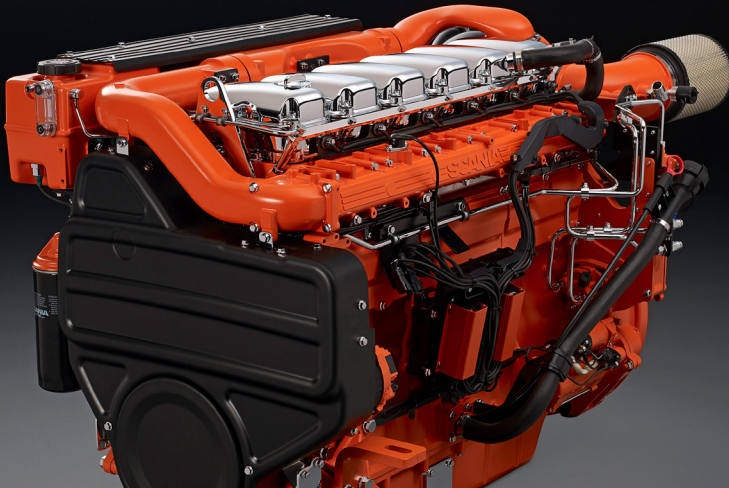


# DI13 091M. 269-285 kW

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 reparability 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, which 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 (kW)	269	285
Gross torque (Nm)	1713	1512
Fuel consumption at full load (g/kWh)	192	194
Fuel consumption at 3/4 load (g/kWh)	194	198
Fuel consumption at 1/2 load (g/kWh)	201	211
Reductant consumption at full load (g/kWh)	22	24
Heat rejection to coolant* (kW)	177	190

\*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
- Turbocharger
- Fuel pre-filter with water separator
- Fuel filter
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in cylinder block
- Oil filler, in cylinder block
- Oil dipstick, in cylinder block
- 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
- Protection covers
- Closed crankcase ventilation

*Engines with heat exchanger:*

- Impeller sea water pump
- Heat exchanger with expansion tank

**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 and extra low oil sump
- Reversible oil filters
- Long oil dipstick
- Oil level sensor
- Coolant level monitor
- Reductant feed pump
- Bilge pump

*Engines with heat exchanger:*

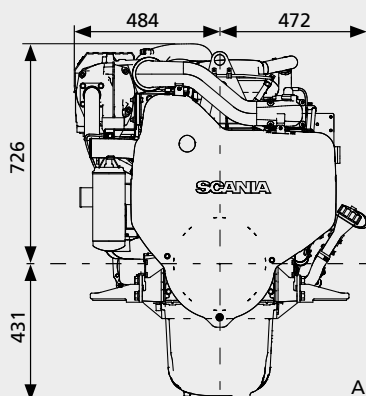
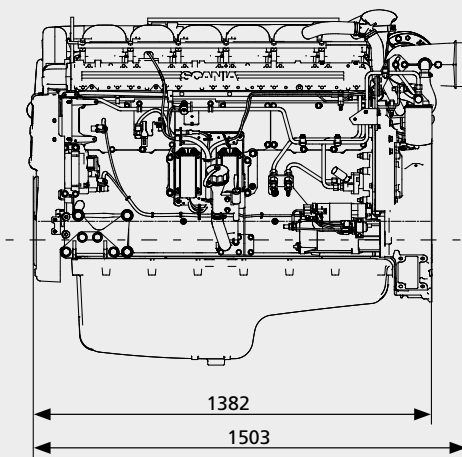
- Self-priming sea water pump

# DI13 091M. 269-285 kW

IMO Tier III, IMO Tier II

## Engine description

No of cylinders	6 in-line
Working principle	4-stroke
Firing order	1 - 5 - 3 - 6 - 2 - 4
Displacement	12.7 litres
Bore x stroke	130 x 160 mm
Compression ratio	17.3:1
Weight (excl oil and coolant)	1285 kg (Engine with heat exchanger) 1180 kg (Engine with keel cooling)
Piston speed at 1500 rpm	8.0 m/s
Piston speed at 1800 rpm	9.6 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	30-36 dm <sup>3</sup> (standard oil sump)
Electrical system	2-pole 24 V DC



