SCANIA INDUSTRIAL ENGINE: EU STAGE V, KOREAN TIER 5

9-LITRE ENGINE

Engine description

DC09 313A. 257 kW

Engine speed	2,100 rpm
Emission compliance	EU Stage V, Korean Tier 5
Rating	ICFN
No of cylinders	5 in-line
Working principle	4-stroke
Displacement	9.3 litres
Weight	950 kg (excluding oil and coolant)
Oil capacity	31-36 litres (standard oil sump)
Electrical system	1-pole 24 V

Scania's industrial engines for emission level EU Stage V and Korean Tier 5 are based on a robust design for superior operating economy and reliability. With their modular design, the engines offer easy installation for the producer of the equipment as well as easy access to daily checks and service for the operator. The engines can be fitted with many accessories such as air cleaners, PTOs, exhaust fittings and flywheels, to suit a variety of installations.

Scania's engines for EU Stage V and Korean Tier 5 are equipped with a Scania developed extra high pressure fuel injection system based on common rail technology, and a turbocharger optimized for operation in combination with the exhaust gas aftertreatment system. Together with Scania's Engine Management System, the result is an engine that fulfils the strictest exhaust emission requirements, with low fuel consumption and a high torque.

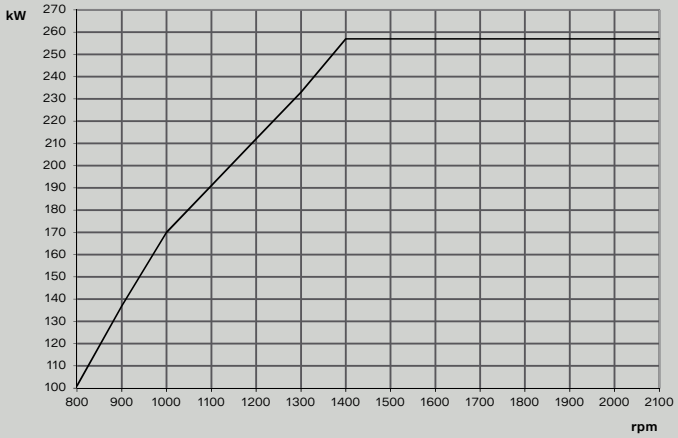
Standard equipment

- Scania Engine Management System, EMS
- Extra high pressure fuel injection system, XPI
- Variable Geometry Turbocharger
- Saver ring in cylinder liner
- Fuel filter and extra pre-filter with water separator
- Thermal recirculation fuel heater
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in cylinder block
- Oil filler, in cylinder block
- Deep front oil sump
- Oil dipstick, in cylinder block
- Magnetic drain plug for oil draining
- Starter motor, 1-pole 6.0 kW
- Alternator, 1-pole 100 A
- Flywheel, for use with friction clutch
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine brackets
- Particulate filter and SCR in 2-unit distributed aftertreatment system
- Open crankcase ventilation

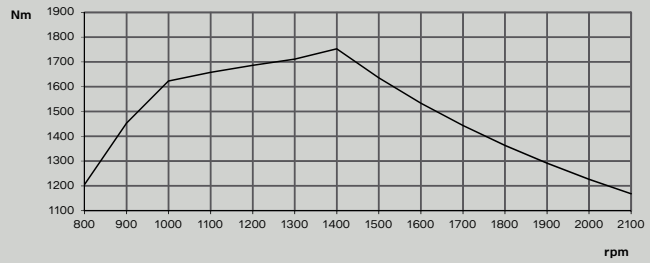
ICFN - Continuous service: Rated output available 1/1 h. Unlimited h/year service time at a load factor of 100%.

