,2							
Cooling air requirement		m³/min	11,8				14,5			
Inertia Constant (H)		sec.	0,094				0,113			
Noise level at 1m/7m		dB(A)	75 / 60				79 / 64			

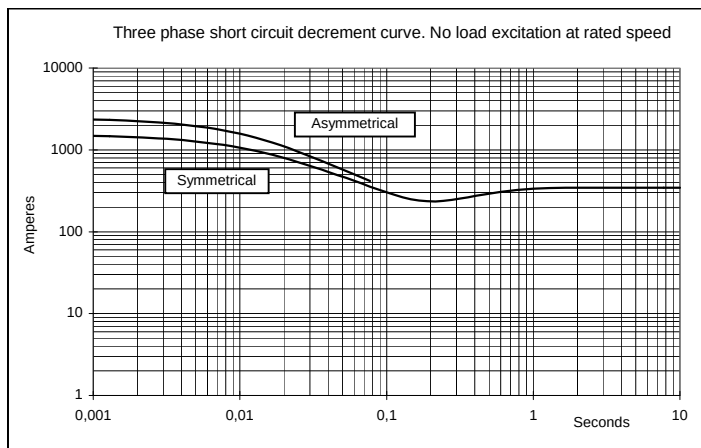
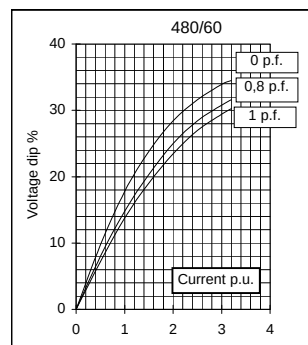
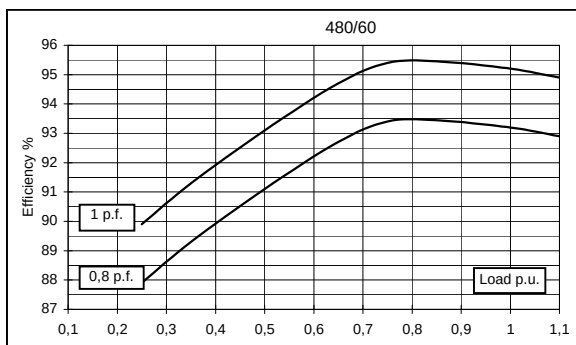
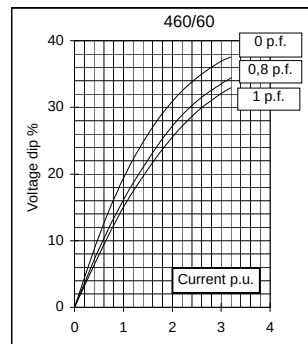
