


# JCB ENERGY ELECTRIC POWER INDUSTRY

📍 MADRID / SPAIN





## GENERATOR GENERAL INFORMATION

| GENERATOR | FREQUENCY | VOLTAGE | POWER FACTOR | SPEED      | DIESEL ENGINE |          |        | ALTERNATOR  |       |        | TYPE OF    | GENERATOR OUTPUT |         |         |
|-----------|-----------|---------|--------------|------------|---------------|----------|--------|---|-------|--------|------------|------------------|---------|---------|
| Model     | Hz        | V       | Cos Q        | Rpm        | Brand         | Model    | Series | Brand   | Model | Series | Operation  | kVA              | kW      | A       |
| JCN 1560  | 50        | 231/400 | 0.8          | 1500       | JCN           | A1928JCI | All    |  | JCB   | 400L1  | Standby    | 1.560,0          | 1.248,0 | 2.254,3 |
|           |           |         |              | Prime      |               |          |        |   |       |        | 1.418,2    | 1.134,5          | 1.049,4 |         |
|           |           |         |              | Continuous |               |          |        |   |       |        | 992,7      | 794,2            | 1.434,6 |         |
| JCN 1560  | 60        | 277/480 | 0.8          | 1800       |               |          |        |   |       |        | Standby    | 1.560,0          | 1.248,0 | 2.254,3 |
|           |           |         |              |            |               |          |        |   |       | 400MX  | Prime      | 1.418,2          | 1.134,5 | 1.049,4 |
|           |           |         |              |            |               |          |        |   |       |        | Continuous | 992,7            | 794,2   | 1.434,6 |

- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Low Exhaust Emission
- Control Panel Suitable for Flexible Application
- Patented Compact Designed and Sound proof Canopy
- Low Operating Cost, Suitable for Heavy-Duty
- Durability, Low Noise Level

- Tropical 50 °C Radiator, First Class Product Support
- Fuel Filter with Water and Particle Separator
- Low Fuel Consumption, Low Oil Consumption
- Global Technical Service and Maintenance Support
- Wide Range of Affordable Spare Parts
- High Quality and Reliable Technology
- Half Century Experience in Generator Manufacturing

### 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.

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

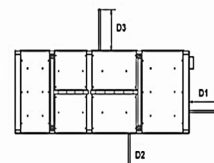
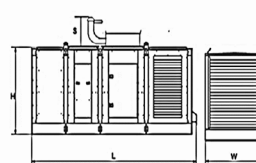
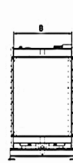
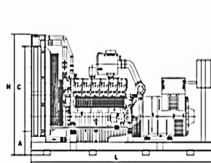
- \* Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high-quality oils that manufacturer advice.
- \* Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive 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 | 2000                | 2390                  |
| LENGTH             | mm | 4500                | 6769                  |
| HEIGHT             | mm | 2310                | 3156                  |
| WEIGHT (NET)       | Kg | 7210                | 11870                 |
| FUEL TANK CAPACITY | L  | 2250                | 2250                  |

| SYMBOL | OPEN | CANOPY |
|--------|------|--------|
| L      | 4500 | 6769   |
| W      | 2000 | 2390   |
| H      | 2310 | 2356   |
| S      |      | 800    |
| A      | 500  |        |
| B      | 1720 |        |
| C      | 1870 |        |
| D1     |      | 1298   |
| D2     |      | 1044   |
| D3     |      | 1044   |
| D4     |      |        |
| D5     |      |        |



## FUEL CONSUMPTION

| PERCENT OF PRIME POWER | 1500 rpm | 1800 rpm |
|------------------------|----------|----------|
|                        | l/hr     | l/hr     |
| 110 %                  | 307,13   | 307,13   |
| 100 %                  | 276,45   | 276,45   |
| 75 %                   | 208,40   | 208,40   |
| 50 %                   | 140,34   | 140,34   |

