

# JCB ENERGY ELECTRIC POWER INDUSTRY

MADRID / SPAIN





# JCC 1650

231 / 400 V – 50 Hz





## **GENERATOR GENERAL INFORMATION**

GENERATOR	FREQUENCY	VOLTAGE	POWER FACTOR	SPEED	DIESEL EN	IGINE		ALTERN	ATOR		TYPE OF	GENER	ATOR OU	ТРИТ
Model	Hz	V	Cos Q	Rpm	Brand	Model	Series	Brand	Model	Series	Operation	kVA	kW	А
								ĥ			Standby	1.650,0	1.320,0	2.384,0
JCC 1650	50	231/400	0.8	1500	Cummins	KTA50G8	KTA	ENERGY	JCB	400L2	Prime	1.500,0	1.320,0	2.167,6
								RGY	RGY		Continuous	1.050,0	840,0	1.517,3

<ul> <li>Diesel Engines with Advanced Technology and Quality</li> </ul>	<ul> <li>Tropical 50 °C Radiator, First Class Product Support</li> </ul>
<ul> <li>Alternators with Advanced Technology and Quality</li> </ul>	<ul> <li>Fuel Filter with Water and Particle Separator</li> </ul>
Low Exhaust Emission	<ul> <li>Low Fuel Consumption, Low Oil Consumption</li> </ul>
<ul> <li>Control Panel Suitable for Flexible Application</li> </ul>	<ul> <li>Global Technical Service and Maintenance Support</li> </ul>
<ul> <li>Patented Compact Designed and Sound proof Canopy</li> </ul>	<ul> <li>Wide Range of Affordable Spare Parts</li> </ul>
<ul> <li>Low Operating Cost, Suitable for Heavy-Duty</li> </ul>	<ul> <li>High Quality and Reliable Technology</li> </ul>
<ul> <li>Durability, Low Noise Level</li> </ul>	<ul> <li>Half Century Experience in Generator Manufacturing</li> </ul>

#### STAND BY POWER RATING - (ESP):

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Stand by Power rating. This rating should be applied where reliable utility power is available. A Stand By rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Stand by Power rating. Stand By ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

PRIME POWER RATING - (PRP):

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

#### UNLIMITED TIME RUNNING PRIME POWER (ULTP):

PRP (Prime Power) is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

#### LIMITED TIME RUNNING PRIME POWER (LTP):

LTP (Limited Time Prime Power) is available for a limited number of hours in a no variable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation

#### CONTINUOUS POWER RATING (COP):

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And Continuous Power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.



**JCC 1650** 231 / 400 V - 50 Hz



# PAY ATTENTION TO THE POINTS BELOW IN PICKING AND USING THE GENERATOR

\* Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high-quality oils that manufacturer advice.

\* Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage.

\* If your need is 1000 kVA or above, you should prefer Synchronic Systems with 2-3 generators with failure back up and simultaneous aging.

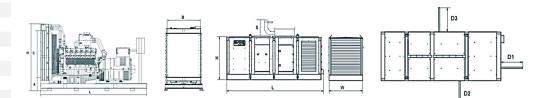
\* These points will provide advantage for you with purchasing and operating the generator.

#### **GENERATOR DIMENSIONS AND TECHNICAL DRAWINGS**



VALUES		OPEN TYPE GENERATOR	CANOPY TYPE GENERATOR
WIDTH	mm	2465	2418
LENGTH	mm	4500	7885
HEIGHT	mm	2463	3308
WEIGHT (NET)	Kg	7540	11870
FUEL TANK CAPACITY	L	2500	2500

SYMBOL	OPEN	CANOPY
L	4500	7885
W	2465	2418
н	2463	2508
S		800
Α	400	
В	1940	
С	2050	
D1		1044
D2		1044
D3		1044
D4		1044
D5		1044







