

## Greenpower DEUTZ diesel engine

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1500 RPM	Type GP 180DZ
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**Engine:** BF6M 1013 FCG2

**Alternator:** ECP38-2SN

### These are the characteristics of the **BF6M 1013 FCG2 GEN:**

6-cylinders engine in V-configuration.

Turbocharging with intercooler air/air..

Cylinder displacement: 1,985 cm<sup>3</sup>.

4-valve technology.

“Split-pin” crankshaft.

Extremely compact design.

Acoustically optimized combustion system.

Rigid crankcase.

Global service network with over 3,000 service station in more than 150 countries.

Electronically controlled fuel injection pump with magnetic valve system type Deutz MVS (option).

Electronic engine governor type Deutz EMR 2.

### These are the benefits for you:

- ▶ Its low noise radiation level is exemplary. Acoustically relevant components with a very rigid structure. This guarantees you a superior position to other competitors.
- ▶ The environmental friendly and high-tech combustion ensures not only excellent operating behaviour but also outstanding savings in economical costs.
- ▶ The control functions of the electronic engine governor make it possible to plan service intervals avoiding costly downtimes.
- ▶ The compact design saves installation space and thus installation costs.
- ▶ Low emission levels, the 1015 engine family meets TA-Luft standards both for NO<sub>x</sub> 4000 mg/nm<sup>3</sup> and NO<sub>x</sub> 2000 mg/nm<sup>3</sup>

## ► Rating table: **BF6M1013FCG2** The Genset Engine **50Hz**

Engine type		<b>BF6M 1013FCG2</b>	
Speed	min <sup>1</sup>   rpm	1500	
Frequency	Hz	<b>50</b>	
<b>Engine/genset ratings</b>			
Prime power, ICN (PRP)	kW   hp	166   222	
Limited time running power, IFN (LTP)	kW   hp	183   245	
<b>Typical generator power output</b>			
Typical generator power output (COP)	kVA	172	
Typical generator power output (PRP)	kVA	184	
Typical generator power output (LTP)	kVA	185	
<b>Spec. fuel consumption PRP (LTP)</b>			
100 % load	g/kWh   lb/hp-hr	223   0,367	
75 % load	g/kWh   lb/hp-hr	221   0,363	
50 % load	g/kWh   lb/hp-hr	222   0,365	

### Standard specification

**Standard engine:** Connection housing SAE 2, with flywheel 10"/11.5

**Cooling system:** Cooling system HAT, depending on engine version incl. charge air cooler, pressure fan.

**Exhaust system:** Without silencer, with counterflange for exhaust system on the turbocharger.

**Filter:** Lube oil filter, air filter depending on engine version loose as kit or assembled.

**Engine electrics:** 12 Volt version, electrical engine governor standard in 6-cylinder FC engines.

**Governor:** Mechanical standard, optional electronic governor.

**Miscellaneous:** Painted dark gray.

### Scope of Supply:

The engine and the alternator are mounted together forming a rigid monoblock, the shafts are connected by a flexible disc connection. The monoblock is mounted on a steel base frame via silent blocks. The base frame is including a fuel tank. Starting is electric and it includes a battery. The genset monitoring system consist of a control module.

#### PRP\* Kva/KW:

Available electrical power (at a variable load) with a medium of 80% of the indicated maximum power. A 10% overload capability is available

#### LTP\*\* Kva/KW:

Available electrical load (at a variable load) during a maximum of 500 hours per year. No overload capability is available.

## CONTROL PANEL

Manual or automatic start control panel

Manual or automatic remote boot controller, selector switch for Off, Man and Auto with the key.

Complete motor protection functions with alarms visualized via LEDs in the front.

The control unit 6 is set via DIP switches in the rear part of the case.

Standard circuit breaker and differential relay.

## TECHNICAL DATA

### ENGINE CHARACTERISTICS

MAKE	MODEL
DEUTZ	BF6M 1013 FC G2

#### GENERAL DATA

Power PRP (kWm)	176.00
Power LTP (kWm)	193.80
No. cylinders	6
Cylinder capacity (L)	7.15
Diameter per stroke (mm)	108 x 130
Compression ratio	18.10
Cooling system	LIQUID
Injection	DIRECT
Suction	TURBO
Series regulator	ELECTRONIC
Steering wheel coupling	-

#### Lubrication system

Oil capacity (L)	20
Oil consumption (%)	0.30
Min. alarm oil pressure (bar)	2.70

#### Ventilation system

Air cooling flow (m3/h)	11520
Combustion air flow (m3/h)	745.60
Max. back pressure for fan (mbar)	0

#### Exhaust system

Exhaust gas flow (m3/h)	2112
Exhaust back pressure (mbar)	30
Temp. exhaust gases (°C)	530