## DIESEL ENGINE MAIN TECHNICAL PARAMETERS

### GENERAL

|                             |                     |                            |
|-----------------------------|---------------------|----------------------------|
| Number of Cylinders         |                     | 12                         |
| Configuration               |                     | V-Type                     |
| Aspiration                  |                     | Turbocharged & Intercooled |
| Combustion System           |                     | Direct Injection           |
| Compression Ratio           |                     | 14.5:1                     |
| Bore                        | mm                  | 145                        |
| Stroke                      | mm                  | 165                        |
| Displacement                | L                   | 32,7                       |
| Governing Type              |                     | Electronic                 |
| Governing Class             |                     | G3                         |
| Rotation                    |                     | Counterclockwise           |
| Firing Order                |                     | 1-12-5-8-3-10-6-7-2-11-4-9 |
| Emission                    |                     | Tier II                    |
| Moments of Rotation Inertia |                     |                            |
| Engine                      | Kg - m <sup>2</sup> | 24,19                      |
| Flywheel                    | Kg - m <sup>2</sup> | 15,38                      |
| Performance Rating          |                     |                            |
| Speed Droop                 | %                   | ≤1                         |
| Steady State Speed Band     | %                   | ≤0,5                       |

### FILTERS

|             |  |                                |
|-------------|--|--------------------------------|
| Air Filter  |  | Dry Type, Replaceable          |
| Fuel Filter |  | With Water Separator           |
| Oil Filter  |  | Element Type, Particulate Trap |

### FLYWHEEL HOUSING AND FLEX COUPLING

|                    |            |    |
|--------------------|------------|----|
| Flywheel Housing   | SAE (J620) | 0  |
| Flex Coupling Disc | Inch (")   | 18 |

### TEST CONDITIONS

|                                    |        |      |
|------------------------------------|--------|------|
| Ambient Temperature                | %      | 25   |
| Atmospheric Pressure               | KPa    | 100  |
| Relative Humidity                  | Rh (%) | 30   |
| Max. Operating Intake Resistance   | KPa    | <6,2 |
| Exhaust Backpressure Limit         | KPa    | <6   |
| Fuel Temperature (Fuel Inlet Pump) | °C     | 38±2 |

### OVERALL DIMENSIONS

|            |    |      |
|------------|----|------|
| Length*    | mm | 2330 |
| Width      | mm | 1760 |
| Height     | mm | 2135 |
| Dry Weight | kg | 3550 |

\*From front end of radiator to near end of air filter

### FAN

|                  |    |         |
|------------------|----|---------|
| Diameter         | mm | 1530    |
| Drive Ratio      |    | 1,04:1  |
| Number of Blades |    | 8       |
| Material         |    | Metal   |
| Type             |    | Blowing |



## DIESEL ENGINE MAIN TECHNICAL PARAMETERS

### COOLING SYSTEM

|   |                    |          |
|---|--------------------|----------|
| Radiator Type                                     | 50°C               | Tropical |
| Total Coolant Capacity                            | L                  | 240      |
| Max. Perm. Coolant Outlet Temperature             | °C                 | 105      |
| Max. Perm. Flow Resist. (Cool. System And Piping) | bar                | 0,5      |
| Max. Temperature of Coolant Warning               | °C                 | 95       |
| Max. Temperature of Coolant Shutdown              | °C                 | 98       |
| Thermostat Operation Temperature - Initial Open   | °C                 | 66       |
| Thermostat Operation Temperature - Full Open      | °C                 | 78       |
| Delivery of Coolant Pump                          | m <sup>3</sup> / h | 14,50    |
| Min. Pressure Before Coolant Pump                 | bar                | 0,5      |
| Radiator Face Area                                | m <sup>2</sup>     | 3,21     |
| Rows  | Row                | 7        |
| Matrix Density                                    | Per / Inch         | 18       |
| Material  |                    | Aluminum |
| Width of Matrix                                   | mm                 | 1720     |
| Height of Matrix                                  | mm                 | 1870     |
| Pressure Cap Setting                              | kPa                | 90       |
| Estimated Cooling Air Flow Reserve                | kPa                | 0,125    |
| Engine Pre Heater-Tube (with Circulation Pump)    | W                  | 6600     |

### LUBRICATION SYSTEM

|  |     |       |
|--|-----|-------|
| Total System                           | L   | 90    |
| Minimum Oil Level                      | L   | 85    |
| Nominal Motor Operating Temperature    | °C  | 40    |
| Lubricating Oil Pressure (Rated Speed) | bar | 7     |
| Relief Valve Opens                     | kPa | 200   |
| Oil / Fuel Consumption Ratio           | %   | ≤0,48 |
| Normal Oil Temperature                 | °C  | 110   |

