



DI16 091M. 430-468 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 and cast iron flywheel housing with dual positions for starter in order to suit a variety of installations.

	Engine speed (rpm)	
	1500	1800
Gross power, full load (kW)	430	468
Gross torque (Nm)	2739	2483
Spec fuel consumption. Full load (g/kWh)	201	204
Spec fuel consumption. 3/4 load (g/kWh)	199	204
Spec fuel consumption. 1/2 load (g/kWh)	203	211
Optimum fuel consumption (g/kWh)	199	
Reductant consumption. Full load (g/kWh)	16	19
Heat rejection to coolant* (kW)	320	354

*Including charge air

Rating: PRP - Prime power: For continuous operation and unlimited yearly operation at varying load. Max. mean load factor of 70% of rated power over 24 h of operation.
1 hour/12 hours period of accumulated peak overload to 110%.

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, 2-pole, 7.0 kW
- Alternator, 2-pole, 100 A
- Flywheel SAE 14
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine brackets
- 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

- Hydraulic pump
- Side-mounted PTO
- Front-mounted PTO
- Exhaust connections
- Engine heater
- Engine brackets 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 sensor
- Oil level sensor
- Reductant feed pump
- Bilge pump

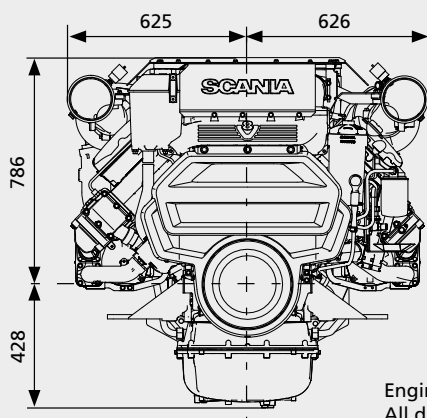
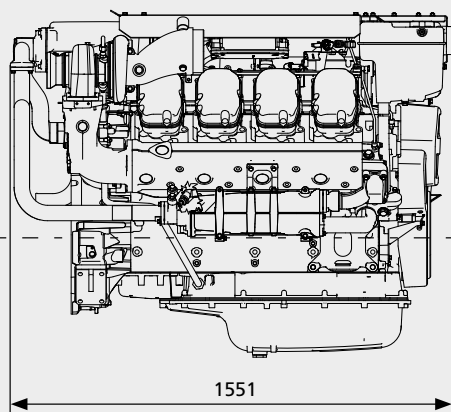


DI16 091M. 430-468 kW

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
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 24V



Engine with heat exchanger
All dimensions in mm

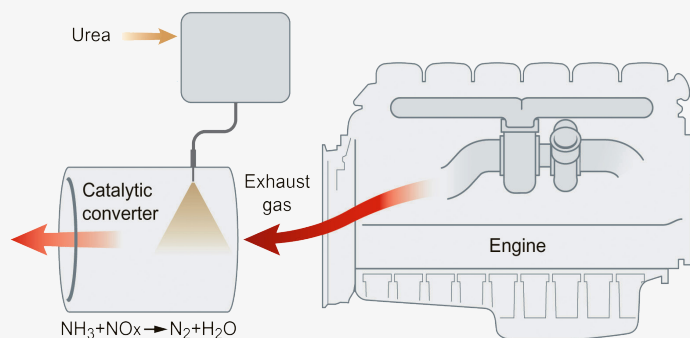


SCANIA

SE 151 87 Södertälje, Sweden
Telephone +46 8 553 810 00
Telefax +46 8 553 829 93
www.scania.com
engines@scania.com



