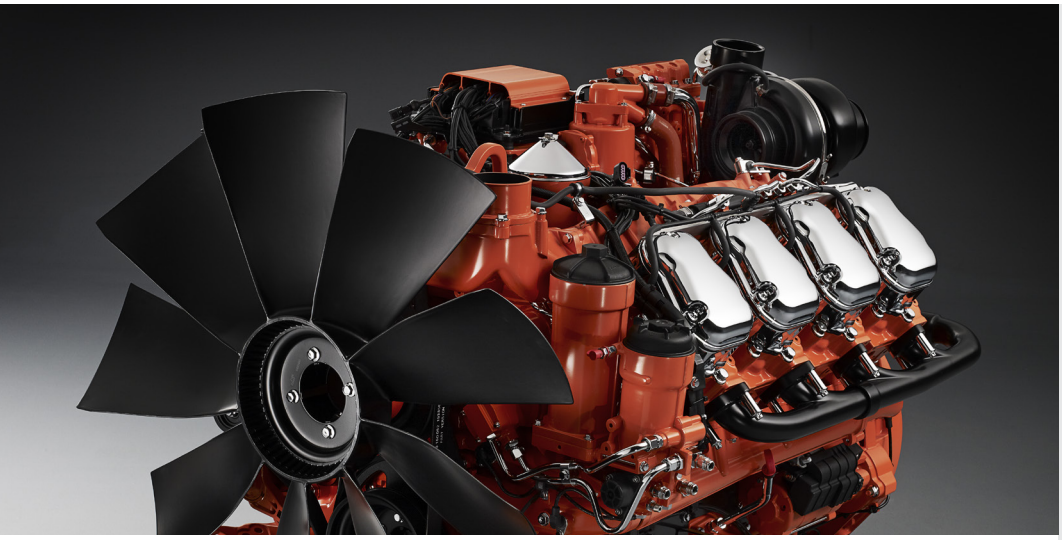
DC16 077A. 405 kW (550 hp)

EU Stage IIIB



The industrial engines from Scania are based on a robust design with a strength optimised cylinder block containing wet cylinder liners that can easily be exchanged. Individual cylinder heads with 4 valves per cylinder promotes repairability and fuel economy.

The engine is equipped with a Scania developed Engine Management System, EMS, in order to ensure the control of all aspects related to engine performance. The injection system is Scania's XPI (Extra High Pressure Injection), a common rail system that in combination with SCR (Selective Catalytic Reduction) gives low exhaust emissions with good fuel economy and a high torque. The engine can be fitted with many accessories such as air cleaners, silencers, PTOs and flywheels in order to suit a variety of installations.

	Rating	Engine speed (rpm)			
		1200	1500	1800	2100
Gross power (kW)	ICFN	345	405	405	405
Gross power (hp)	ICFN	469	550	550	550
Gross torque (Nm)	ICFN	2745	2578	2149	1842
Spec fuel consumption. Full load (g/kWh)		194	196	203	220
Spec fuel consumption. 3/4 load (g/kWh)		195	197	204	223
Spec fuel consumption. 1/2 load (g/kWh)		199	200	212	235
Reductant consumption. Full load (g/kWh)		19	15	14	13
Heat rejection to coolant (kW)		147	144	148	164

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

Standard equipment

- Scania Engine Management System, EMS
- Extra high pressure fuel injection system, XPI
- Turbocharger
- Fuel filter and extra pre-filter with water separator
- Fuel heater
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in block
- Oil filler, in valve cover
- Deep front oil sump
- Oil dipstick, in block
- Magnetic drain plug for oil draining
- Starter, 1-pole 7.0 kW
- Alternator, 1-pole 100A
- Flywheel, for use with friction clutch
- Silumin flywheel housing, SAE 1 flange
- Front mounted engine brackets
- SCR system
- Open crankcase ventilation
- Operator's manual