### ELECTRICAL SYSTEM

|                           |    |       |
|---------------------------|----|-------|
| Voltage                   | V  | 24    |
| Starter                   | kW | 13    |
| Alternator Output Ampers  | A  | 60    |
| Alternator Output Voltage | V  | 28    |
| Batteries Capacity        | Ah | 2X200 |

## JCB ENERGY DIESEL ENGINE POWER RATINGS

| ENGINE MODEL | A1928JCI          | ENGINE FAMILY                  | JC56    | ENGINE SERIES | All     |         |         |
|--------------|-------------------|--------------------------------|---------|---------------|---------|---------|---------|
| Speed (Rpm)  | Type of Operation | TYPICAL GENERATOR OUTPUT (NET) |         | ENGINE POWER  |         |         |         |
|              |                   |                                |         | Gross         |         | Net     |         |
|              |                   | kVA                            | kWe     | KWm           | Hp      | kWm     | Hp      |
| 1500         | Stand By(Maximum) | 1.564,0                        | 1.251,0 | 1.334,0       | 1.790,6 | 1.303,0 | 1.749,0 |
|              | Prime             | 1.418,0                        | 1.135,0 | 1.213,0       | 1.628,2 | 1.182,0 | 1.586,6 |
| 1800         | Stand By(Maximum) | 1.564,0                        | 1.251,0 | 1.334,0       | 1.790,6 | 1.303,0 | 1.749,0 |
|              | Prime             | 1.418,0                        | 1.135,0 | 1.213,0       | 1.628,2 | 1.182,0 | 1.586,6 |

## DIESEL ENGINE MATCHING PARAMETERS - 50 HZ

| 50 HZ @ 1500 R/MIN                         |                      | STAND BY | PRIME  |
|--|----------------------|----------|--------|
| Gross Engine Power                         | kW                   | 1334,0   | 1213,0 |
| Net Engine Power                           | kW                   | 1303,0   | 1182,0 |
| Fan Power Consumption (Belt Pulley Driven) | kW                   | 28,0     | 28,0   |
| Other Power Loss                           | kW                   | 3,0      | 3,0    |
| Mean Effective Pressure                    | MPa                  | 3,26     | 2,97   |
| Intake Air Flow                            | m <sup>3</sup> / min | 96,25    | 91,67  |
| Exhaust Temperature Limit                  | °C                   | 650      | 650    |
| Exhaust Flow                               | m <sup>3</sup> / min | 264,25   | 251,67 |
| Boost Pressure Ratio                       |                      | 3,40     | 3,50   |
| Mean Piston Speed                          | m / s                | 8,3      | 8,3    |
| Cooling Fan Air Flow                       | m <sup>3</sup> / min | 1913,0   | 1913,0 |
| Typical Generator Output Power             | kVA                  | 1564     | 1418   |
| HEAT REJECTION                             |                      | STAND BY | PRIME  |
| Energy in Fuel (Heat of Combustion)        | kW                   | 3335,0   | 3033,0 |
| Gross Heat to Power                        | kW                   | 1334,0   | 1213,0 |
| Energy to Coolant and Lubricating Oil      | kW                   | 567,0    | 516,0  |
| Heat Dissipation Capacity *                | kW                   | 233,0    | 212,0  |
| Energy to Exhaust                          | kW                   | 967,0    | 879,0  |
| Heat to Radiation                          | kW                   | 100,0    | 91,0   |

\*Intake Intercooled system

## DIESEL ENGINE MATCHING PARAMETERS - 60 HZ

| 60 HZ @ 1800 R/MIN                         |                      | STAND BY | PRIME  |
|--|----------------------|----------|--------|
| Gross Engine Power                         | kW                   | 1334,0   | 1213,0 |
| Net Engine Power                           | kW                   | 1303,0   | 1182,0 |
| Fan Power Consumption (Belt Pulley Driven) | kW                   | 28,0     | 28,0   |
| Other Power Loss                           | kW                   | 3,0      | 3,0    |
| Mean Effective Pressure                    | MPa                  | 2,67     | 2,42   |
| Intake Air Flow                            | m <sup>3</sup> / min | 94,33    | 89,82  |
| Exhaust Temperature Limit                  | °C                   | 650      | 650    |
| Exhaust Flow                               | m <sup>3</sup> / min | 258,97   | 246,58 |
| Boost Pressure Ratio                       |                      | 3,30     | 3,40   |
| Mean Piston Speed                          | m / s                | 9,9      | 9,9    |
| Cooling Fan Air Flow                       | m <sup>3</sup> / min | 1875,0   | 1875,0 |
| Typical Generator Output Power             | kVA                  | 1564     | 1418   |
| HEAT REJECTION                             |                      | STAND BY | PRIME  |
| Energy in Fuel (Heat of Combustion)        | kW                   | 3518,0   | 3200,0 |
| Gross Heat to Power                        | kW                   | 1467,0   | 1334,0 |
| Energy to Coolant and Lubricating Oil      | kW                   | 623,0    | 568,0  |
| Heat Dissipation Capacity *                | kW                   | 262,0    | 238,0  |
| Energy to Exhaust                          | kW                   | 1063,0   | 967,0  |
| Heat to Radiation                          | kW                   | 105,0    | 96,0   |