## **DIESEL ENGINE MAIN TECHNICAL PARAMETERS**

GENERAL		
Number of Cylinders		16
Configuration		60°Vee
Aspiration		Turbo Charged&Aftercooled
Combustion System		Direct injection
Compression Ratio		14.9:1
Bore	mm	159
Stroke	mm	159
Displacement	L	50,3
•	L	Electronic
Governing Type		G3
Governing Class Rotation		Counterclockwise
Firing Order		1L,1R, 3L,3R,7L,7R,5L,5R, 8L,8R,6L,6R,2L,2R,4L,4R
Emission		Non-Regulated
FILTERS		
Air Filter		Dry Type, Replaceable
Fuel Filter		With Water Separator
Oil Filter		Element Type, Particulate Trap
LUBRICATION SYSTEM		204
Total System	L	204
Minimum Oil Level	L	186
Nominal Motor Operating Temperature	°C	50
Lubricating Oil Pressure (Rated Speed)	bar	4,8
Relief Valve Opens	kPa	300
Oil / Fuel Consumption Ratio	%	<0,1
Normal Oil Temperature	₀C	120
FUEL CONSUMPTION	. //	
Standby - Load 110%	L/h	342,30
Prime - Load 100%	L/h	309,67
Prime - Load 75%	L/h	237,92
Prime - Load %50	L/h	166,16
COOLING SYSTEM		
Radiator Type	50ºC	Tropical
Total Coolant Capacity	L	420
Max. Perm. Coolant Outlet Temperature	°C	110
Max. Perm. Flow Resist. (Cool. System And Piping)	bar	0,5
Max. Temperature of Coolant Warning	°C	95
Max. Temperature of Coolant Shutdown	ΩōC	98
Thermostat Operation Temperature - Initial Open	°C	76
Thermostat Operation Temperature - Full Open	°C	85
Delivery of Coolant Pump	m ³/ h	12,00
Min. Pressure Before Coolant Pump	bar	0,5
Radiator Face Area	m²	5,26
Rows	Row	7
Matrix Density	Per / Inch	12
Material		Aluminum
Material Width of Matrix	mm	2508
	mm mm	
Width of Matrix		2508
Width of Matrix Height of Matrix	mm	2508 2100





## **DIESEL ENGINE MAIN TECHNICAL PARAMETERS**

ELECTRICAL SYSTEM			
Voltage	V	24	
Starter	kW	2X9	
Alternator Output Ampere	А	35	
Alternator Output Voltage	V	28	
Batteries Capacity	Ah	4x143	
FAN			
Diameter	mm	1600	
Drive Ratio		0.95:1	
Number of Blades		12	
Material		Aluminum	
Туре		Blowing	

