


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

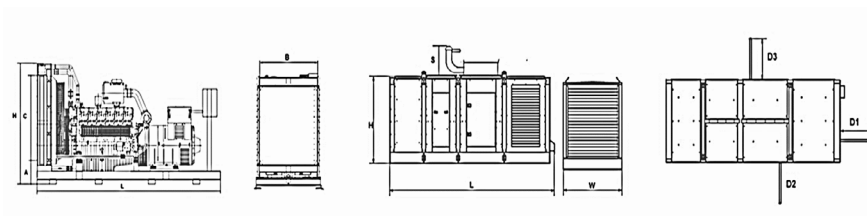
- * Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high-quality oils that manufacturer advice.
- * Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive 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 ²	24,19
Flywheel	Kg - m ²	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 ³ / h	14,50
Min. Pressure Before Coolant Pump	bar	0,5
Radiator Face Area	m ²	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 ³ / min	96,25	91,67
Exhaust Temperature Limit	°C	650	650
Exhaust Flow	m ³ / 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 ³ / 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 ³ / min	94,33	89,82
Exhaust Temperature Limit	°C	650	650
Exhaust Flow	m ³ / 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 ³ / 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 ³ /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

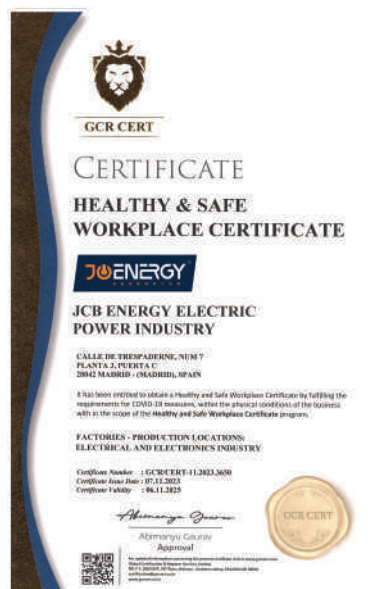
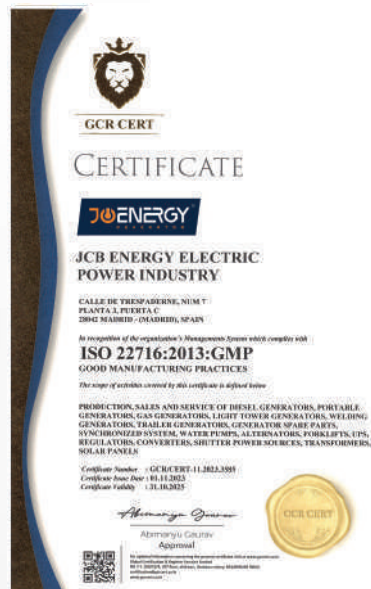
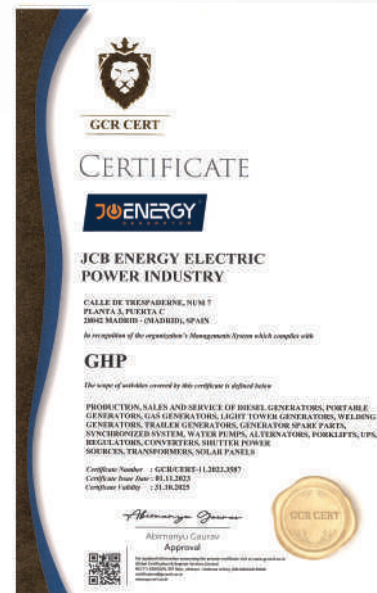
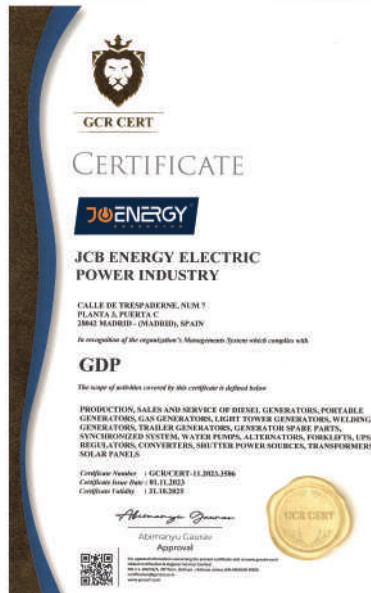
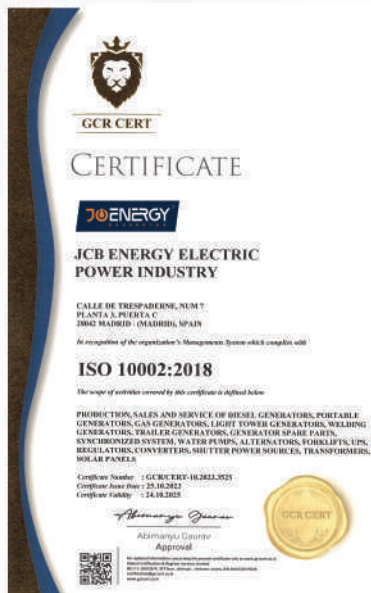
Mains Voltage Level Control	Generator Voltage Level Control	3 Phase Generator Protections	3 Phase AMF Function	Alarm Horn
Network Frequency Level Control	Generator Frequency level Control	- High / Low Voltage	- High / Low Frequency	Heater Tube Thermostat Control
Engine Operating Option Control	Generator 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