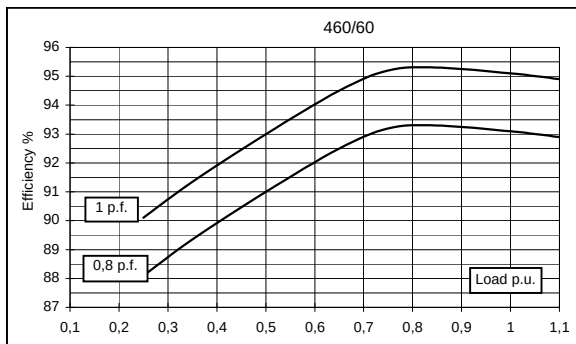
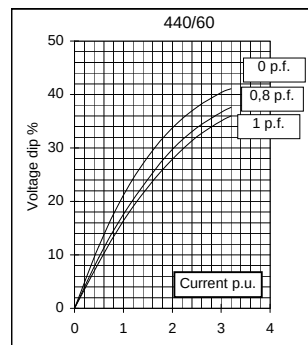
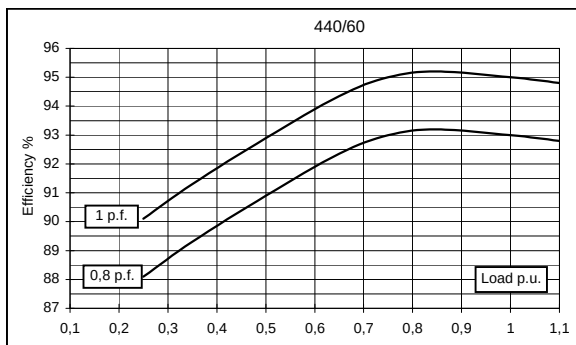
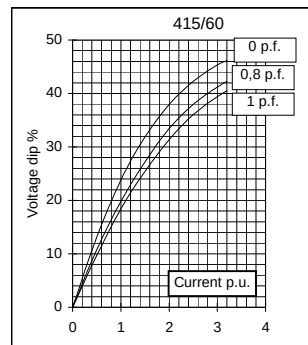
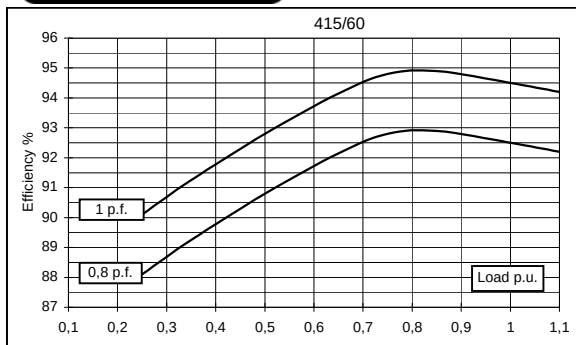
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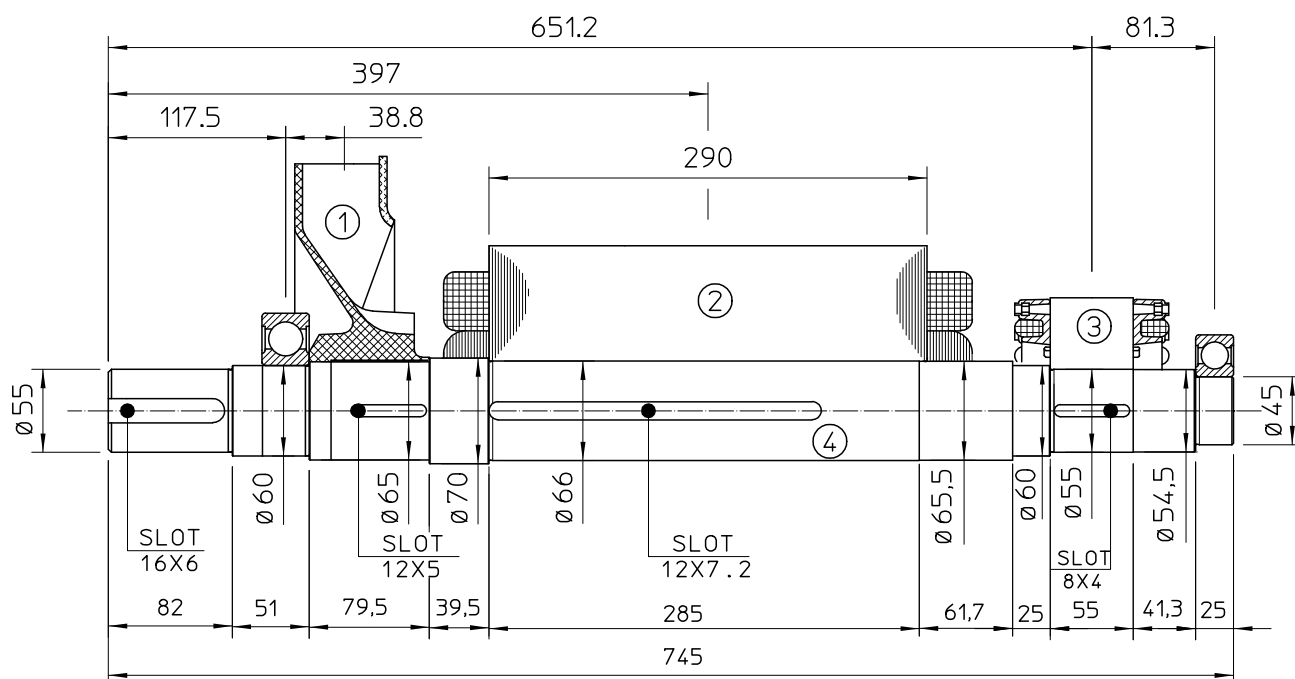
50 Hz