Optional equipment

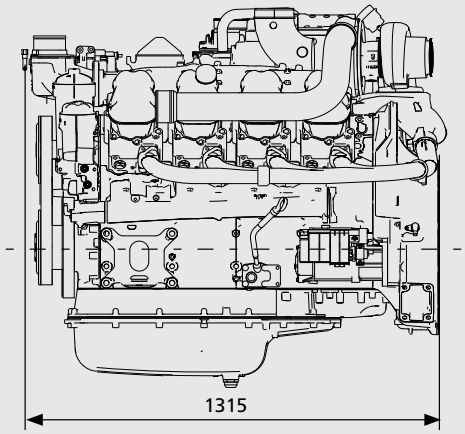
- Prepared for cooling package
- Puller and pusher fans
- Fan ring with sealing
- Hydraulic pump
- Air compressor
- AC compressor
- Side-mounted PTO
- Front-mounted PTO
- Exhaust connections
- Electrical base system
- Control and instrument panels
- Accelerator position sensor
- Engine heater
- Flywheel: SAE14"
- Stiff rubber engine suspension
- Air cleaner
- Closed crankcase ventilation
- Studs in flywheel housing
- External thermostat for extra oil cooler
- Low coolant level reaction
- Variable idle speed setting
- Low oil sump
- Oil level sensor

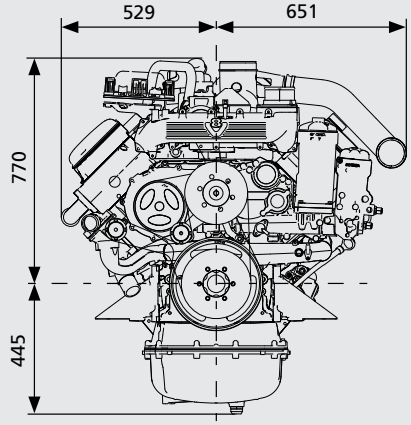
DC16 077A. 405 kW (550 hp)

EU Stage IIIB

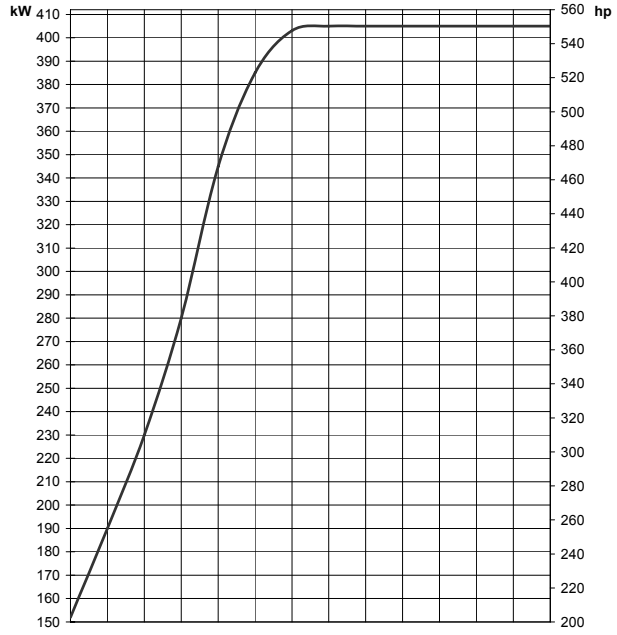
Engine description

No of cylinders	90° V8
Working principle	4-stroke
Firing order	1 - 5 - 4 - 2 - 6 - 3 - 7 - 8
Displacement	16.4 litres
Bore x stroke	130 x 154 mm
Compression ratio	16.7:1
Weight	1340 kg (excl oil and coolant)
Piston speed at 1500 rpm	7.7 m/s
Piston speed at 1800 rpm	9.24 m/s
Camshaft	High position alloy steel
Pistons	Steel pistons
Connection rods	I-section press forgings of alloy steel
Crankshaft	Alloy steel with hardened and polished bearing surfaces
Oil capacity	35-45 dm^3
Electrical system	1-pole 24V



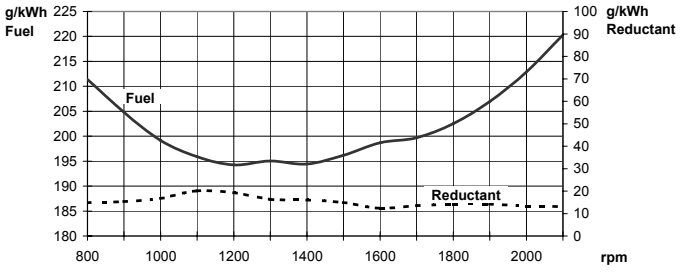


Output



Torque

Spec fuel and AdBlue 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 0.840 kg/dm^3. Viscosity of fuel 3.0 cSt at 40°C. Energy value 42700 kJ/kg.

