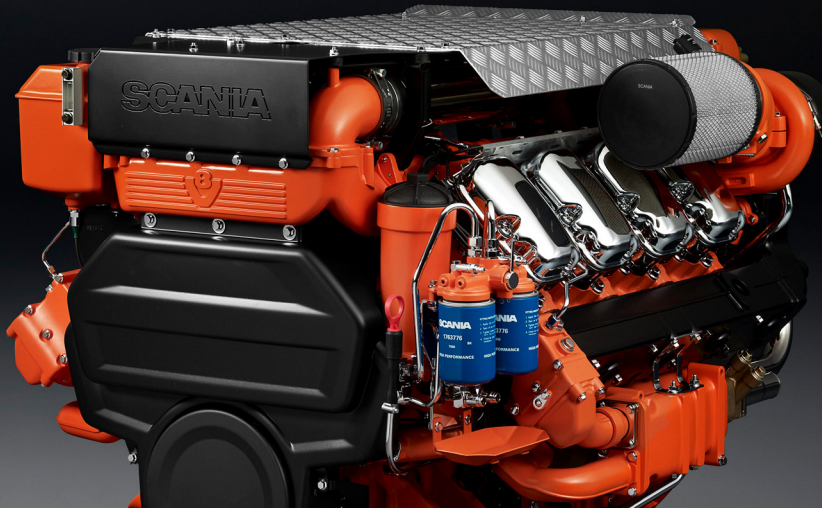


DI16 091M. 450-511 kW

IMO Tier III, IMO Tier II



The marine engines from Scania are based on a robust design with a strength optimized 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, to ensure the control of all aspects related to engine performance. The injection system is based on electronically controlled unit injectors that in combination with SCR (Selective Catalytic Reduction) gives low exhaust emissions with good fuel economy and a high torque already at low revs.

The engine can be fitted with many accessories such as air cleaners, PTOs, instrumentation and cast iron flywheel housing with dual positions for starter to suit a variety of installations.

	Engine speed (rpm)	
	1500	1800
Gross power, full load (kW)	450	511
Gross torque (Nm)	2865	2711
Fuel consumption at full load (g/kWh)	202	206
Fuel consumption at 3/4 load (g/kWh)	199	204
Fuel consumption at 1/2 load (g/kWh)	202	209
Reductant consumption at full load (g/kWh)	16	17
Heat rejection to coolant* (kW)	335	386

*Including charge air

Rating: PRP - Prime power

For continuous operation and unlimited yearly operating time at varying load. Max. mean load factor of 70% of rated power over 24 h of operation. 1 hour/12 hour period above 100% load. Max. 25 h accumulated service time above 100% load per year.

Standard equipment

- Scania Engine Management System, EMS
- Unit injectors, PDE
- Twin turbochargers, heat insulated
- Fuel pre-filter with water separator
- Fuel filter
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in cylinder block
- Oil filler, in valve cover
- Deep front oil sump
- Oil dipstick, front
- Starter motor, 2-pole 7.0 kW
- Alternator, 2-pole 100 A
- Flywheel SAE 14
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine suspension
- SCR system
- Catwalk and cover for belt transmission
- Closed crankcase ventilation

Engines with heat exchanger:

- Sea water charge air cooler
- Impeller sea water pump
- Dual heat exchangers with expansion tanks

Optional equipment

- Scania Instrumentation 2.1
- Hydraulic pump
- Side-mounted PTO
- Front-mounted PTO
- Exhaust connections
- Engine heater
- Engine suspension with different heights
- Stiff rubber suspension
- Air cleaner
- Cast iron flywheel housing, SAE 1 flange
- Reversible fuel filter
- Variable idle speed setting
- Low oil sump
- Reversible oil filters
- Oil draining with pump
- Coolant level monitor
- Oil level sensor
- Reductant feed pump
- Bilge pump

This specification may be revised without notice.

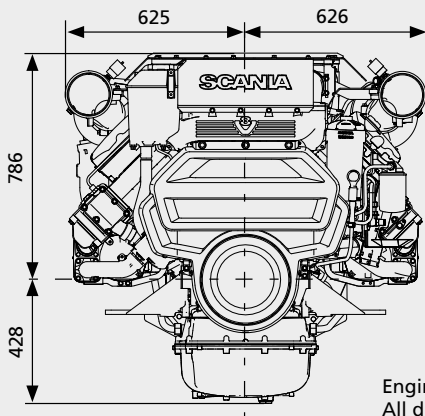
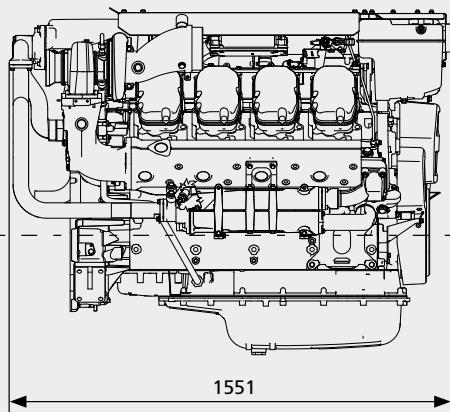


DI16 091M. 450-511 kW

IMO Tier III, IMO Tier II

Engine description

No of cylinders	V 8
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 - engine with heat exchanger 17.4:1 - engine with keel cooling
Weight (excl oil and coolant)	1670 kg - engine with heat exchanger 1600 kg - engine with keel cooling
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	40-48 dm ³ (standard oil sump)
Electrical system	2-pole 24 V DC