Power charts

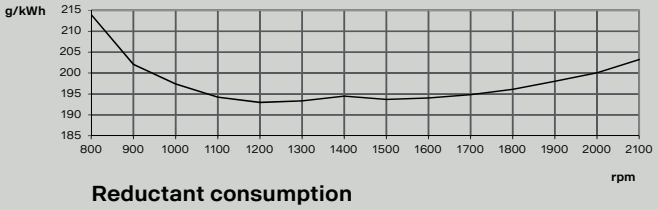
Power



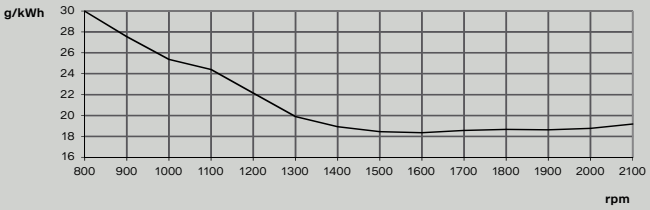
Torque



Fuel consumption



Reductant consumption

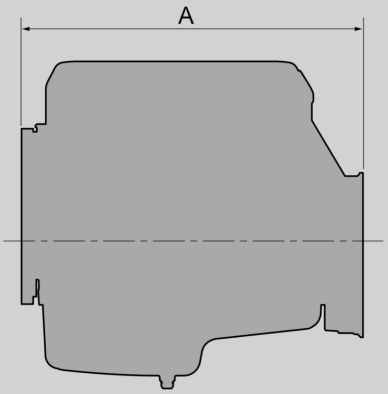


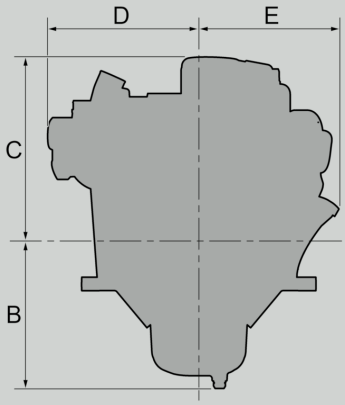
Test conditions. Air temperature 25°C. Barometric pressure 100 kPa (750 mmHg). Humidity 30%. Diesel fuel acc.to ECE R 24 Annex 6.
Density of fuel 0.84 kg/dm^3. Viscosity of fuel 3.0 cSt at 40°C. Energy value 42,700 kJ/kg. **Power test code** ISO 3046. Power and fuel values ±3%.

Dimensions

A Overall length	1,214
B Centre of crankshaft to bottom	448
C Centre of crankshaft to top	665
D Centre of crankshaft to right-hand side	510
E Centre of crankshaft to left-hand side	472

All dimensions indicated in mm





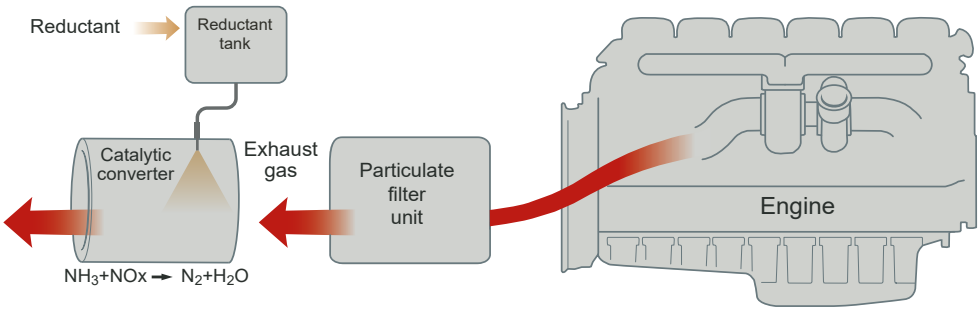
Technical data

	Engine speed (rpm)			
	1,200	**1,500**	**1,800**	**2,100**
Gross power (kW)	212	257	257	257
Gross power (hp, metric)	288	350	350	350
Gross torque (Nm)	1,687	1,636	1,363	1,169
Fuel consumption at full load (g/kWh)	193	194	196	203
Reductant consumption at full load (g/kWh)	22	18	19	19
Heat rejection to coolant (kW)	84	102	102	102

Edition 05

SCANIA INDUSTRIAL AND POWER GENERATION ENGINES

EXHAUST GAS AFTERTREATMENT SYSTEM



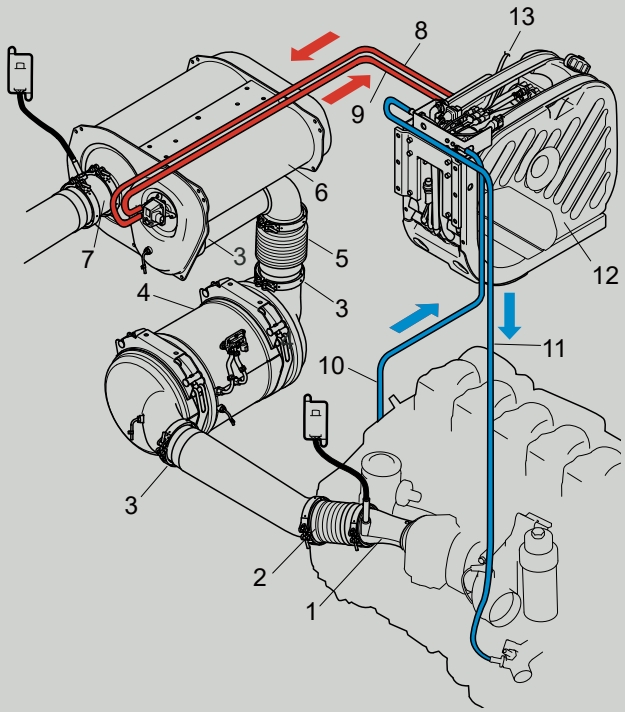
The emissions of particulate matter are filtered through a ceramic structure, that only allows particles smaller than a defined size to pass. When the filter is filled with soot particles to a specific amount, it is regenerated automatically.

SCR technology: A chemical process is started when reductant, a urea and water mixture, is injected into the exhaust gas stream. During injection, the water evaporates, and the urea breaks down to form ammonia. The ammonia then reacts with the nitrogen oxide gases in the catalytic converter and forms harmless products such as nitrogen gas and water.