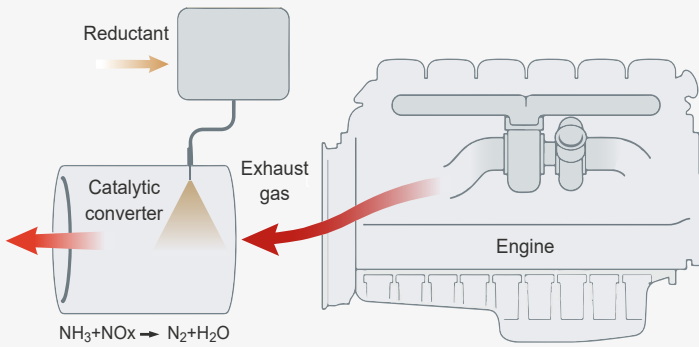
All dimensions in mm



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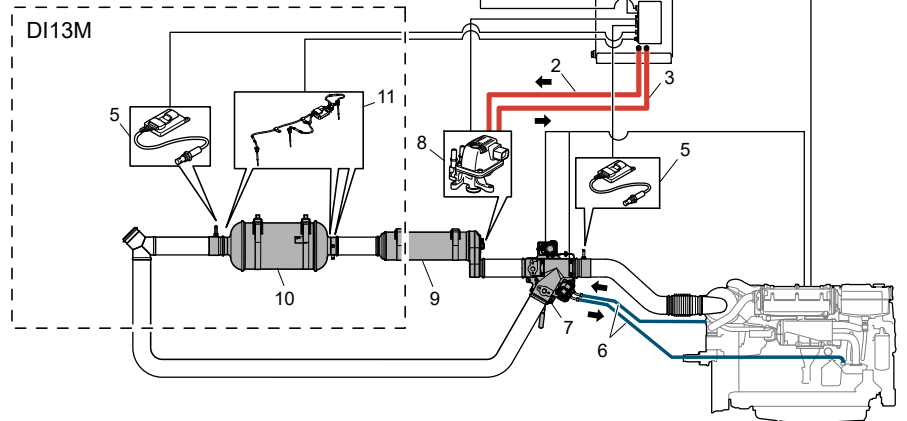
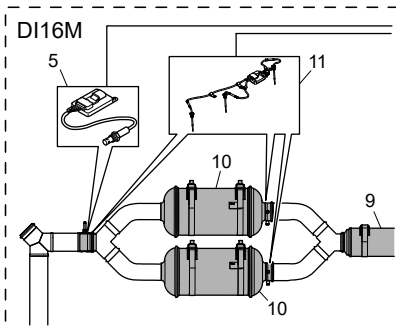
# SCR system



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<sub>x</sub> 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<sub>x</sub> 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 <sub>x</sub> sensors	✓	-
6 Coolant pipes	-	-

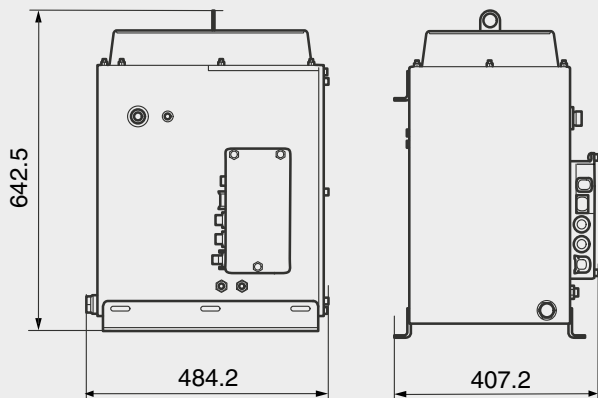
	Standard	Optional
7 Exhaust routing valve	✓	-
8 Reductant doser	✓	-
9 Evaporator	✓	-
10 SCR catalytic converter	✓	-
11 Exhaust gas temperature sensors	✓	-



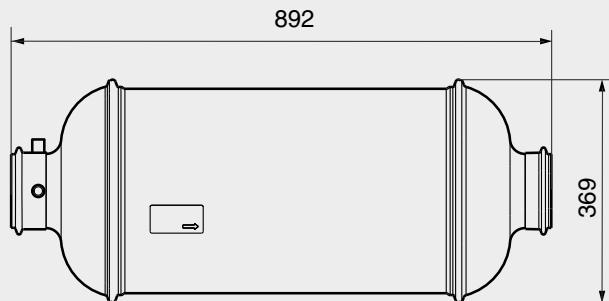
## SCR system

### Reductant tank

Total volume: 30 litres  
Filling volume: 16 litres



### SCR catalytic converter



### Evaporator

