



# Marine Diesel Engines

## TECHNICAL SPECIFICATION 16-LITRE ENGINE DI16 441 kW (600 hp)

The DI16M is a twin-turbo charged and charge-air cooled (air-water) 4-stroke diesel engine with EMS (Engine Management System) and EUI-technology (Electronically controlled Unit Injectors).

No. of cylinders	8 in 90° V
Displacement	15.6 dm <sup>3</sup>
Bore	127 mm
Stroke	154 mm
Weight excl. oil and water	1550 kg

### Standard equipment

Unit injectors and control unit (Scania EMS), twin turbochargers (rear mounted). Fresh water charge air cooler (air-water), centrifugal lube oil cleaner and full flow oil filter, fuel filter and fuel pre-filter with water separator, oil cooler, alternator 2-pole 140A 28V, starting motor 2-pole 6.7 kW 24V. Flywheel SAE 14", flywheel housing SAE1 of silumin, front mounted engine brackets, expansion tank with pressure cap, catwalk and cover for belt transmission. Operator's manual.

### Optional equipment

Optional oil sump. Optional oil filling.

### Extra equipment

Stiff or fixed engine suspension. Stub shaft for flexible couplings at front end. Exhaust and air inlet connections, instrumentation, closed crankcase ventilation, silencers, air cleaners, hydraulic pump, compressor, rear mounted power take-off 635 Nm with SAE B connection, crankshaft belt pulleys with extra grooves, bilge pump, oil drain pumps, engine heater, integrated oil temperature sensor, fuel cooler. Certificate from most classification societies.

### Engine description

**Cylinder block** Made of alloy cast iron. **Cylinder heads** Individual cylinder heads. Unit injector technology with engine mounted electronic control unit. **Valves** Four valves per cylinder head. **Timing gear train** Mounted at the flywheel end of the crankshaft. **Camshaft** One camshaft for each cylinder row. **Pistons** Composite pistons with aluminium bodies and steel crowns. **Oil cooler** Full flow cooler inside of the engine block and of multi-plate type. **Connection rods** I-section pressforgings of alloy steel. **Crankshaft** Made of alloy steel with hardened and polished bearing surfaces. **Oil sump** Made of cast aluminium. **Flywheel** Made of cast iron. Direction of rotation seen from flywheel end - counter clockwise. **Electrical system** 2-pole 24 V. **Charge air cooling** Mounted in air inlet manifolds. Cooling supplied from a two-stage fresh water-cooled cooler, integral with the heat exchanger.

### Engine type

			r/min	DI16 42 M (600)		
Engine output:	Curve*		1200	1500	1800	
1 h/1 h unlimited	kW (hp)	ICFN	300 (408)	395 (539)	441 (600)	
<b>Torque:</b>						
1 h/1 h unlimited	Nm (kpm)	ICFN	2387 (243)	2534 (258)	2340 (239)	
<b>Spec. fuel consumption:</b>						
1/1 load	g/kWh (g/hph)		209 (154)	201 (148)	206 (151)	
3/4 load	g/kWh (g/hph)		206 (151)	205 (151)	208 (153)	
1/2 load	g/kWh (g/hph)		210 (154)	212 (156)	205 (151)	
<b>Spec. lube oil consumption:</b>						
1/1 load	g/kWh (g/hph)			<0.3 (0.2)		
<b>Compression ratio:</b>				16:1		

### \*Power definitions:

I = ISO standard test conditions (ISO 3046), C = Continuous power, F = Fuel stop power, N = Net power.

### ICFN - Continuous service:

Rated output available 1 h/1 h. Unlimited h/year at a total load factor of 100%.

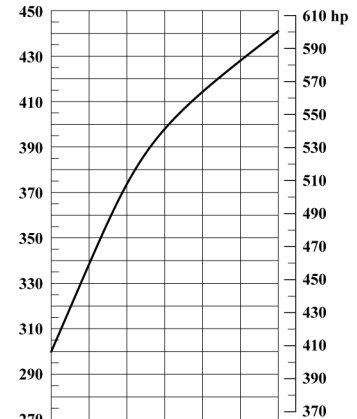
### Keel-cooled engines:

The engine is also available in keel-cooled version. Technical data as above.

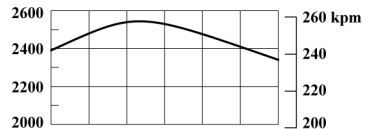
### Test conditions

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<sup>3</sup>  
Viscosity of fuel  
3.0 cSt at 40°C  
Energy value  
42700 kJ/kg  
Power test code  
ISO 3046  
Power and fuel values  
+/-3%