#### Electrical system

VDC (V)	12
Battery (Ah)	120
Engine start-up (kW)	3

# ALTERNATOR CHARACTERISTICS

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MAKE	MODEL
MECC-ALTE ECO 38-2SN	(400 / 230 V)

## GENERAL DATA

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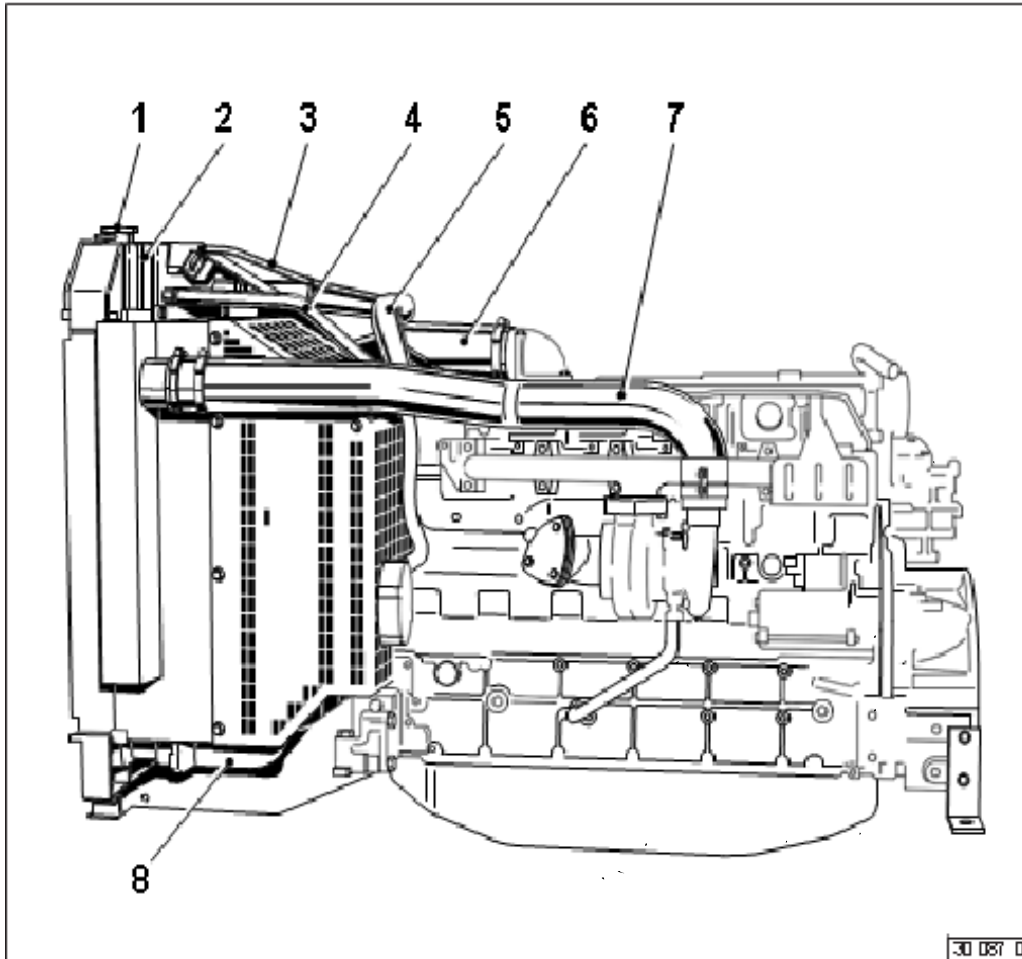
Power PRP (kVA)	200
Power LTP (kVA)	220
Efficiency Alt. 3/4 %	92.90
Efficiency Alt. 4/4 %	92.70
No. Poles	4
Voltage regulator	DSR
No. wires	12
Insulation	H
Xd (%)	200
X'd (%)	11
X	5.90
Degree of protection	IP21