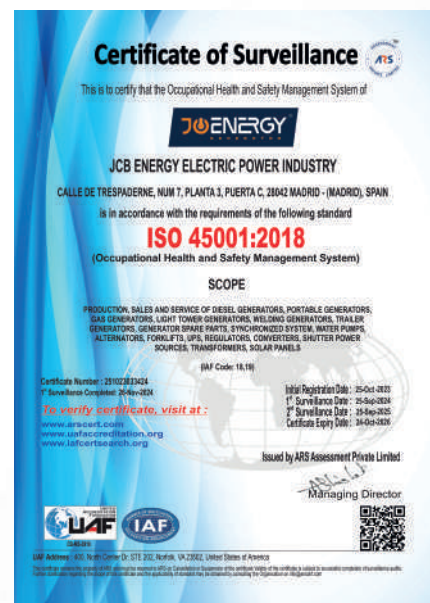
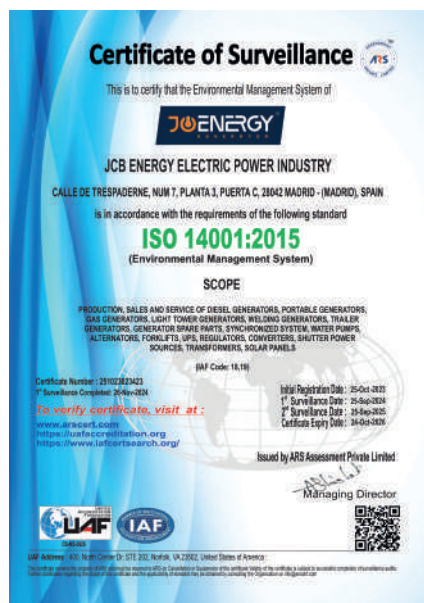
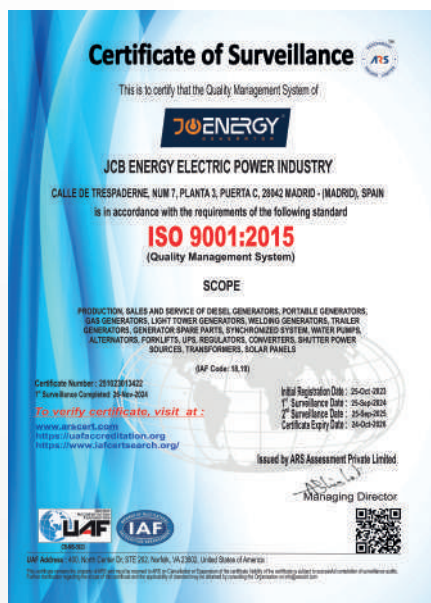
SOUND PROOF CANOPY AND BASE FRAME (CHASIS) SPECIFICATIONS



- 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

OUR CERTIFICATES





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: Barcelona, 09 October 2021

For the issuing office: DNV Business Assurance

DNV Business Assurance

DNV AS, Strandveien 69, NO-1300 Sandnessjøen, Norway

DNV KMS Management Representative

Limit of liability of conditions as set out in the Certificate Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance B.V., Containing: 1. DNV AS, Strandveien 69, NO-1300 Sandnessjøen, Norway

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 2372385

Initial certification date: 13 January 2021

Valid: 14 October 2021 – 13 October 2026

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CAMARA DE COMERCIO INDUSTRIA Y SERVICIOS DE MADRID

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CE DECLARATION OF CONFORMITY

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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 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: Barcelona, 09 October 2021

For the issuing office: DNV Business Assurance

DNV Business Assurance

DNV AS, Strandveien 69, NO-1300 Sandnessjøen, Norway

DNV KMS Management Representative

Limit of liability of conditions as set out in the Certificate Agreement may render this Certificate invalid.

ACCREDITED UNIT: DNV Business Assurance B.V., Containing: 1. DNV AS, Strandveien 69, NO-1300 Sandnessjøen, Norway

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