Power test code ISO 3046. Power and fuel values +/-3%.

SCANIA

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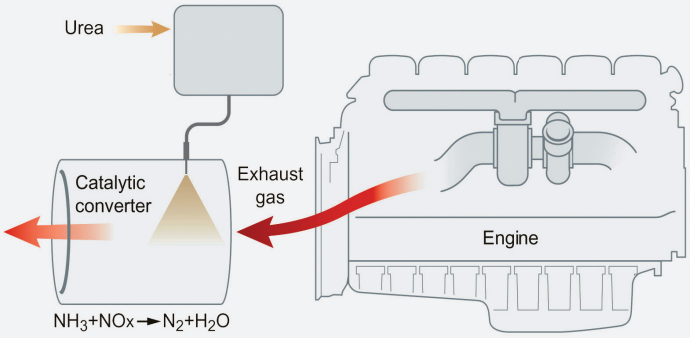
SCR system

EU Stage IIIB

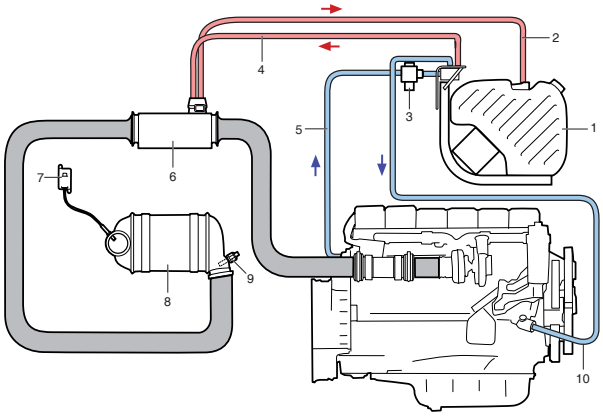


The principle for Scania SCR system

SCR (Selective Catalytic Reduction) technology is used on Scania's engines for Stage IIIB and Tier 4i to reduce the NO_x content in the exhaust gases. A chemical process is started by injecting reductant, a urea and water mixture, 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 gases in the catalytic converter and forms harmless products such as nitrogen gas and water. Through the use of SCR the exhaust gases are purged of poisonous levels of NO_x in the best possible way. Scania is making use of a system that is carefully developed and tested in our own laboratory.

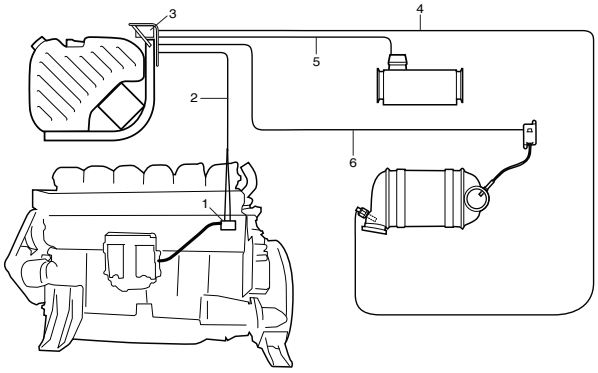
The reductant tank holds 38 or 60 litres and is heated by the engine's cooling system in order to avoid freezing of the urea solution, urea freezes at -11°C. The reductant tank and a pump module are delivered as a unit which is fitted to brackets for an easy installation. The Scania system contains all mechanical and electrical parts needed except from the exhaust piping which is to be adapted according to the customers installation.

Mechanical system



	Mechanical system	Standard	Optional
1	Reductant tank and pump module	38 l	60 l
2	Reductant fluid return line	2 m	3.5 m
3	Coolant valve	✓	–
4	Reductant pressure line	2 m	3.5 m
5	Coolant hose for tank and pump heating	–	–
6	Evaporator module / Hydrolysis catalyst with reductant doser	✓	–
7	NO_x sensor with control unit	✓	–
8	SCR catalyst	✓	–
9	Temperature sensor	✓	–
10	Coolant hose, return from tank and pump heating	–	–