\*Intake Intercooled system

## JCB ALTERNATOR TECHNICAL PARAMETERS AND SPECIFICATIONS



| ALTERNATOR TECHNICAL PARAMETERS |                      |                                 |                |             |
|---------------------------------|----------------------|---------------------------------|----------------|-------------|
| Insulation Class                | H                    | 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                    | Total Harmonic (*) TGH / THC    | %              | < 4         |
| Overspeed                       | rpm                  | Wave Form: NEMA = TIF - (*)     |                | < 50        |
| Air Flow                        | m <sup>3</sup> /sec. | 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 |



# JCN 1560 & 1560

231 / 400 V – 50 Hz & 277 / 480 V – 60 Hz



## ALTERNATOR SPECIFICATIONS

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

STANDARD USING ALTERNATOR

OPTIONAL USING ALTERNATOR

BRAND/MODEL



JCB 400L1



LSA 50.2L7

STAMFORD

P7B

DUTY

Continuous

Stand By

AMBIENT

C°

40°C

27°C

CLASS / TEMP. RISE

C°

H/ 125° K

H/ 163° K

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

1418,0

1418,0

1471,0

-

1560,0

1560,0

1618,0

-

OUTPUT POWER

kW

1134,4

1134,4

1176,8

-

1248,0

1248,0

1294,4

-

60 HZ / 277-480V COSQ 0,8 / 1800 RPM

STANDARD USING ALTERNATOR

OPTIONAL USING ALTERNATOR

BRAND/MODEL



JCB 400MX



LSA 50.2M7

STAMFORD

HC6K

DUTY

Continuous

Stand By

AMBIENT

C°

40°C

27°C

CLASS / TEMP. RISE

C°

H / 125° K

H / 163° K

SERIES STAR

V

416/240

440/254

480/277

1 Phase

416/240

440/254

480/277

1 Phase

PARALLEL STAR

V

208/120

220/127

240/138

-

208/120

220/127

240/138

-

SERIES DELTA

V

240

254

277

240

240

254

277

240

OUTPUT POWER

kVA

1283,0

1350,0

1421,0

-

1411,0

1485,0

1563,0

-

OUTPUT POWER

kW

1026,4

1080,0

1136,8

-

1128,8

1188,0

1250,4

-



## 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)

## CONTROL PANEL SPECIFICATIONS



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

## CONTROL MODULE TECHNICAL PARAMETERS

| Brand                                 |  | Brand                             | Trans-MIDIAMF.232.GP                  |
|---------------------------------------|---|-----------------------------------|---------------------------------------|
| Dimensions                            | 120mmx94mm.   | Protection Class                  | IP65 From the Front                   |
| Weight                                | 260 gr.   | Environmental Conditions          | 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                     |

