

910. The engine for construction equipment.

13-36 kW at 1500-3000 rpm



These are the characteristics of the 910:

Air-cooled 2 and 3-cylinder naturally aspirated in-line engines.

Advanced injection and combustion system in conformity with exhaust emission standard Level II (EU-RL 97/68).

PTO via crankshaft and gear-driven PTO.

Extremely compact design.

High torque at low speeds.

Modular system with single cylinder arrangement and high degree of parts commonality.

Unitised crankcase made of grey cast iron.

Easy access for service jobs.



Your benefits:

- ▶ High torque at low speeds and 90% of maximum torque across a wide speed range give you great elasticity in the use of your equipment.
- ▶ Extremely long service life thanks to heavy-duty designs. It is even possible to replace a piston/cylinder unit in the equipment, should this become necessary.
- ▶ Low exhaust emission values ensure environmentally friendly operation. A special version of the engines is available on request to meet strict US exhaust emission regulations (EPA, Tier II).
- ▶ High degree of reliability and long service life even in extreme operating conditions.
- ▶ Small installation space required compared with comparable water-cooled engines thanks to integrated cooling.
- ▶ Minimal development effort necessary as cooling does not have to be purchased nor adapted to suit your equipment.
- ▶ Excellent rugged design places minimum demands on your operating personnel.

► Engine description

Cooling system:	Air-cooled with integrated axial-flow blower.
Crankcase:	United casing in grey cast, acoustically optimised through internal design.
Cylinder head:	Light alloy cylinder head.
Cylinder:	Wear-resistant grey cast single cylinder, with generously dimensioned cooling fins, ensures efficient cooling of cylinder and piston.
Valve arrangement/ timing:	Overhead valves in the cylinder head, one inlet and one exhaust valve per cylinder, actuated from gear-driven camshaft via tappets, push rods and rocker arms.
Piston:	Three-ring piston: two compression rings and one oil scraper ring.
Piston cooling:	Oil spray via nozzles.
Connecting rod:	Drop-forged steel rod, diagonally split, for easy replacement of cylinders/piston unit.
Main and big end bearings:	Ready-to-install tri-metal bearings.
Crankshaft:	Drop-forged steel, induction-hardened.
Camshaft:	Forged steel, induction hardened. Enables manual starting and PTO at half-speed.
Lubrication system:	Forced-feed circulation lubrication with rotary pump. External pressure regulating valve for easy cleaning of valve, if necessary.
Lube oil filter:	Paper-type micro-filter as replaceable-cartridge full flow filter.
Fuel system:	Automatic breathing of the fuel injection system.
Injection pump/ governor:	Mountable pump in crankcase with mechanical centrifugal governor.
Injection nozzle:	Advanced 5-hole nozzle.
Fuel filter:	External, easy-access replaceable cartridge.
Air filter:	Oil-based air filter.
Starter motor:	12 V; 2.2 kW.
Alternator:	Three-phase alternator, 14 V; 33 A.
Flywheel housing:	SAE 4. SAE 4 – 7 1/2" flywheel-side connection available.
Options:	Electrical equipment in 24 V, flywheels for various applications, fine adjustment of speed, speed adjustment for automotive applications, intake manifold connections, exhaust manifold connections, V-belt guard, various engine monitoring systems (panel) in 12 V/24 V versions, 12 V and 24 V electromagnetic switch (release switch), industrial couplings and flange-mounted external bearings, flexible couplings, various V-belt options for PTO, hydraulic pumps with various capacities, irrigation pumps (centrifugal) in low, medium and high-pressure versions, fuel tank in 25/50/75 litres capacity versions, etc.