Electric system



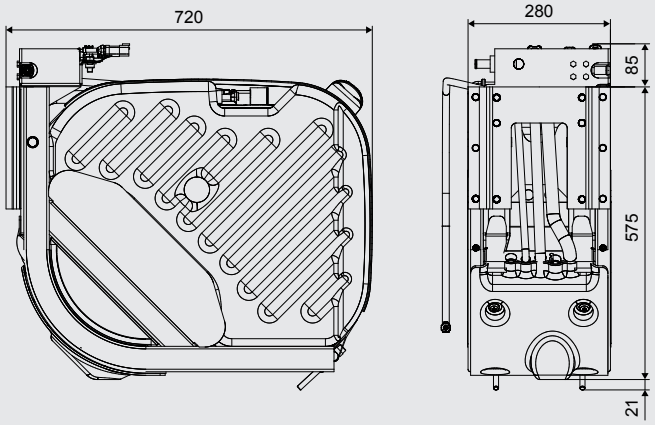
	Electric system	Standard	Optional
1	Customer interface, SCR system	✓	–
2	Pipe network between engine and SCR control unit	3 m	6 m
3	Electrical interface, SCR system	✓	–
4	Temperature sensor electrical cable	3 m	6 m, 9 m
5	Reductant doser electrical cable	3 m	6 m
6	NO_x sensor electrical cable	3 m	6 m

This specification may be revised without notice.

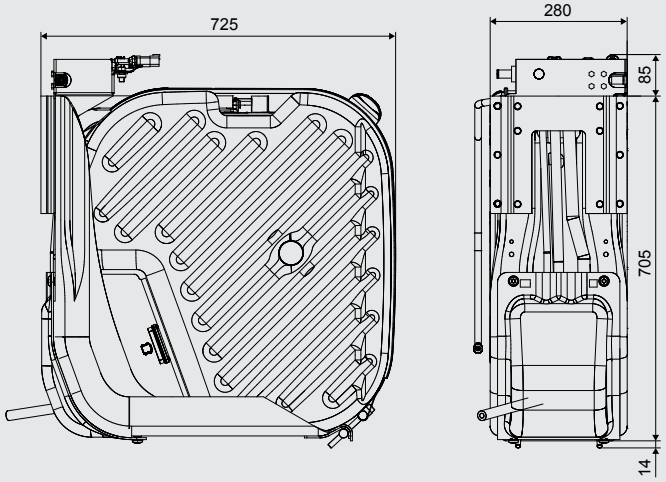
SCR system

EU Stage IIIB

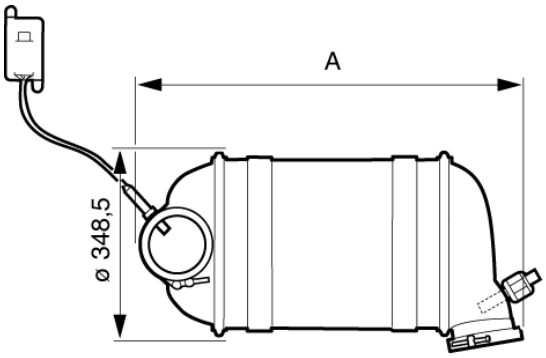
Reductant tank - 38 litres
Total volume: 50 litres
Filling volume: 38 litres



Reductant tank - 60 litres
Total volume: 75 litres
Filling volume: 60 litres

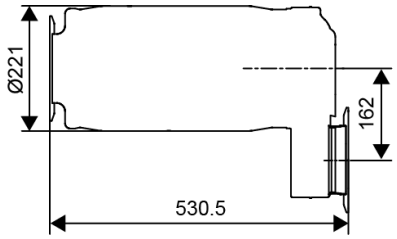


SCR catalyst

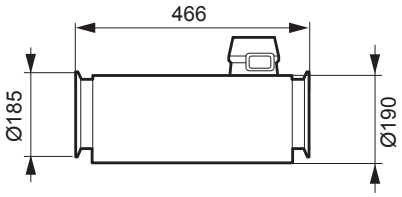


Engine	Power (kw)	Volume (litres)	Measure A (mm)
DC09	202-294	24	765
DC13	257-405	33	857
DC16	405-515	48	1060

Evaporator module (DC09, DC13)
with reductant doser



Hydrolysis catalyst (DC16)
with reductant doser



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