## CONTROL MODULE FUNCTION

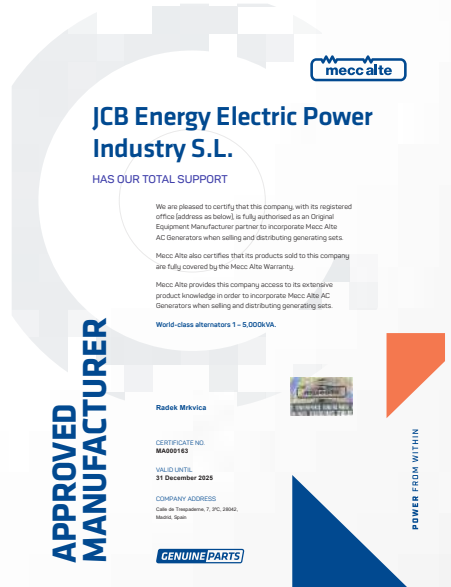
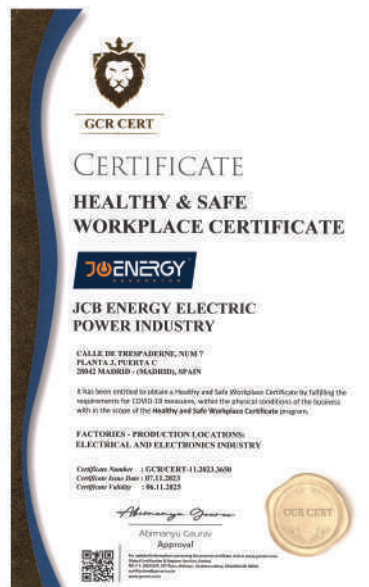
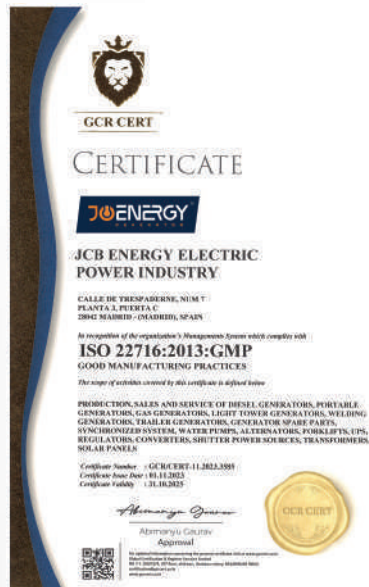
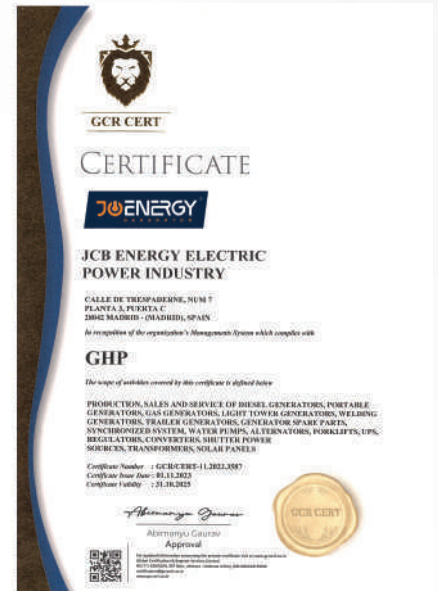
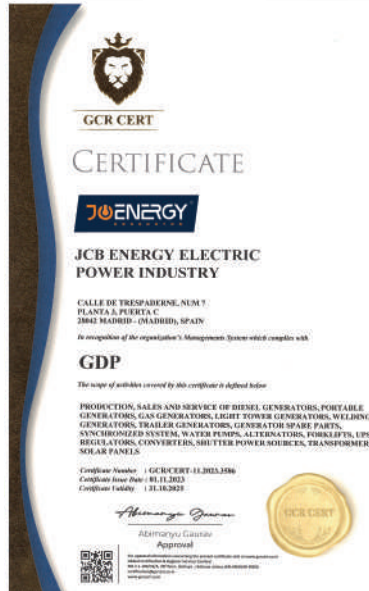
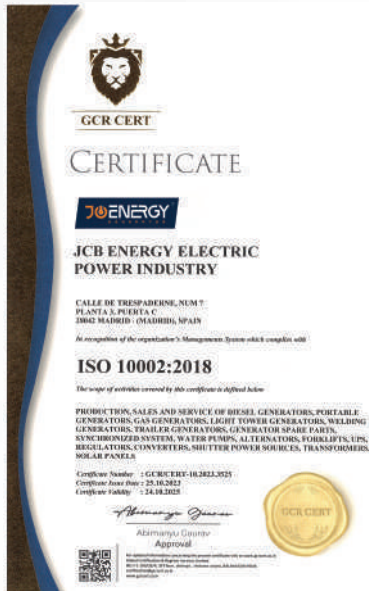
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|------------------------------------|--|---|-------------------------------------|--|
| Mains Voltage Level Control        | Generator Voltage Level Control                      | 3 Phase Generator Protections           | 3 Phase AMF Function                | 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