► Technical data

Engine type		D 910 L 2	D 910 L 3
Number of cylinders		2	3
Bore/Stroke	mm	100/105	100/105
Displacement	l	1.6	2.5
Compression ratio		17.5	17.5
Max. rated speed	rpm	3000	3000
Mean piston speed	m/s	10.5	10.5

Power ratings for construction equipment engines

Power ratings for automotive ¹⁾ and industrial engines			
	kW	23.5	36
at speed	rpm	3000	3000
Mean effective pressure	bar	5.69	5.82

Power ratings for industrial engines ²⁾ highly intermittent operations			
	kW	23.5	36
at speed	rpm	3000	3000
Mean effective pressure	bar	5.69	5.82

Intermittent operation	kW	22.3	34.2
at speed	rpm	3000	3000
Mean effective pressure	bar	5.4	5.53

Max torque	Nm	93.3	142.9
at speed	rpm	2000	2000

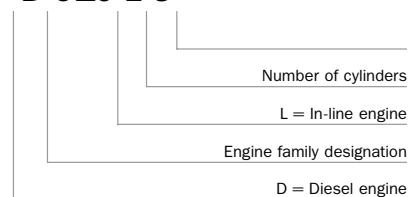
Minimum idle speed	rpm	650	650
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Specific fuel consumption ³⁾	g/kWh	236	233
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Weight to DIN 70020, part 7A ⁴⁾	kg	185	229
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► Model designation

D 910 L 3



1) Power ratings to ISO 1585 and European guidelines 80/1269/CEE and 88/195/CEE.

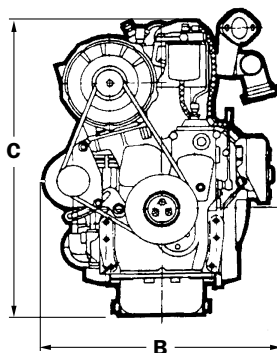
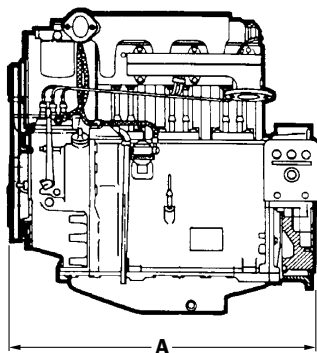
2) Power ratings to ISO 3046/1 for industrial engines.

3) Specific fuel consumption based on diesel fuel to DIN 51601 with a specific gravity of 0.835 kg/dm³ at 15 °C.

4) Without starter motor/alternator, without liquids, but with standard flywheel.

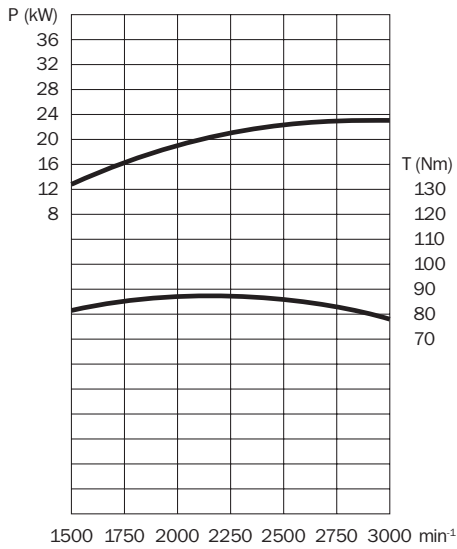
The values given in this datasheet are for information purposes only and are not binding. The information given in the offer is decisive.

► Dimensions

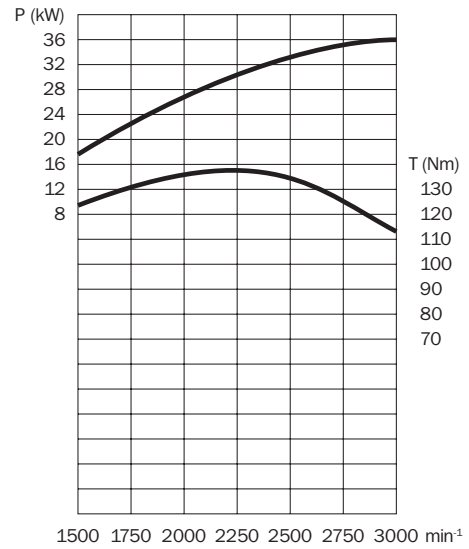


Engine		A	B	C
D 910 L 2	mm	545	502	687
D 910 L 3	mm	708	522	689

► Standard engines



► **D 910 L 2**



► **D 910 L 3**



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