## **DIESEL ENGINE MATCHING PARAMETERS - 50 HZ**

Fan Power Consumption (Belt Pulley Driven)kW32,032,0Other Power LosskW10,010,0Mean Effective PressureMPa2275,002275,00Intake Air Flowm ³ / min99,0599,05Exhaust Temperature Limit°C510510Boost Pressure Ratiom ³ / min260,0020,00Mean Piston Speedm / s7.920,00Cooling Fan Air Flowm ³ / min2631,002631,00Alternator Efficiency%V16641513Alternator Efficiency%W220,00PIMEEngry in Fuel (Heat of Combustion)KW320,00320,00				
Note Engine PowerkW1387,01260,9Fan Power Consumption (Belt Pulley Driven)kW32,032,0Other Power LosskW10,010,0Mean Effective PressureMPa2275,002275,00Intake Air Flowm³ / min99,0599,05Exhaust Temperature Limit°C510510Exhaust Flowm³ / min260,00200,00Boost Pressure Ratiom / s7,9260,00Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm³ / min2631,02631,0Typical Generator Output PowerKVA16641513Atternator Efficiency%96,03220,0Beargy in Fuel (Heat of Combustion)KW3220,03220,0KW1429,01429,04429,0Energy to Coolant and Lubricating OilKWKW817,0KW817,0817,0817,0	50 HZ @ 1500 R/MIN		STAND BY	PRIME
Fan Power Consumption (Belt Pulley Driven)kW32,032,0Other Power Consumption (Belt Pulley Driven)kW32,032,0Other Power LossKW10,010,0Mean Effective PressureMPa2275,002275,00Intake Air Flowm <sup>3</sup> / min99,05510510Exhaust Temperature Limit°C510510510Exhaust Flowm <sup>3</sup> / min260,00260,00200,00Boost Pressure Ratiom / s210,00210,00200,00Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm / s663,10513Typical Generator Output Power%VA16641513Alternator Efficiency%3220,03220,0Fance y in Fuel (Heat of Combustion)KW3220,03220,0Gross Heat to PowerkW429,0429,0Energy to Coolant and Lubricating OilkW817,0817,0	Gross Engine Power	kW	1429,0	1299,1
Other Power LosskW10,010,0Mean Effective PressureMPa2275,002275,00Intake Air Flowm³/min99,0599,05Exhaust Temperature Limit°C510510Exhaust Flowm³/min260,00260,00Boost Pressure Ratiom/s210,00210,00Mean Piston Speedm/s7,97,9Cooling Fan Air Flowm³/min2631,002631,00Typical Generator Output PowerkVA16641513Alternator Efficiency%3220,003220,00Ferry in Fuel (Heat of Combustion)kW3220,003220,00KW3220,004429,00320,00320,00Energy to Coolant and Lubricating OilkW64,0076,40KW81,7081,70%	Net Engine Power	kW	1387,0	1260,9
Mean Effective PressureMPa2275,00Intake Air Flowm³/min99,0599,05Exhaust Temperature Limit°C510510Exhaust Temperature Limit°C510260,00Boost Pressure Ratiom³/min260,00200,00Mean Piston Speedm / s7,9210,00Cooling Fan Air Flowm / s7,92631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,003220,0HEAT REJECTIONSTAND BYPHIMEEnergy in Fuel (Heat of Combustion)kW3220,0Gross Heat to PowerkW1429,03220,0Energy to Coolant and Lubricating OilkW764,0764,0KW817,0817,0	Fan Power Consumption (Belt Pulley Driven)	kW	32,0	32,0
Intake Air Flowm ³ / min99,0599,05Exhaust Temperature Limit°C510510Exhaust Flowm ³ / min260,00260,00Boost Pressure Ratiom / s210,00210,00Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm ³ / min2631,02631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONKW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW764,0764,0Kow817,0817,0817,0	Other Power Loss	kW	10,0	10,0
Exhaust Temperature Limit९С510510Exhaust Flowm³/min260,00260,00Boost Pressure Ratiom/s210,0020,00Mean Piston Speedm/s7,9263,10Cooling Fan Air Flowm³/min263,10263,10Typical Generator Output PowerKVA16641513Alternator Efficiency%220,00220,00Farsy in Fuel (Heat of Combustion)KW3220,00320,00Gross Heat to PowerKW1429,001429,00Energy to Coolant and Lubricating OilKW510,0076,00Kimel Kennergy to ExhaustKW817,00817,00	Mean Effective Pressure	MPa	2275,00	2275,00
Exhaust Flowm³/min260,00Boost Pressure Ratio210,00210,00Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm³/min2631,02631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW817,0817,0	Intake Air Flow	m <sup>3</sup> / min	99,05	99,05
Boost Pressure Ratio210,00210,00Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm ³/min2631,02631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW564,0564,0KordKite Stand Bit Stand B	Exhaust Temperature Limit	ōC	510	510
Mean Piston Speedm / s7,97,9Cooling Fan Air Flowm 3 / min2631,02631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONVYRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW817,0817,0	Exhaust Flow	m ³/ min	260,00	260,00
Cooling Fan Air Flowm³/min2631,02631,0Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW564,0564,0KW817,0817,0817,0	Boost Pressure Ratio		210,00	210,00
Typical Generator Output PowerkVA16641513Alternator Efficiency%96,096,0HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW564,0564,0Kurrent Stand St	Mean Piston Speed	m / s	7,9	7,9
Alternator Efficiency%96,096,0HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW764,0764,0Energy to ExhaustkW817,0817,0	Cooling Fan Air Flow	m ³/ min	2631,0	2631,0
HEAT REJECTIONSTAND BYPRIMEEnergy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW764,0764,0Energy to ExhaustkW817,0817,0	Typical Generator Output Power	kVA	1664	1513
Energy in Fuel (Heat of Combustion)kW3220,03220,0Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW764,0764,0Energy to ExhaustkW817,0817,0	Alternator Efficiency	%	96,0	96,0
Gross Heat to PowerkW1429,01429,0Energy to Coolant and Lubricating OilkW764,0764,0Energy to ExhaustkW817,0817,0	HEAT REJECTION		STAND BY	PRIME
Energy to Coolant and Lubricating OilkW764,0764,0Energy to ExhaustkW817,0817,0	Energy in Fuel (Heat of Combustion)	kW	3220,0	3220,0
Energy to Exhaust         kW         817,0         817,0	Gross Heat to Power	kW	1429,0	1429,0
	Energy to Coolant and Lubricating Oil	kW	764,0	764,0
Heat to Radiation kW 210,00 210,00	Energy to Exhaust	kW	817,0	817,0
	Heat to Radiation	kW	210,00	210,00