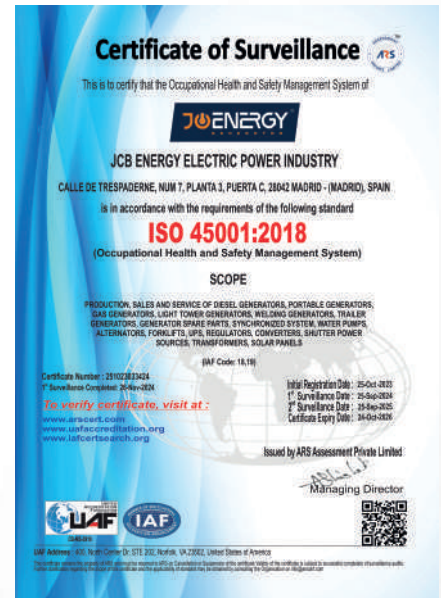
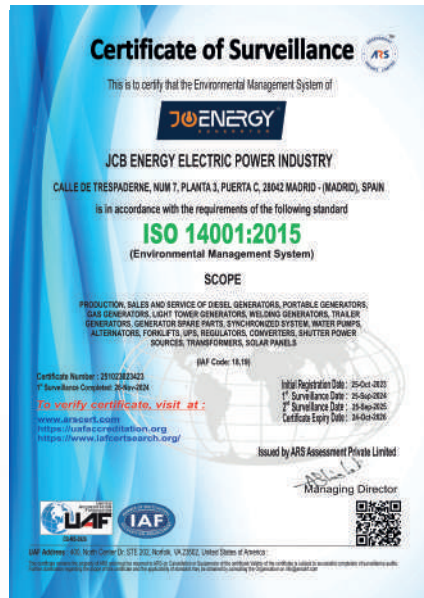
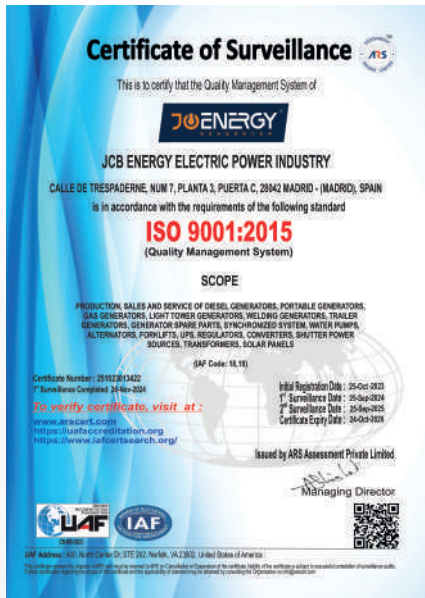
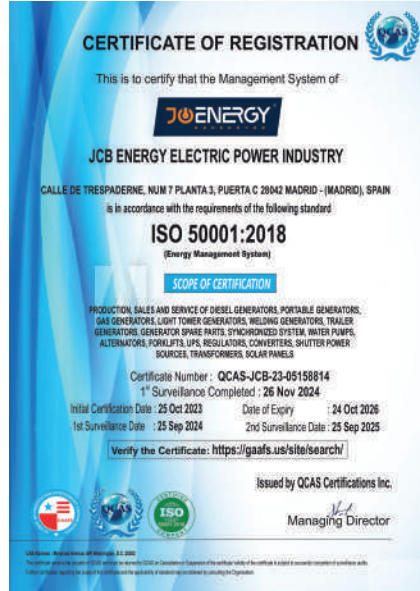
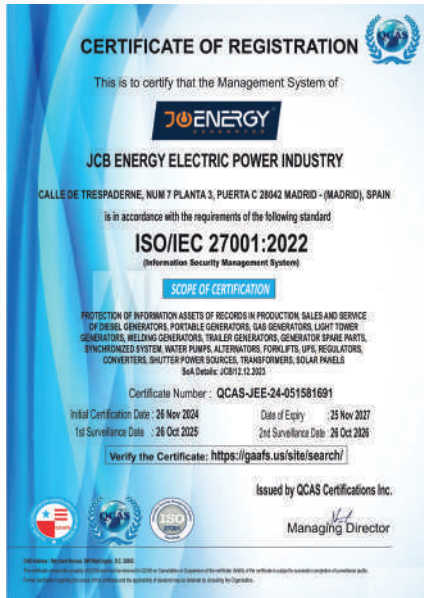


