

## Greenpower DEUTZ diesel engine

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<b>1500 RPM</b>	<b>Type GP 30DZa</b>
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The engine with integrated air cooling system.

**Engine:** F4L2011  
**Alternator:** ECO28-LV/4

These are the characteristics of the **F4L2011 Gen:**

- 4-cylinder naturally aspirated in-line engines.
- Integrated cooling system (engine is supplied complete with heat exchanger).
- Cooling and lubrication with oil.
- Up to 14% more power output in comparison to the successor 1011F.
- 100% extended belt change interval.
- PTO for hydraulic pump drive is increased by 55% up to 28 kW/2800 rpm.
- All service points on one engine side.
- Compact engine design.

Your benefits:

- ▶ Designed specifically for construction equipment the dimensions of the engines are extremely compact. Thus reducing installation costs.
- ▶ The new engines, which display an exceptional power/weight ratio, perform brilliantly while at the same time complying with the stricter regulations on environmental protection.
- ▶ Cooling and lubrication with oil avoid corrosion and cavitation. High reliability combined with long maintenance intervals and less wear parts.
- ▶ Low noise emission, no expensive insulation measures for noise reduction.

## ► Rating table: 2011. The Genset Engine. 50 Hz

Engine type		F 4L 2011
Speed	min <sup>-1</sup>   rpm	1500
Frequency	Hz	50
<b>Engine/ genset ratings<sup>1)</sup></b>		
Continuous power, ICN (COP) <sup>2)</sup>	kW   hp	26,2   35.6
Prime power, ICN (PRP) <sup>3)</sup>	kW   hp	27,6   37.5
Limited-time running power, IFN (LTP) <sup>4)</sup>	kW   hp	29,0   39.4
<b>Typical generator power output</b>		
Typical generator power output (COP) <sup>5)</sup>	kVA	28,5
Typical generator power output (PRP) <sup>5)</sup>	kVA	30,0
Typical generator power output (LTP) <sup>5)</sup>	kVA	31,5
<b>Spec. fuel consumption PRP (LTP)<sup>6)</sup></b>		
100 % load	g/kWh   lb/hp-hr	215   0.348
75 % load	g/kWh   lb/hp-hr	220   0.356
50 % load	g/kWh   lb/hp-hr	235   0.381
25 % load	g/kWh   lb/hp-hr	350   0.567

### 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).

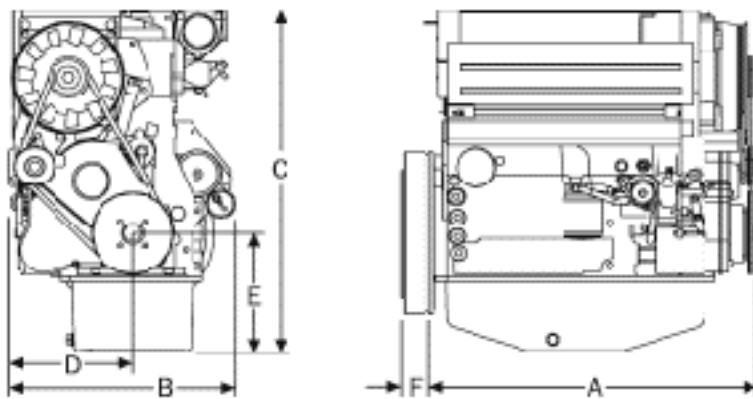
## ► Technical Data

<b>Engine type</b>		<b>F4L2011</b>
Numer of cylinder		4
Bore/stroke	mm	94/112
Displacement	l	3.11
Compression ratio		18.5
Max. rated speed	rpm	2800
Mean piston speed	m/s	10.45

### Power ratings for construction equipment engines <sup>1)</sup>

Power ratings for automotive- and industrial engines <sup>2)</sup>		
	kW	47.8
at speed	rpm	2800
Mean effective pressure	bar	6.59
Power ratings for cont. operation <sup>3)</sup>		
	kW	45.4
at speed	rpm	2800
Mean effective pressure	bar	6.26
Max. torque	Nm	190
at speed	rpm	1700
Minimum idle speed	rpm	900
Specific fuel consumption <sup>4)</sup>	g/kWh	214
Weight to DIN 70020, Part 7A <sup>5)</sup>	kg	254