# JCC 1650

231 / 400 V – 50 Hz



#### **ALTERNATOR SPECIFICATIONS**



ALTERNATOR TECHNIC	AL PARAMETERS				
Insulation Class		Н	Field Control System		Self-Excited
Winding Pitch		2/3 - (N° 6)	A.V.R. Model	Standard	MX341+PMG
Wires		6	Voltage Regulation	%	± 1
Protection		IP 23	Sustained Short-Circuit Current	10 sec	300% (3 IN)
Altitude	m	1000	Total Harmonic (*) TGH / THC	%	< 4
Overspeed	rpm	2250	Wave Form: NEMA = TIF - (*)		< 50
Air Flow	m³/sec.	1,614	Wave Form: I.E.C. = THF - (*)	%	< 1.5
Bearing Drive	N/A	-	Bearing Non-Drive	Bearing	6317-2RZ
Rotor Winding	100%	Copper	Stator Winding	100%	Copper

#### 50 HZ / 231-400V COSQ 0,8 / 1500 RPM

STANDARD USING ALTERNATOR				OPTIONAL USING ALTERNATOR					
BRAND/MODEL	JCBENERGY	JCB 400L2		LEROY-SO	OMER <sup>™</sup>	LSA 50.2L8	STAMFORD	P7C	
DUTY				Continuous			:	Stand By	
AMBIENT	C°			40°C				27°C	
CLASS / TEMP. RISE	C°			Н/ 125° К			I	Н/ 163° К	
SERIES STAR	V	380/220	400/231	415/240	1 Phase	380/220	400/231	415/240	1 Phase
PARALLEL STAR	V	190/110	200/115	208/120	220	190/110	200/115	208/120	220
SERIES DELTA	V	220	230	240	230	220	230	240	230
OUTPUT POWER	kVA	1500,0	1500,0	1556,0	-	1650,0	1650,0	1712,0	-
OUTPUT POWER	kW	1200,0	1200,0	1244,8	-	1320,0	1320,0	1369,6	-



# JCC 1650

231 / 400 V – 50 Hz



## **CONTROL MODULE ALERTS**

Emergency Stop Malfunction High Generator Frequency Low Generator frequency, Low Load Over Current, Unbalanced Current Low Generator Voltage High generator Frequency Phase sequence error Overload, Heat Sensor Broken Low Water Level (Optional) Low Oil Pressure, Reverse Power Low Water Temperature

#### Start Error, Stop Error Magnetic Pickup Error Charge Alternator Error Unbalanced Load Maintenance Time Alarm Low Speed, High Speed Broken Oil Sensor Cable High Oil Temperature (Optional) Low Fuel Level (Optional), High Battery Voltage Low Battery Voltage, High Water Temperature Electronic Can bus Errors (ECU)



- Powder Painted Steel Panel with Lockable Door
- ATS (Automatic Transfer Panel)-Optional
- o Control Module
- o Battery Charger
- Emergency Stop Button
- Terminal Blocks
   Load Output Terminal
   System Protection MSBs
   Circuit Breaker-Optional
- o LCD Screen
- Control Relays
- o Backlit, 128x64 Pixel