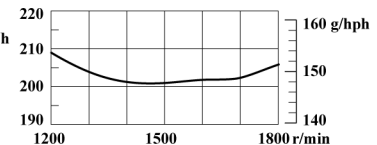
OUTPUT kW  
 $kW \times 1.36 = hp$



TORQUE Nm  
 $\frac{g/kWh}{1.36} = g/hph$



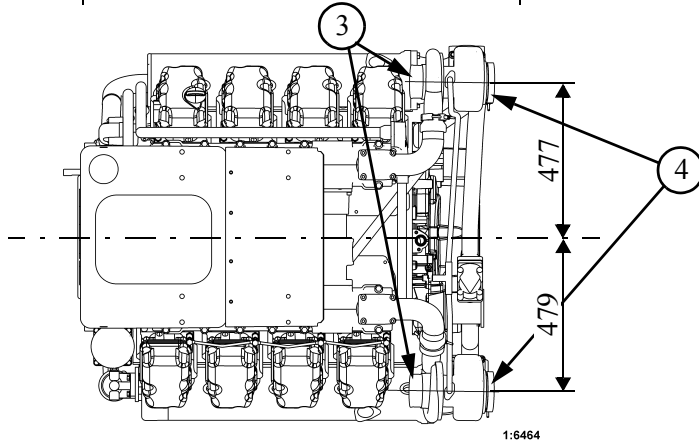
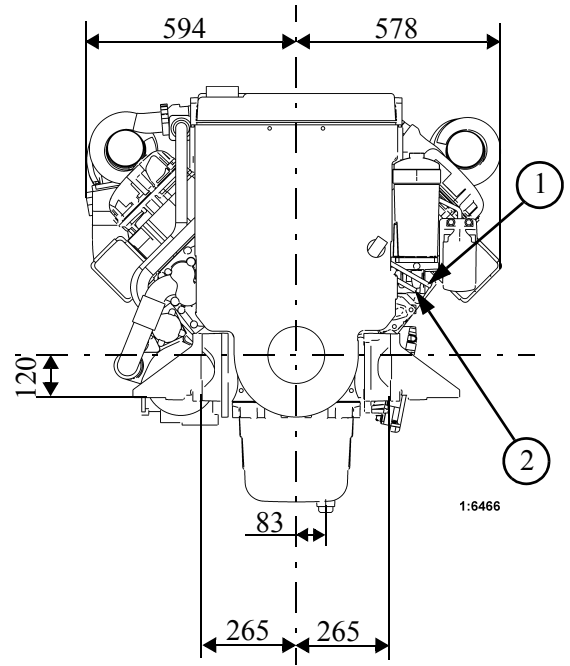
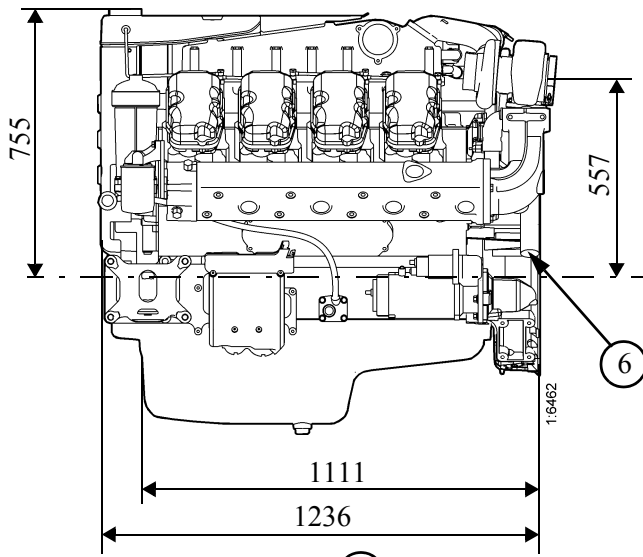
Spec. fuel consumption g/kWh  
 $\frac{g/kWh}{1.36} = g/hph$



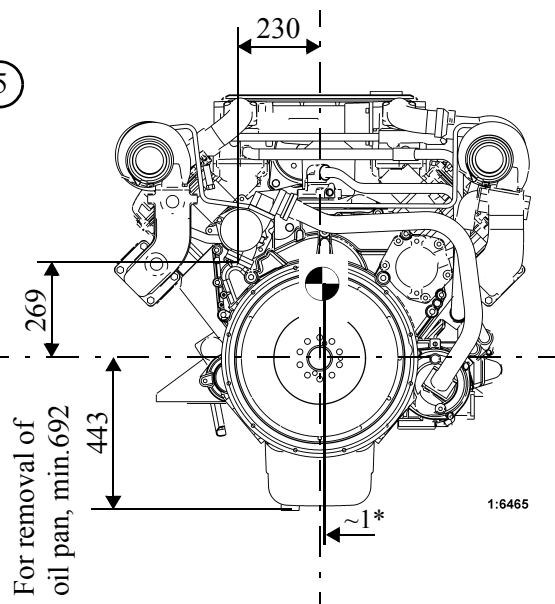
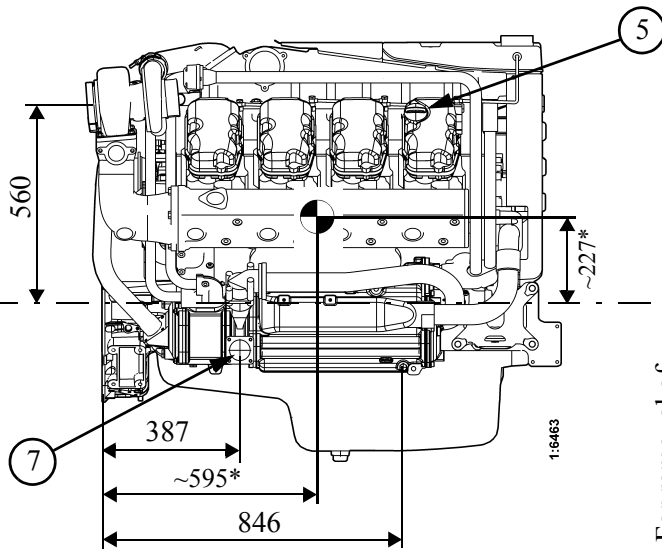
### Environment:

Complies to US Tier 2, EU Stage IIIA and IMO emission regulations.

# DI16M



1. Fuel inlet
2. Fuel return
3. Air intake, Ø102
4. Exhaust outlet
5. Oil filling
6. Sea water inlet, Ø57
7. Sea water outlet, Ø57



This specification may be revised without notice.