

## Greenpower DEUTZ diesel engine

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1500 RPM	Type GP 40DZa
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The engine with integrated air cooling system.

**Engine:** BF4L2011  
**Alternator:** ECO32-3S/4

These are the characteristics of the **BF4L2011** Gen:

- 4 cylinder naturally aspirated in-line engines.
- Displacement: 0.78 l/cylinder.
- Integrated oil-cooling (engine is delivered complete with cooler).
- Acoustically optimized crankcase.
- All service points on the same engine side.
- Electronic engine governor (option).
- Compact design and low weight.
- Worldwide service network with over 1,000 locations.

Your benefits:

- ▶ Low noise emission, cost savings as no noise attenuation measures are required.
- ▶ Long service intervals: 1,000 hour oil change intervals and low fuel consumption bring savings in operating costs.
- ▶ Low installation costs.
- ▶ Excellent load takeover characteristics ensure prompt power supply.
- ▶ Combined oil cooling and lubrication prevents corrosion and cavitation. High reliability and durability together with reduced maintenance requirement and wear parts.

## ► Rating table: **BF4L2011**TheGensetEngine.50Hz

Engine type	BF4L2011	
Speed	min <sup>1</sup>   rpm	1500
Frequency	Hz	50
<b>Engine/genset ratings</b>		
Continuous power, ICN (COP)	kW   hp	34,6   47.1
Prime power, ICN (PRP) <sup>3)</sup>	kW   hp	36,4   49.5
Limited time running power, IFN (LTP)	kW   hp	38,2   52.0
<b>Typical generator power output</b>		
Typical generator power output (COP)	kVA	38,0
Typical generator power output (PRP) <sup>5)</sup>	kVA	40,0
Typical generator power output (LTP)	kVA	42,0
<b>Spec. fuel consumption PRP (LTP)</b>		
100 % load	g/kWh   lb/hp-hr	220   0.356
75 % load	g/kWh   lb/hp-hr	225   0.365
50 % load	g/kWh   lb/hp-hr	235   0.381
25 % load	g/kWh   lb/hp-hr	320   0.518

### 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.

### 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.

## 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.

### Standard specification

Standard engine: Flywheel housing SAE 4 (5 for n = 3000 min<sup>1</sup> rpm); flywheel with 6.5 connection.

Cooling system: Integrated cooling system, V- belt guard.

Filter: Dry air cleaner with mechanical restriction indicator, fuel filter.

Engine electrics: Alternator 14 V, 60 A; starter motor with 12 V, 2.2 kW.

Governor: Mechanical (Bosch).

## TECHNICAL DATA

Engine		Alternator	
Engine type:	BF4L2011	Alternator Type:	ECO32-3S/4
Eng. Power kW COP:	34,6	Nº of poles:	4
Eng. Power kW PRP:	36,4	Eff. At 3/4 %:	89,1
Eng. Power kW LTP:	38,2	Eff. At 4/4 %:	88,6
Nº Cylinders:	4	Alt. rating PRP kVA III Kw II:	40
Displacement cm3:	3110	Alt. rating LTP kVA III kW II:	44
Bore/stroke (mm/mm):	94/112	Output Power PRP kVA III kW II:	40
Compression ratio:	17,5	Output Power LTP kVA III kW II:	42,3
Cooling:	AIR	Current Amp PRP:	57,6
Injection:	DIRECT	Current Amp LTP:	60,8
Aspiration:	TURBO	Standard Circuit Breaker (Amp):	63 IV
Standard governor:	MECHANICAL	Xd (%):	190
Governing control quality:	G2	X'd (%):	14,3
Speed droop mech gov. (%):	5	X:	10
Exhaust gases temperature (°C):	510	Nº of wires:	12
Exhaust gases flow (m3/h):	432	Insulation:	H
Max Exh. Back pres. (mbar):	30	Regulator AVR:	SR7/2
Coolant capacity (lit.):	-	Protection:	IP21
Cooling air flow (m3/h):	?		
Max allow. Intake dep. (mbar):	20		
Combustion air flow (m3/h):	151		
Oil cap. (Litres):	10		
Oil cons. (kg/hr or % of fuel cons):	0,30%		
Min oil press warning (bar):	2,1		
Fuel cons. 25% lit/h:	3,4		
Fuel cons. 50% lit/h:	5,2		
Fuel cons. 75% lit/h:	6,8		
Fuel cons. 100% lit/h:	9,3		
Electric system VDC:	12		
Type:	Neg to ground.		
Battery (Ah):	60		
Starting motor (kW):	3		
Flywheel Housing:	SAE3/11,5		