# **CONTROL MODULE TECHNICAL PARAMETERS**

**CONTROL PANEL SPECIFICATIONS** 

Brand	JCBENERGY	Brand	Trans-MIDIAMF.232.GP
Dimensions	120mmx94mm.	Protection Class	IP65 From the Front
Weight	260 gr.	<b>Environmental Conditions</b>	2000 meters above sea level
Ambient Humidity	Max. %90.	Ambient Temperature	-20°C to +70°C
DC Battery Supply Voltage	8 - 32 V	Battery Voltage Measurement	8 – 32 V
Network Frequency	5 - 99,9 Hz	Mains Voltage Measurement	3 - 300 V phase -Neutral, 5 - 99,9 Hz
Generator Voltage Measurement	3 - 300 V	Generator Frequency	5 - 99,9 Hz
Current Transformer Secondary	5A	Working Period	Continuous
Charge Alternator Voltage Measurement	8 - 32 V	Charge Alternator Excitation	210mA &12V, 105mA &24V Nominal 2.5W
Communication Interface	RS-232	Analog Sender Measurement	0 - 1300ohm
Generator Contactor Relay Output	5A & 250V	Mains Contactor Relay Output	5A & 250V
Solenoid Transistor Outputs	1A with DC Supply	Start Transistor Outputs	1A with DC Supply
Configurable-3 Transistor Outputs	1A with DC Supply	Configurable-4 Transistor Outputs	1A with DC Supply



**JCC 1650** 231 / 400 V - 50 Hz



# **CONTROL MODULE FUNCTION**

Mains Voltage Level Control	Generator Voltage Level Control	3 Phase Generator Protections	3 Phase AMF Function	Alarm Horn
Network Frequency Level Control	Generator Frequency level Control	- High / Low Voltage	- High / Low Frequency	Heater Tube Thermostat Control
Engine Operating Option Control	Generator Current Level Control	- High / Low Frequency	- High / Low Voltage	Modbus and SNMP
Engine Stop Option Control	Generator Powder Level Control	- Current / Voltage Asymmetry	- High / Low Water Temperature	Working Hour
Engine Speed (RPM) Level Control	Generator work Schedule and Timing Control	- Overcurrent / Overload	- High / Low Load	Ground Leakage
Battery Voltage Options Times	Oil Pressure Controllers Control	Overheat Control	Mains., Generator ATS Control	Analog Modem
Check Engine Maintenance Times	Configurable Analog Inputs and Outputs	1 Phase or 3 Phase, Phase Selection	Network, Voltage, Frequency Display	Ethernet, USB, RS232, RS485
Communication Interfaces GPRS, GSM	Keeping Error Records of Past Events	Parameter Setting via Control Module	Parameter Setting via Computer	Selectable Protection Alarm / Shutdown
Engine Speed, Voltage, Earning	Configurable Programmable Digital Inputs and Outputs	Water Temperature Current and Frequency	Hours of Operation Phase sequence	Battery Voltage Oil Pressure

#### SOUND PROOF CANOPY AND BASE FRAME (CHASIS) SPECIFICATIONS



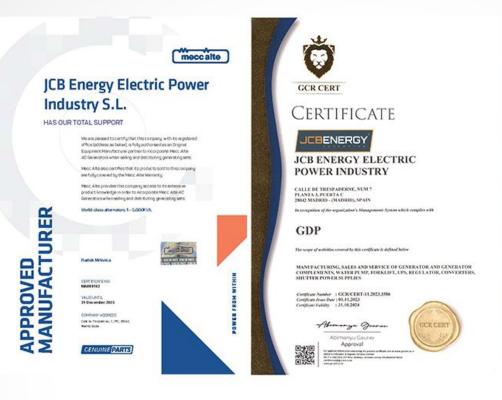
- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- Drying and stabilizing on 200 °C Ovens
- 1500 Hour Salt Test
- Glass wool Isolation, A1 Class Material -50/+500 ℃
- Special Covering Over Glass Wool
- Best Sound Level (in Dba)
- Temperature Tests
- Rustproof Accessories

- Cable Exit Connectors and Glands
- Emergency Stop Button
- Fuel Level Gauge
- Fuel Drain Cap
- Fuel Inlet and Return Records
- I permeability Test for Fuel Tank
- Vacuumed Rubber Mounted
- High Quality weatherstrips
- High Quality Shock Absorbers
- Fuel Filling Cap (with ventilation)
- Lifting and Carrying Equipment
- Internal Exhaust Mufflers (Silencers)
- External Exhaust Mufflers (Silencers)
- Radiator water Filling Cap
- Daily Fuel Tank, External Fuel Tank