SCR (Selective Catalytic Reduction) technology, in combination with a particulate filter and an oxidation catalytic converter (integrated in the particulate filter unit), is used on Scania's emission compliant engines to reduce the NOx and particle content in the exhaust gases in the best possible way.

Mechanical system

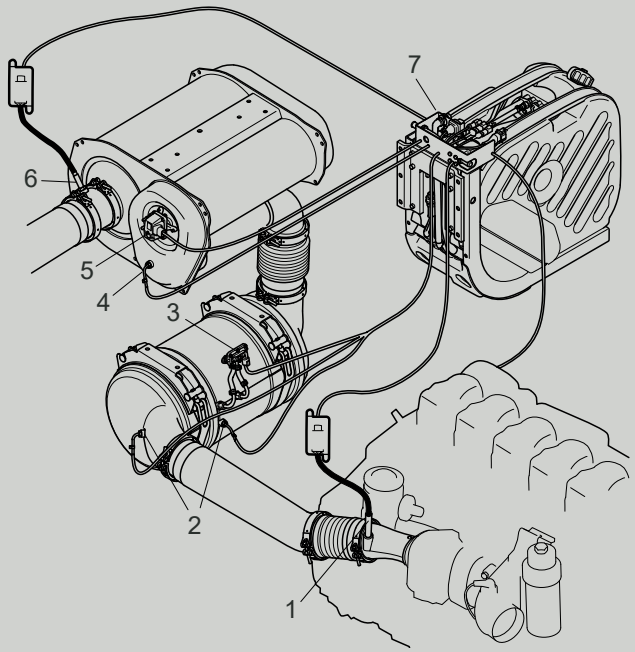
	Standard	Optional
1 Exhaust bend	20° bend	90° bend, exhaust brake
2 Exhaust bellows	-	√
3 Exhaust flanges	-	Ø114, 130, 155 mm
4 Particulate filter unit	with 90° outlet	with straight outlet
5 Exhaust bellows SCR	-	√
6 SCR unit	without outlet bend	with 90° outlet bend
7 NOx flange downstream	Ø127 mm, short, with V-clamp	Ø127 mm, long, weld union, without
8 Reductant pressure hose	2.5 m	4.0 m, 5.0 m, 6.5 m
9 Reductant return hose	2.5 m	4.0 m, 5.0 m, 6.5 m
10 Coolant hose for heating of tank and pump	-	-
11 Coolant return hose	-	-
12 Reductant tank	38 l	45 l, 60 l, 63 l, 70 l
13 Reductant tank bleed hose	0.8 m	3.3 m



Electrical system

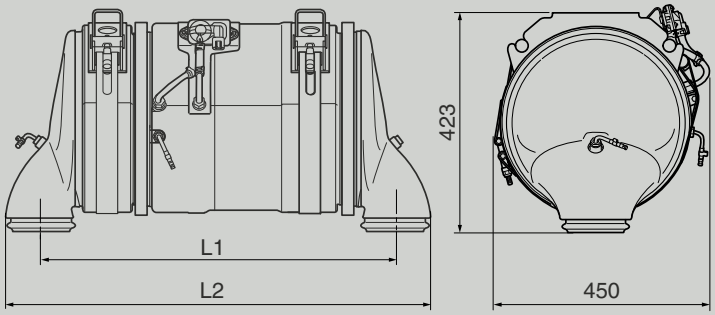
1 NOx sensor upstream with control unit
2 Exhaust gas temperature sensors
3 Differential pressure sensor
4 Exhaust gas temperature sensor
5 Reductant doser
6 NOx sensor downstream with control unit
7 Electrical interface to exhaust gas aftertreatment system

All components are standard equipment. Standard cable length 3.0 m, optional 4.5 m, 6 m (9 m).
Differential pressure sensor also available for remote mounting.



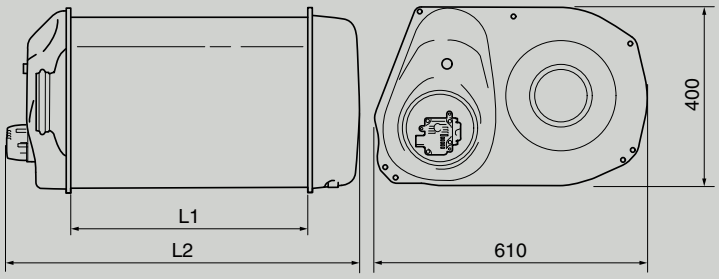
Particulate filter unit

Engine	L1	L2	Weight
DC09	603 mm	747 mm	27 kg
DC13	679 mm	823 mm	31 kg



SCR unit

Engine	L1	L2	Weight
DC09, DC13 <331 kW	518 mm	764 mm	65 kg
DC13 >331 kW	595 mm	841 mm	73 kg



Reductant tank, 38 litres

Available sizes (filling volume)	Total volume
38 litres	50 litres
45 litres	60 litres
60 litres	75 litres
63 litres	80 litres
70 litres	90 litres