SCR system

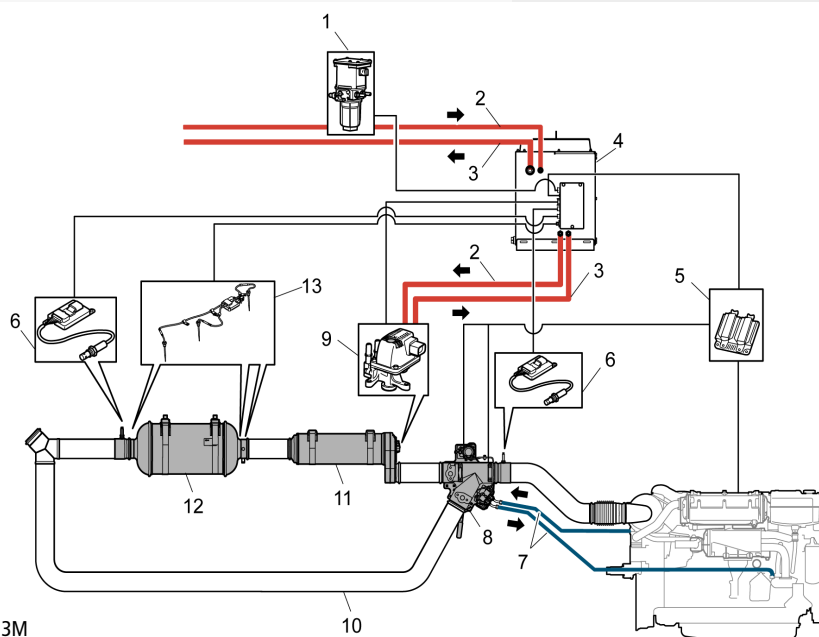


The principle for Scania SCR system

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 by injecting reductant, an 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 Scania SCR system contains an exhaust routing valve that enables to by-pass the SCR system in order to meet the class requirements for marine installations. The system is delivered with an urea unit in stainless steel, prepared for connection to a main tank supported by customer. To ensure the flow of reductant between the main tank and the urea unit a reductant feed pump controlled by Scania can be included. The system can be offered with all mechanical and electrical parts needed except from the exhaust piping which is to be adapted according to the customers installation.



System overview DI13M

	Standard	Optional
1 Reductant feed pump	-	✓
2 Reductant fluid pressure line	-	-
3 Reductant fluid return line	-	-
4 Urea unit (including reductant tank, -pump, -pick up unit and control unit EEC)	✓	-
5 Control unit EMS	✓	-
6 NO_x sensors	✓	-
7 Coolant pipes	-	-

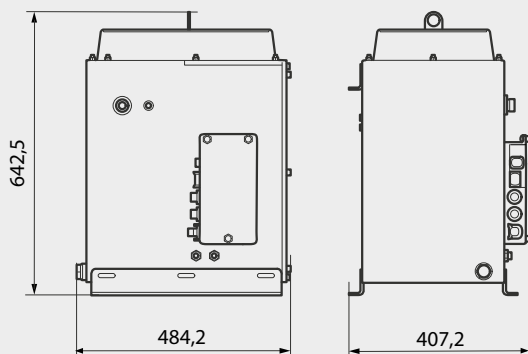
	Standard	Optional
8 Exhaust routing valve	✓	-
9 Reductant doser	✓	-
10 Branch pipe	-	-
11 Evaporator module	✓	-
12 SCR catalyst	✓	-
13 Exhaust temperature sensors	✓	-



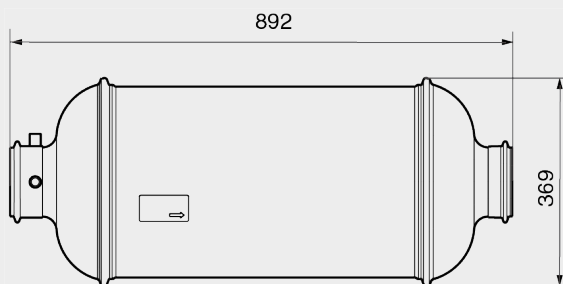
SCR system

Urea unit

Total volume: 30 litres
Filling volume: 16 litres



SCR catalyst



Evaporator module