## ► Engine Description

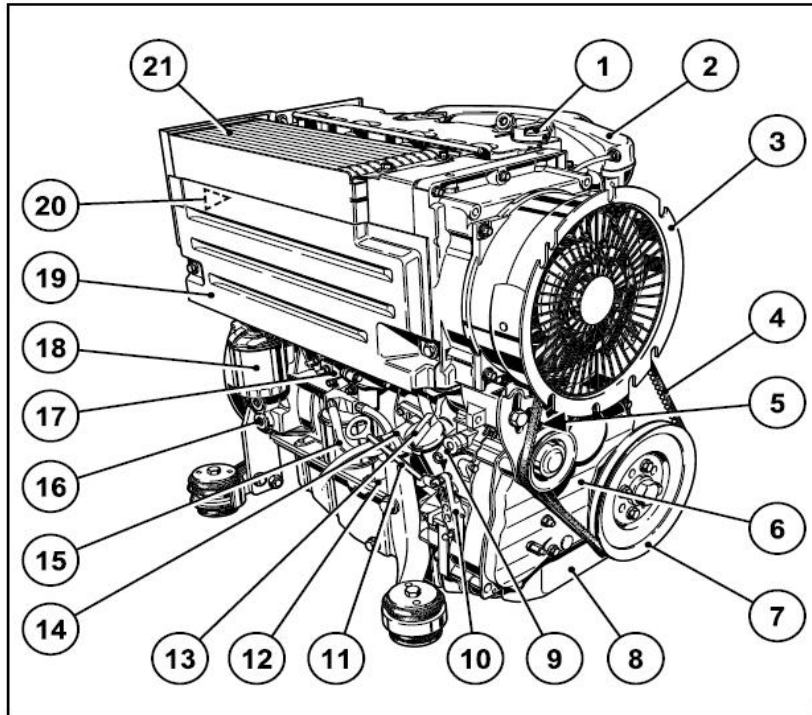
Type of cooling:	Integrated oil cooling
Crankcase:	Grey cast iron
Crankcase breather:	Closed-circuit breather
Cylinderhead:	Block typecast ironcylinder head
Valve arrangement/ Timing:	Overhead valves in cylinder head, one inlet and one exhaust valve per cylinder, actuated via tappets, push rods and rocker arms, driven by toothed belt and camshaft, automatic tensioner.
Piston:	Three ring piston, two compressions rings and one oil scraper ring
Piston cooling:	Oil cooled with spray nozzles
Connecting rod:	Drop forged steel rod
Crankshaft and big end bearings:	Ready to install plain bearings
Crankshaft:	Modular cast iron
Camshaft:	Steel shaft in bi metal bearings
Lubrication system:	Forged-feed circulation lubrication with rotary pump which feeds both lubrication and cooling systems (and cab heating if fitted)
Lube oil cooler:	Integrated, of light metal
Lube oil filter:	Paper-type micro-filter as replaceable cartridge full flow filter
injection pump/ Governor:	Single injection pumps with mechanical centrifugal governor
Fuel lift pump:	Serviceable, with integrated strainer
injection nozzle:	Five hole nozzle
Fuel filter:	Replaceable cartridge
Alternator:	Three-phase alternator, 14 V; 60 A (Standard)
Starter motor:	2,3 kW; 12 V
Heating system:	Optional connection for cab heating
Options:	Intake manifold connections, exhaust manifolds connections, hydraulic pumps, engine mounts rigid and flexible, oil pans, dipsticks, SAE 3/4/5/6 flywheel housings, alternators 12 and 24 V, oil filter positions horizontal and vertical, oil filler neck on side of crankcase or cylinder head cover

## Engine Description

## Engine Illustration

Operation Side

BF4L 2011



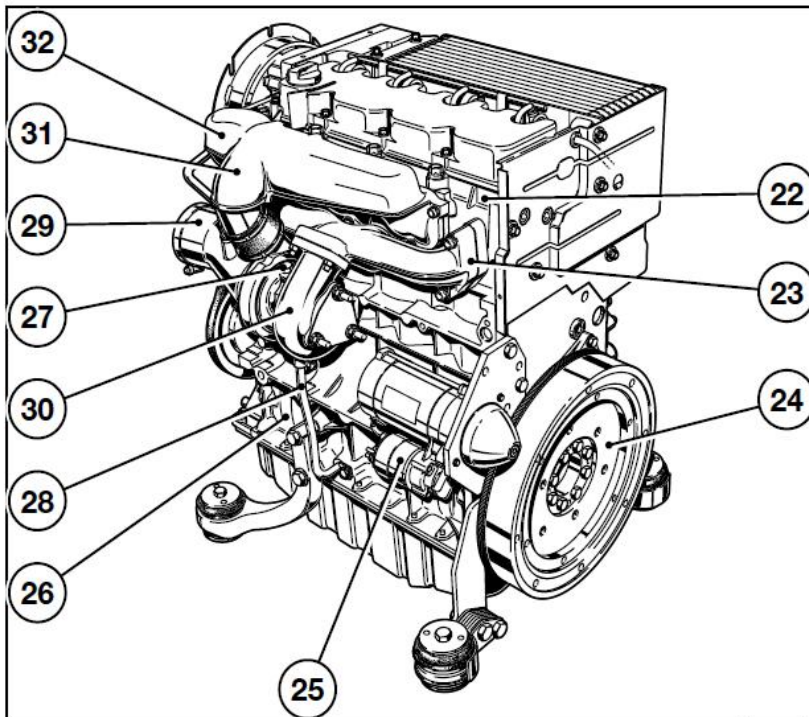
- 1 Oil filler neck (valve-gear housing cover)
- 2 Charge-air line / air-intake line
- 3 Fan with integrated generator
- 4 Narrow V-belt
- 5 Tractive electromagnet
- 6 Wheel-house cover
- 7 V-belt pulley on crankshaft
- 8 Oil pan
- 9 Shut-off lever
- 10 Speed control lever
- 11 Oil dipstick
- 12 Crankcase
- 13 Oil fill point (on side of crankcase)
- 14 Fuel pump
- 15 Easy-change fuel filter
- 16 Connecting facility for oil heater
- 17 Charge-pressure-dependent full-load stop (CPD)
- 18 Lube oil replacement filter
- 19 Removable coolant intake hood
- 20 Injection pumps
- 21 Oil cooler

## Engine Illustration

## Engine Description

Exhaust Side

BF4L 2011



- 22 Cylinder head
- 23 Exhaust manifold line
- 24 Flywheel with ring gear
- 25 Starter
- 26 Crankcase
- 27 Lube oil feed line to turbocharger
- 28 Lube oil return line from turbocharger
- 29 Induction pipe
- 30 Turbocharger (TC)
- 31 Intake manifold
- 32 Charge-air line



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