60 Hz

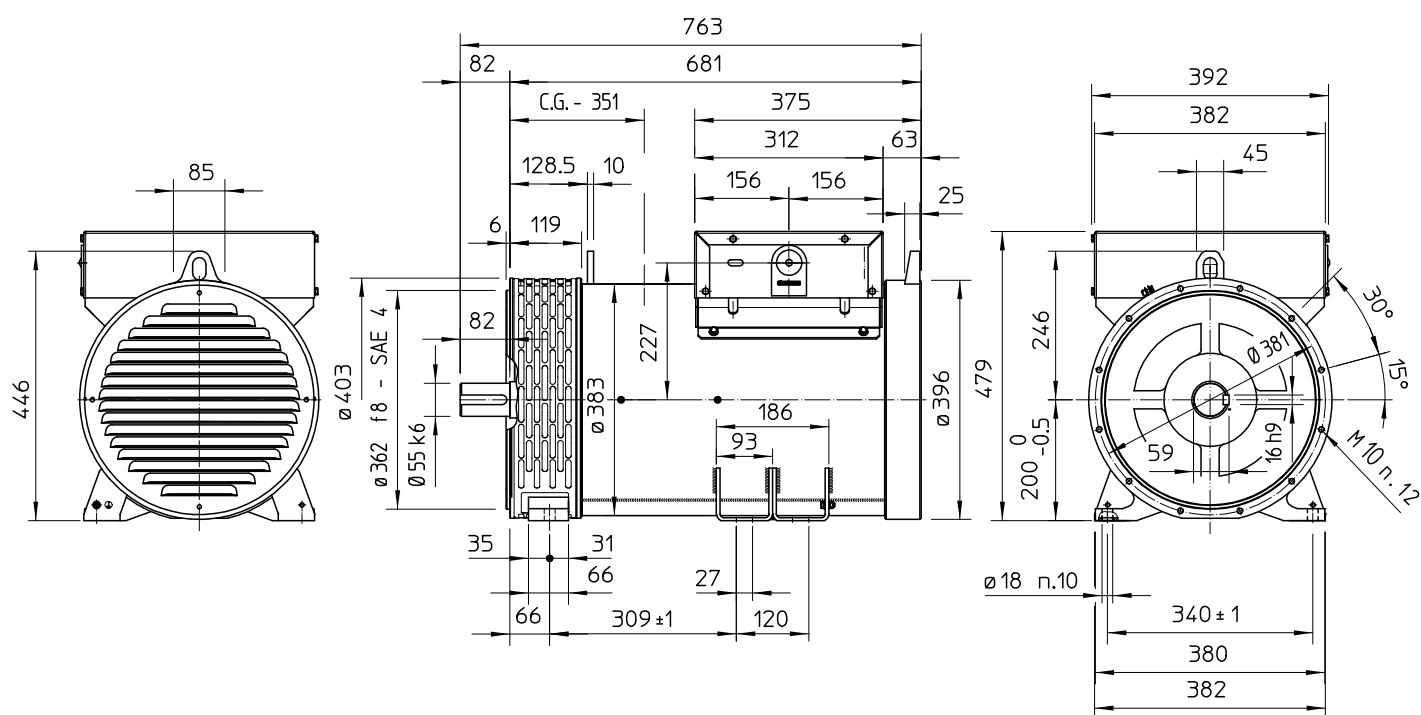


TWO BEARING MOMENTS OF INERTIA



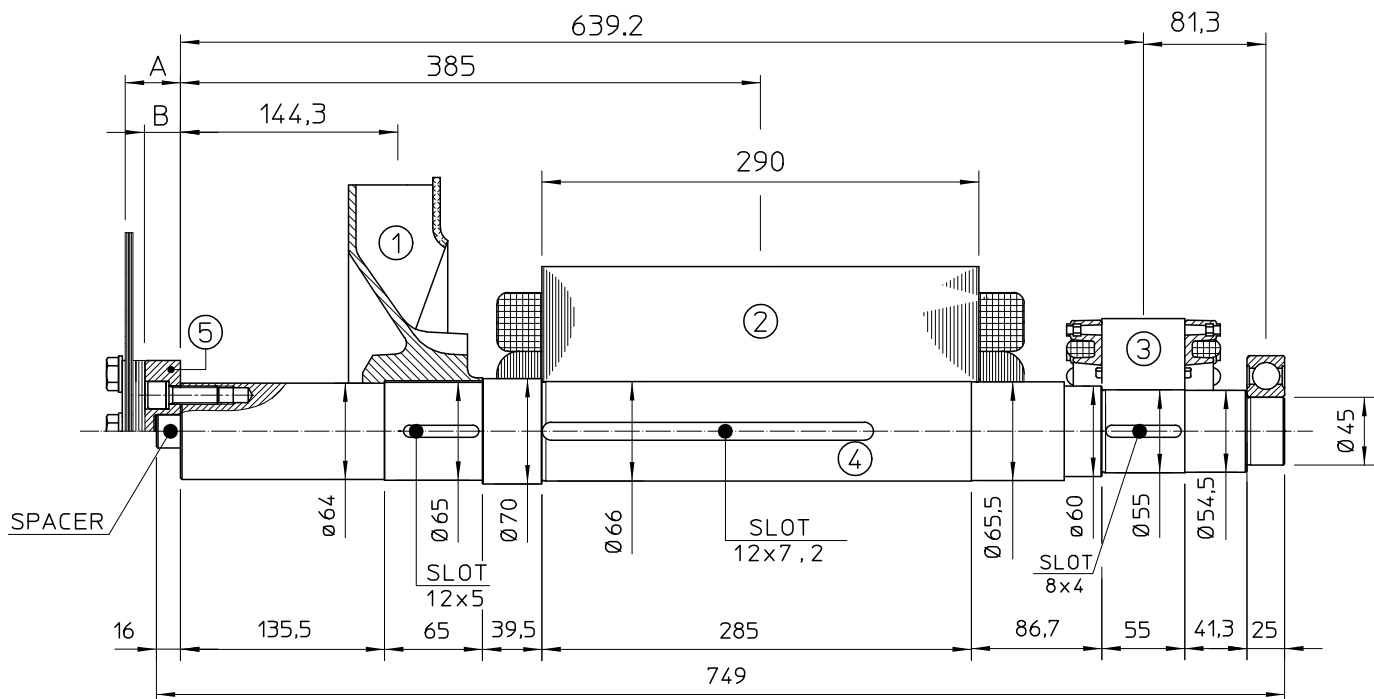
POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	2.3	0.0224
2	MAIN ROTOR	74	0.5254
3	EX. ROTOR	7	0.016
4	SHAFT	17.3	0.0067
TOTAL		100.6	0.5705