# **Our Quality Certificates**

legistration 🔊	Certificate of Re	egistration 👝		
lanagement System of	This is to certify that the Environmental	Management System of		
RGY	JCBENER	RGY		
OWER INDUSTRY	JCB ENERGY ELECTRIC PO	WER INDUSTRY		
ITA C 28042 MADRID - (MADRID), SPAIN	CALLE DE TRESPADERNE, NUM 7 PLANTA 3, PUERT	A C 28042 MADRID - (MADRID), SPAIN		
ts of the following standard	is in accordance with the requirements	of the following standard		
ISO 9001:2015 (Quality Management System)		ISO 14001:2015 (Ervironmental Management System)		
SCOPE		SCOPE		
RATOR AND GENERATOR COMPLEMENTS, WERTERS, SHUTTER POWER SUPPLIES				
(,19)	(IAF Code: 18,1	9)		
hital Registration Date : 35-Sec-0020 11 Schwellinere Date : 35-Sec-0020 27 Schwellinere Date : 35-Sec-0026 Centicute Expty Date : 04-Sec-0026	Centices Number: 2010/2020	initial Registration Data : 25-047-0828 1" Serveillance Data : 25-047-2828 2" Surveillance Data : 25-549-2828 Centicute Euply Data : 24-047-828		
Issued by ARS Assessment Private Limited		Issued by ARS Assessment Private Limited		
Managing Director		-Managing Director		
	CLIAF (AB			
	anagement System of COWER INDUSTRY TA C 20042 MADRID - (MADRID), SPAIN ts of the following standard 2015 mt System) AND GENERATOR COMPLEMENTS, NEATOR AND GENERATOR COMPLEMENTS, NEATOR	enagement System of RECEV OWER INDUSTRY TA C 2004E MADRID (MADRID]. SPAN ts of the following standard 20155 mt System) Market Control Contro		







Certificate

#### JEBENERGY

JCB ENERGY ELECTRIC POWER INDUSTRY

CALLE DE TRESPADERNE, NUM ? PLANTA 3, PUERTA C 28642 MADRID - (MADRID), SPAIN

In reception of the organization's Manegoments System which complex with

ISO 22716:2013:GMP GOOD MANUFACTURING PRACTICES The scope of methodise control by this conflictor is defined below

MANUFACTURING, XALIS AND SERVICE OF GENERATOR AND GENERATOR COMPLEMENTS, WATER PUMP, FORKLIFT, UPS, REGULATOR, CONVERTERS, SHUTTER POWER SUPPLIES

Confficute Number : GCR/CERT-11.2023.3585 Confficute Fund Date : 01.11.2023 Confficute Fadialty : 31.31.2024

Abimarya Gaurae Abimarya Gaurae Approval

Approval





GCRCERI

#### Certificate

HEALTHY & SAFE WORKPLACE CERTIFICATE

JCB ENERGY ELECTRIC POWER INDUSTRY

CALLE DE TRESPADERNE, NUN 7 PLANTA & PETRETA C 2006 MARDING - OADBRIDS, PAIN B has been entried to obtain a Healthy and Sele Workslase Conflicts by fulfiling the regimements for COVI-55 measures, within the physical conditions of the Dubries with in the regime of the Nealthy and Sele Workslase Ended on the Dubries

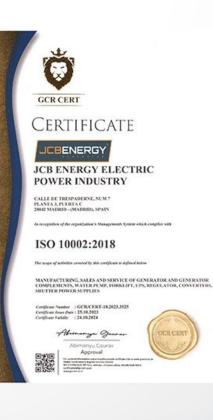
FACTORIES - PRODUCTION LOCATIONS: ELECTRICAL AND ELECTRONICS INDUSTRY

Certifican Number : GCR:CERT-11.2023.3650 Certifican Inac Date : 07.31.2023 Certifican Fullity : 06.31.2024



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www.jcbenergy.es