- Special, Registered JCB Energy Design and Colour
- A1 Quality DKP / HRU / Galvanized Steel
- Sensitive Twist on Automatic Press Brake
- Delicate Cut on Automatic Punch and Laser Bench
- Sensitive Welding on Robotic Welding Bench
- Chemical Cleaning Nano Technology Before Painting
- Robotic Painting with Electrostatic Powder Paint
- Drying and stabilizing on 200 °C Ovens
- 1500 Hour Salt Test
- Glass wool Isolation, A1 Class Material -50/+500 °C
- 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
- Impermeability 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

# SERTİFİKATLARIMIZ







# MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 2372384

Initial certification date: 14 August 2021

Valid: 14 October 2021 – 13 October 2026

This is to certify that the management system of **HD Hyundai Infracore Co., Ltd. Head Office & Incheon Plant** 489, Injung-ro, Dong-gu, Incheon, 22502, Republic of Korea and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Environmental Management System standard: **ISO 14001:2015**

This certificate is valid for the following scope: **Design, Development, Manufacture, Servicing of Internal Combustion Engine for use in Marine Industry, General Industry and Automotive Industry, and Earth Moving Equipment (Excavator, Wheel Loader, Dozer), Testing of Earth Moving Equipment (Excavator and Wheel Loader).**

Place and date:  
Buenos Aires, 09 October 2021

For the issuing office:  
DNV Business Assurance  
Certifying: DNV LB Buenos Aires, Netherlands

Site Lead  
Management Representative

Limit of liability of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV Business Assurance B.V., Certifying: 1, DNV LB, Barenveld, Netherlands, NL, +31-20-5102000, www.dnv.com/assure

# MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 2372385

Initial certification date: 13 January 2021  
(based on OHSAS 18001)

Valid: 14 October 2021 – 13 October 2026

This is to certify that the management system of **HD Hyundai Infracore Co., Ltd. Head Office & Incheon Plant** 489, Injung-ro, Dong-gu, Incheon, 22502, Republic of Korea and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Occupational Health and Safety Management System standard: **ISO 45001:2018**

This certificate is valid for the following scope: **Design, Development, Manufacture, Servicing of Internal Combustion Engine for use in Marine Industry, General Industry and Automotive Industry, and Earth Moving Equipment (Excavator, Wheel Loader, Dozer), Testing of Earth Moving Equipment (Excavator and Wheel Loader).**

Place and date:  
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CHAMBER OF COMMERCE  
INDUSTRIAL  
SALIDA  
Nº de Registro: 945 / RG 645  
Fecha: 29/07/2024 12:00:00

IRENE SANCHEZ ROMAN, MANAGER OF THE DEPARTMENT OF LEGAL ADVISORY SERVICES AND THE DATABASE OF THE OFFICIAL CHAMBER OF COMMERCE, INDUSTRY AND SERVICES OF MADRID, WITH REGISTERED OFFICE AT PLAZA DE LA INDEPENDENCIA 1, MADRID, SPAIN

CERTIFY: That, according to the background data on record at this Chamber and others produced by the Company:

JCB ENERGY ELECTRIC POWER INDUSTRY SL, a company with Tax ID: Number B13975954, and its registered office at street Tropezadonero 7, 28042 Madrid is registered on 8 May 2024, under the heading of the 34 Section, companies, of the Economic Activities Tax Tariff Number 342 to perform the following activity:

- Manufacture of electrical material for use and equipment

In witness whereof, for the appropriate purpose, I have issued and signed this Certificate, to which I affix the stamp of this Chamber, in Madrid on 26 July 2024.

CHAMBER OF COMMERCE  
INDUSTRIAL  
SALIDA  
Nº de Registro: 950 / RG 650  
Fecha: 29/07/2024 12:00:00

IRENE SANCHEZ ROMAN, DIRECTORA DEL DEPARTAMENTO DE ASSESORIA JURIDICA Y CENSO DE LA CAMARA OFICIAL DE COMERCIO, INDUSTRIA Y SERVICIOS DE MADRID, CON DOMICILIO SOCIAL EN LA PLAZA DE LA INDEPENDENCIA Nº 1, MADRID-ESPAÑA

CERTIFICA: Que de los antecedentes que obran en esta Corporación y de otros exhibidos por la sociedad, resulta:

**PRIMERO**.- Que la compañía JCB ENERGY ELECTRIC POWER INDUSTRY SL, es una sociedad mercantil de nacionalidad española, constituida mediante escritura pública de fecha 23 de junio de 2023, anotada por don José María Vázquez, Notario del Registro de Madrid con el número 1.251 de acuerdo de su protocolo, a inscribirse en el Registro Mercantil al Tomo 45.424, Folio 40, Hoja M-799.035, Inscripción 1ª.