## ► Engine description

Type of cooling:	Liquid cooling, thermostatically controlled, charge-air-cooled engines with air-to-air charge air cooler
Crankcase:	High grey cast iron crankcase, for monobloc construction
Crankcase breather:	Closed-circuit crankcase breather
Cylinder head:	Grey cast iron block-type cylinder head
Valve arrangement/ timing:	One inlet and one exhaust valve per cylinder, actuated via tappets, push rods and rocker arms, camshaft driven by geartrain
Piston:	Three-ring piston, two compression rings and one oil scraper ring
Piston cooling:	Oil cooled with spray nozzles (channel-cooled piston)
Connecting rod:	Forged steel rod
Crankshaft bearings:	Tri-metal plain bearings
Crankshaft:	With integral counterweights
Camshaft:	Forged steel shaft
Lubrication system:	Forced-feed circulation lubrication with gear pump
Lube oil cooler:	Oil cooler integrated in coolant circuit
Lube oil filter:	Paper-type microfilter as replaceable-cartridge full flow filter
Injection pump/ governor:	Single injection pumps for each cylinder integrated in crankcase Mechanical centrifugal governor (standard); electronic governor (EMR) optional
Fuel lift pump:	Integrated in belt drive
Injection nozzle:	Six-hole nozzle
Fuel filter:	Replaceable cartridge
Alternator:	Three-phase alternator 12 V or 24 V
Starter motor:	12 V or 24 V
Heating system:	Optional connection for cab heating to engine cooling circuit

## Identification of engine parts

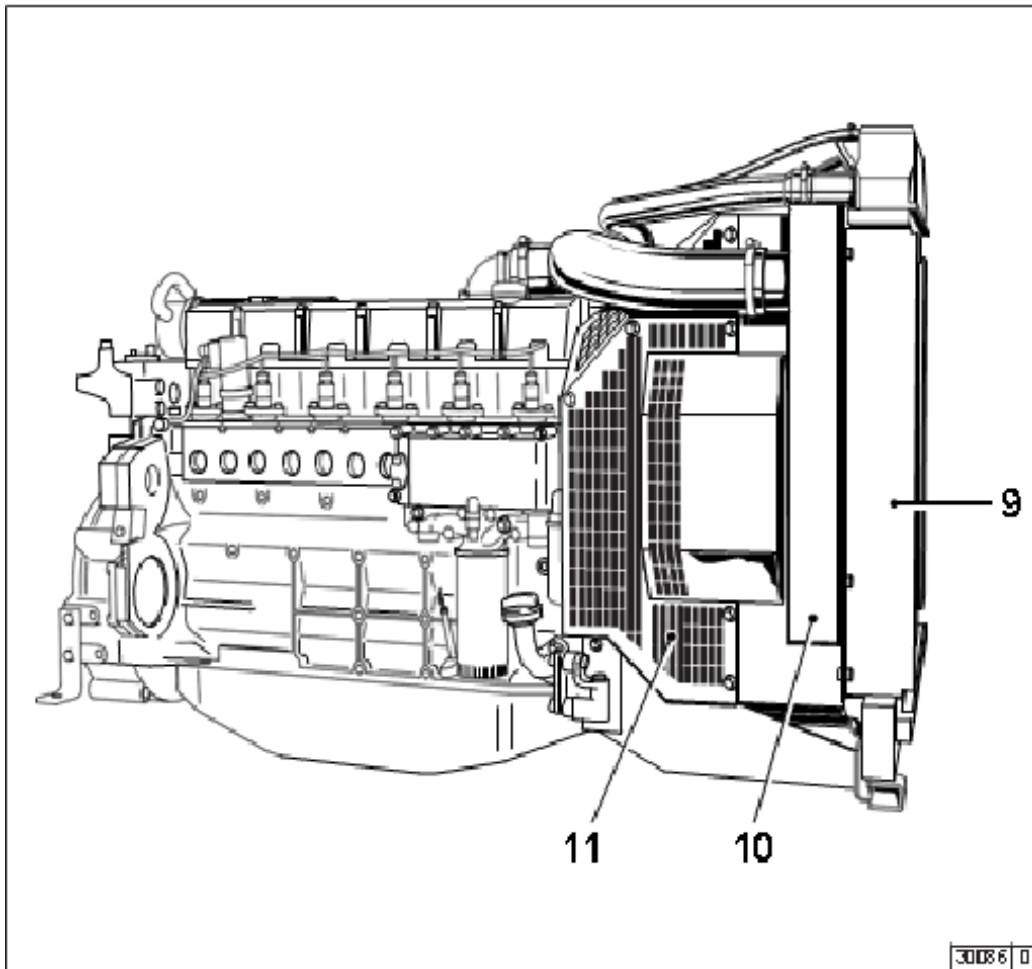
Service side *BF6M1013FCG2*



- 1 Filler neck with cap
- 2 The expansion tank
- 3 Vent line from the cylinder head to expansion tank
- 4 Expansion line from expansion tank to coolant pump
- 5 Coolant line from crankcase to engine fluid radiator
- 6 Charge-air line from the charge-air cooler to engine
- 7 Charge-air line from exhaust turbocharger to charge-air cooler
- 8 Coolant line from the engine fluid radiator to the engine thermostat

## Identification of engine parts

Starter side *BF6M1013FCG2*



9 Engine radiator fluid

10 Charge-air cooler

11 Protective guard