TWO BEARING DIMENSIONS



C.G.= GRAVITY CENTER

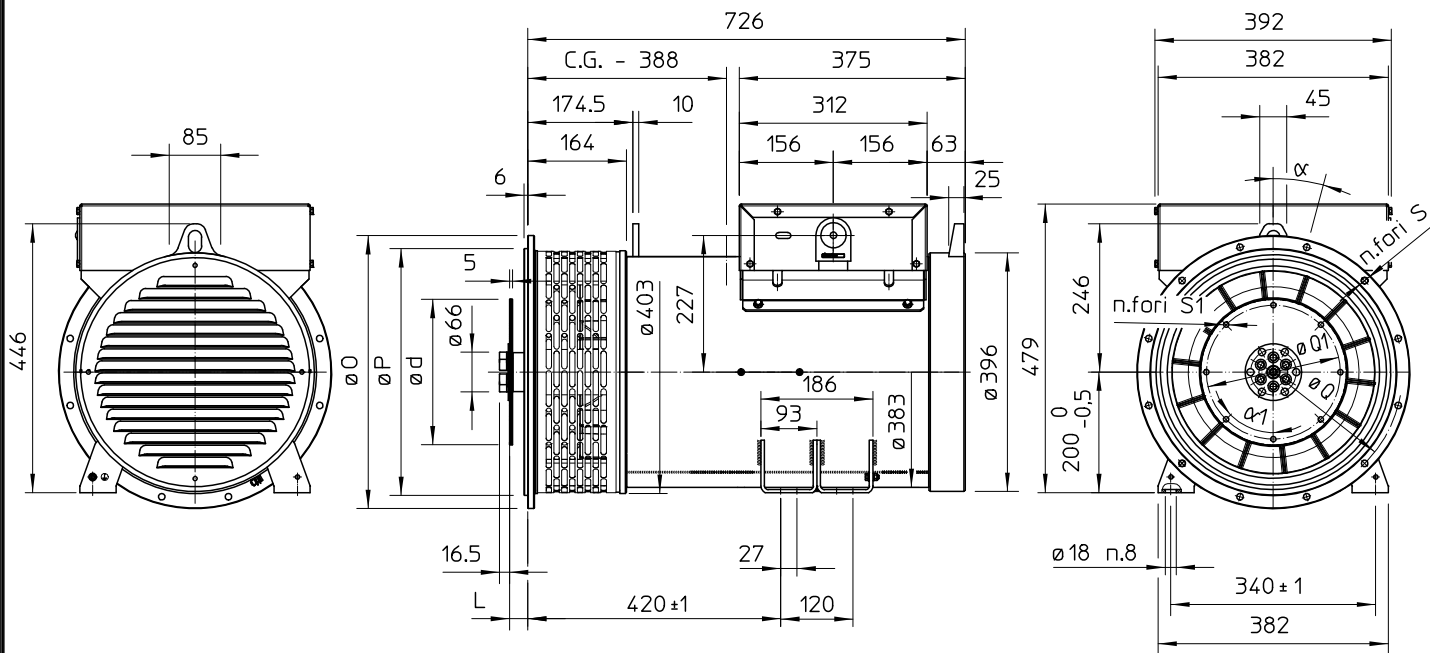
SINGLE BEARING MOMENTS OF INERTIA



POS.	COMPONENT	WEIGHT (kg)	J (kgm ²)
1	FAN	2.3	0.0224
2	MAIN ROTOR	74	0.5254
3	EX. ROTOR	7	0.016
4	SHAFT	17.6	0.0090
TOTAL		100.9	0.5728

SAE N°	5	SAFTS COUPLING FLEX PLATE	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.	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.	d	L	Q1	S1	N. FORI HOLES N°	α ₁
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