**SEGUNDO**.- Que según se desprende de la mercantilización de constitución, en el artículo 3 de los Estatutos de la compañía JCB ENERGY ELECTRIC POWER INDUSTRY SL, resulta que tiene por objeto social:

"Actividad principal 27.11. Fabricación de motores, generadores y transformadores eléctricos".

**TERCERO**.- Que según consta en la escritura de constitución, el capital social de la compañía JCB ENERGY ELECTRIC POWER INDUSTRY SL, se fija en la cantidad de 19.005,00 € (DIECINUEVE MIL NOVECIENTOS CINCO EUROS), dividido en 19.000 participaciones sociales, de 1,00 € (UN EURO) de valor nominal cada una, distribuido proporcionalmente del 1 al 19.000, ambos inclusive, que son íntegramente asumidos y desembolsados por el socio fundador.

**CUARTO**.- Que según consta en la escritura de constitución citada en párrafos anteriores, la compañía JCB ENERGY ELECTRIC POWER INDUSTRY SL, opta por el sistema de Administración Única y nombra por tiempo indefinido a don Mohamed A.M. Eladiri, con Número de Identidad Entregado Y42M83279, para que actúe en nombre y representación de la mercantil, con cuantas facultades legales y estatutariamente correspondan a dicho cargo, prestando el administrador nombrado a la aceptación del mismo.

**QUINTO**.- Que la compañía JCB ENERGY ELECTRIC POWER INDUSTRY SL, con domicilio en calle Tropezadonero número 7, 28042 Madrid y presunta de Número de Identificación fiscal B13975954, consta dada de alta en el grupo empresarial 342 de la Sección 1ª empresarial de las Tarifas del Impuesto sobre Actividades Económicas, que le habilita para ejercer la actividad "Fabricación de material eléctrico de utilización y equipamiento".

CE

## CE DECLARATION OF CONFORMITY

JCB ENERGY ELECTRIC POWER INDUSTRY SL  
C/ ALFREDO MARQUESE, 10, PUERTA 1, PLANTA 1ª TORREDO 28014 MADRID

Description Of The Product: GENERATORS AND PUMPS

Product Brand/Model/Type: (DIESEL GENERATORS, GAS GENERATORS, PORTABLE GENERATORS, LIGHT TOWERS, WATERS PUMPS, FORKlift, UPS, REGULATORS, CONVERTERS, ALTERNATORS, WELDING GENERATORS, TAILGATE GENERATORS, BATTERY POWER SOURCE)

Applicable harmonized standards: EN ISO 12170:2019, EN ISO 14343:2019, EN ISO 14344:2019, EN ISO 14345:2019, EN ISO 14346:2019, EN ISO 14347:2019, EN ISO 14348:2019, EN ISO 14349:2019, EN ISO 14350:2019, EN ISO 14351:2019, EN ISO 14352:2019, EN ISO 14353:2019, EN ISO 14354:2019, EN ISO 14355:2019, EN ISO 14356:2019, EN ISO 14357:2019, EN ISO 14358:2019, EN ISO 14359:2019, EN ISO 14360:2019, EN ISO 14361:2019, EN ISO 14362:2019, EN ISO 14363:2019, EN ISO 14364:2019, EN ISO 14365:2019, EN ISO 14366:2019, EN ISO 14367:2019, EN ISO 14368:2019, EN ISO 14369:2019, EN ISO 14370:2019, EN ISO 14371:2019, EN ISO 14372:2019, EN ISO 14373:2019, EN ISO 14374:2019, EN ISO 14375:2019, EN ISO 14376:2019, EN ISO 14377:2019, EN ISO 14378:2019, EN ISO 14379:2019, EN ISO 14380:2019, EN ISO 14381:2019, EN ISO 14382:2019, EN ISO 14383:2019, EN ISO 14384:2019, EN ISO 14385:2019, EN ISO 14386:2019, EN ISO 14387:2019, EN ISO 14388:2019, EN ISO 14389:2019, EN ISO 14390:2019, EN ISO 14391:2019, EN ISO 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**JCBENERGY**  
GENERATOR



**CE** -VERTA-106188  
-VERTA-106189

[www.jcbenergy.com](http://www.jcbenergy.com)