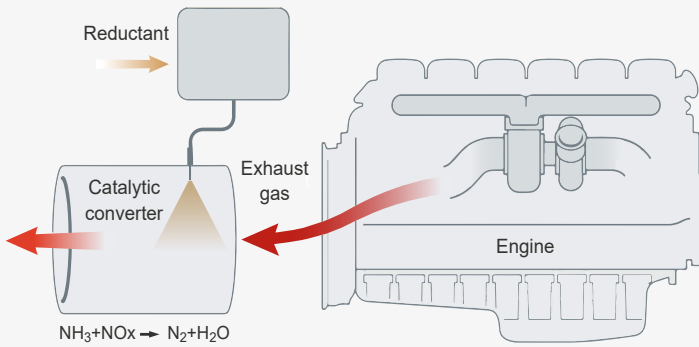
Engine with heat exchanger
All dimensions in mm



SCANIA

SE 151 87 Södertälje, Sweden
Telephone +46 8 553 810 00
www.scania.com
powersolutions@scania.com

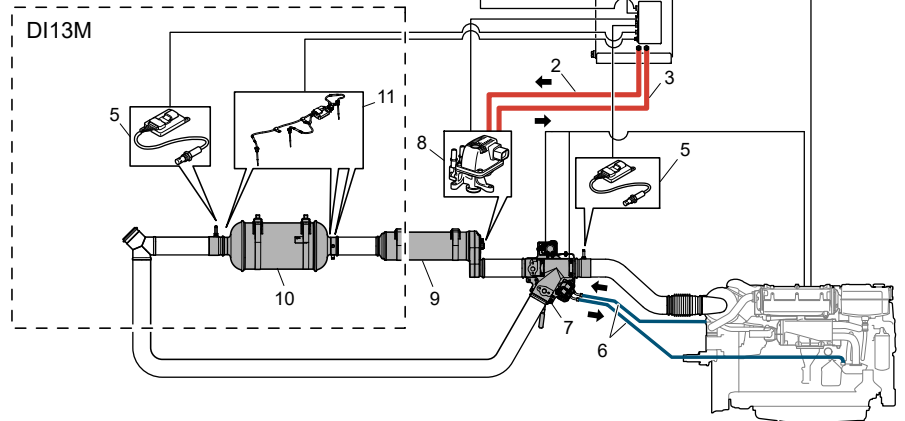
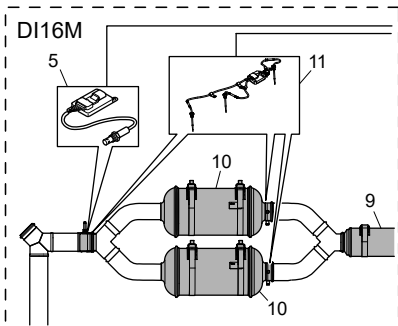
SCR system



The principle for Scania's SCR system

SCR (Selective Catalytic Reduction) technology is used on Scania's engines for IMO Tier III to reduce the NO_x content in the exhaust gases. A chemical process is started when reductant, a urea and water mixture, is injected into the exhaust gas stream. During the injection, the water evaporates, and the urea breaks down to form ammonia. The ammonia then reacts with the nitrogen gases in the SCR 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 makes use of a system that is carefully developed and tested in our own laboratory.

The Scania SCR system includes an exhaust routing valve, which enables bypassing of the SCR system to meet classification requirements for marine installations. The system is delivered with a reductant tank made of stainless steel, prepared for connection to a main tank, provided by the customer. To ensure the flow of reductant between the main tank and the reductant tank, a reductant feed pump controlled by Scania can be provided. The system can be offered with all the necessary mechanical and electrical parts, except for exhaust piping, which should be adapted to the customer's installation.



	Standard	Optional
1 Reductant feed pump	-	✓
2 Reductant pressure pipe	-	-
3 Reductant return pipe	-	-
4 Reductant tank	✓	-
5 NO _x sensors	✓	-
6 Coolant pipes	-	-

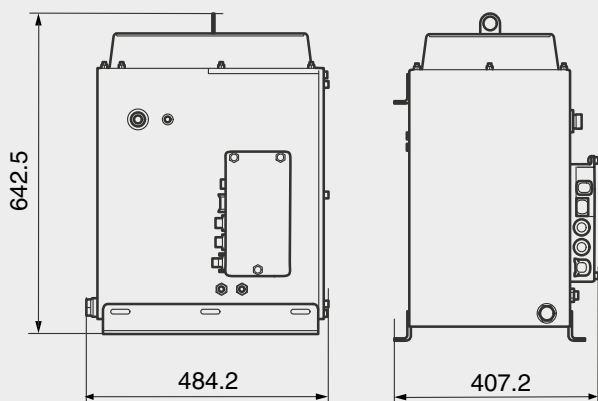
	Standard	Optional
7 Exhaust routing valve	✓	-
8 Reductant doser	✓	-
9 Evaporator	✓	-
10 SCR catalytic converter	✓	-
11 Exhaust gas temperature sensors	✓	-



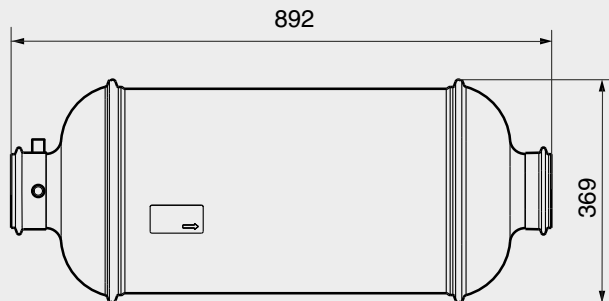
SCR system

Reductant tank

Total volume: 30 litres
Filling volume: 16 litres



SCR catalytic converter



Evaporator