## ► Dimensions

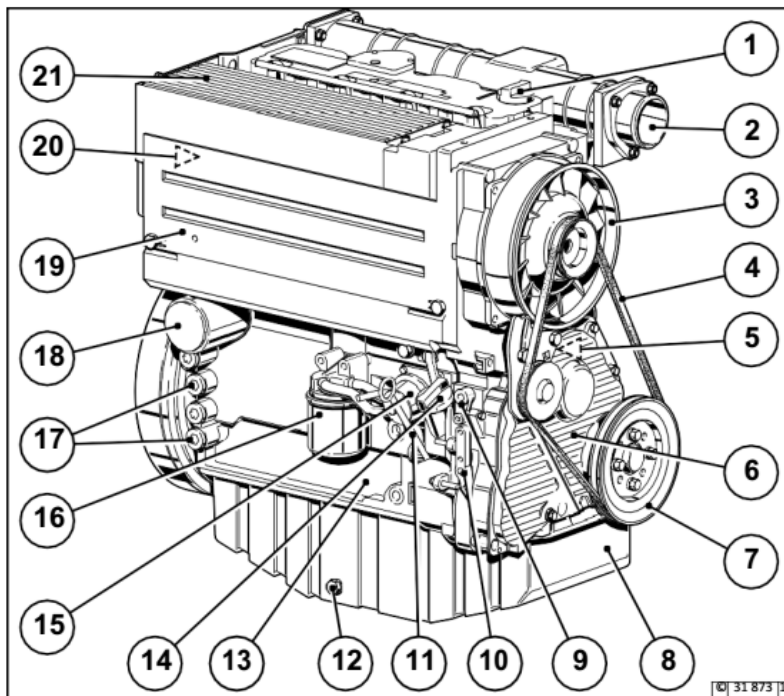


Engine type		A	B	C	D	E	F
F4L2011	mm	630	451	703	243	245	80

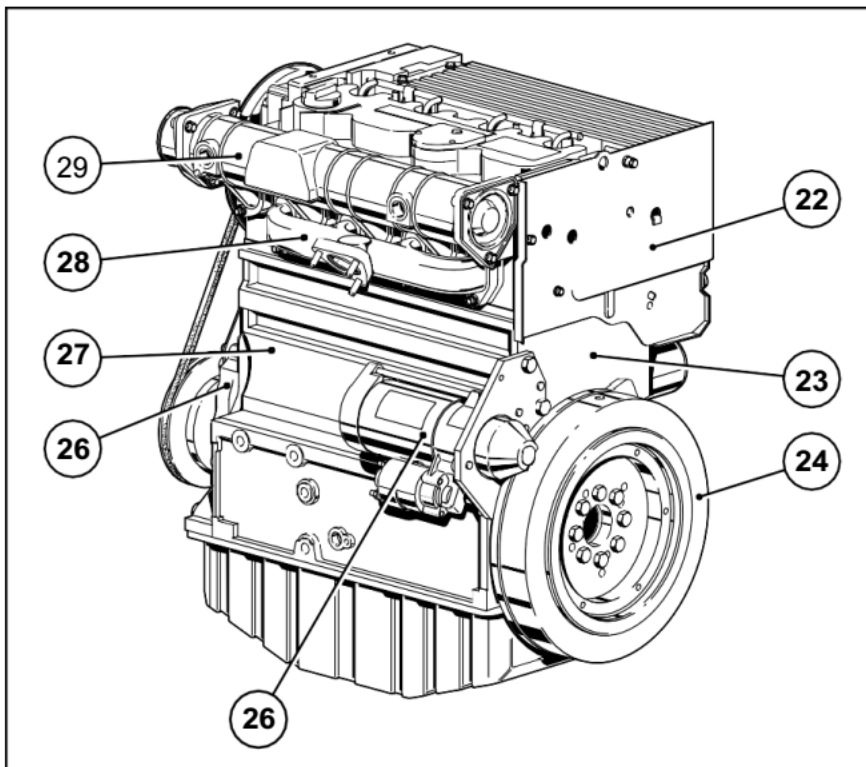
## ► Engine Description

<b>Type of cooling:</b>	..... Integrated oil cooling
<b>Crankcase:</b>	..... Grey cast iron
<b>Crankcase breather:</b>	..... Closed-circuit breather
<b>Cylinder head:</b>	..... Block-type cast iron cylinder head
<b>Valve arrangement/ Timing:</b>	..... 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
<b>Piston:</b>	..... Three-ring piston, two compressions rings and one oil scraper ring
<b>Piston cooling:</b>	..... Oil-cooled with spray nozzles
<b>Connecting rod:</b>	..... Drop-forged steel rod
<b>Crankshaft and big-end bearings:</b>	.. Ready-to-install plain bearings
<b>Crankshaft:</b>	..... Modular cast iron
<b>Camshaft:</b>	..... Steel shaft in bi-metal bearings
<b>Lubrication system:</b>	..... Forged-feed circulation lubrication with rotary pump which feeds both lubrication and cooling systems (and cab heating if fitted)
<b>Lube oil cooler:</b>	..... Integrated, of light metal
<b>Lube oil filter:</b>	..... Paper-type micro-filter as replaceable cartridge full flow filter
<b>Injection pump/ Governor:</b>	..... Single injection pumps with mechanical centrifugal governor
<b>Fuel lift pump:</b>	..... Serviceable, with integrated strainer
<b>Injection nozzle:</b>	..... Five-hole nozzle
<b>Fuel filter:</b>	..... Replaceable cartridge
<b>Alternator:</b>	..... Three-phase alternator, 14 V; 60 A (Standard)
<b>Starter motor:</b>	..... 2.3 kW; 12 V
<b>Heating system:</b>	..... Optional connection for cab heating
<b>Options:</b>	..... 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 Illustration



- 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 Oil drain plug
- 13 Crankcase
- 14 Oil fill point (on side of crankcase)
- 15 Fuel pump
- 16 Easy-change fuel filter
- 17 Connecting facility for oil heater
- 18 Lube oil replacement filter
- 19 Removable coolant intake hood
- 20 Injection pumps
- 21 Oil cooler



- 22 Date plate
- 23 Optional attachment of an SAE housing
- 24 Flywheel with ring gear
- 25 Starter
- 26 Front cover
- 27 Crankcase
- 28 Exhaust manifold
- 29 Air intake pipe