

# 74 CTAG for marine auxiliary genset

Radiator and keel cooling application



11.05.2010

## Technical specification

### Basic data

Type	4 stroke, direct injection diesel engine
Configuration	6 cyl inline
Cooling	liquid
Aspiration	turbocharged and charge air cooled
Speed control	SisuTronic EEM3 electronic governor
Bore / stroke	108mm / 134mm
Displacement	7,4 litres
Compression ratio	17,5 : 1
Mean piston speed	6,7 m/s @ 1500 rpm / 8,0 m/s @ 1800 rpm
Rotation seen from flywheel end	counterclockwise
Number of teeth in starter ring gear	153
Dry weight	650 kg

### Standard equipment

Flywheel housing	SAE 1
Flywheel	SAE 14"
Exhaust manifold	air cooled
Air filter	replaceable paper cartridge
Fuel system	Common Rail
Injection and lp fuel lines	double walled
Fuel filter	double, switch-over valve
Starter	
Alternator	
Engine heater	
Closed crankcase ventilation filter	
Exhaust tube with horizontal flange	
Oil drain pump assembly	
Engine mounting brackets, front	

### Optional equipment

- Radiator assembly with fan and touch guards
- Air-air charge air cooler assembly
- Heat insulation over exhaust manifold and turbo
- Belt tensioner instead of alternator
- Double switch-over lub oil filter assembly

### Exhaust emissions

Certified to: CCNR II, IMO NOx code

### Other services

- Material certificates
- Classification certificate: BV, GL, LR EMEA, DNV pending

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### Injection system

Injection system	Common Rail
Fuel quality standard	EN 590
Biodiesel upto 100%	EN 14214
Max suction head of feed pump	1 m
Max fuel level above feed pump	7 m
Fuel suction line inside dia	min. 10 mm
Fuel return line inside dia	min. 8 mm

### Lubrication system

Oil capacity	30,5 litres
Oil consumption	< 0,3 g/ kWh
Oil change interval	500 h
Oil grade requirement	Acea E2-96 / E3-96 / E4 - 98 / E5 - 99 API CF - 4 / CG - 4 / CH - 4
Oil viscosity recommendation	15 W 40

### Cooling system

Coolant volume	16 litres
Coolant volume with radiator	29 litres
Thermostat range, opening / fully open	79 / 85 °C
Max coolant temperature	110 °C
Min volume of expansion tank	10% of total system volume
Max height of expansion tank	10 m
Pressure cap on cooling system	100 kPa
Antifreeze type, min standard	BS 6580-1992, ASTM D 3306-86a

### Air intake and ventilation

Permissible vacuum in engine room	0,2 kPa
Max engine room temperature	45 °C when air intake from engine room 60 °C when air intake via duct
Max air intake restriction	3,5 kPa

### Exhaust system

Max backpressure	10 kPa ( below 8 kPa is recommended )
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### Electric system

Starter	24 V / 4 kW, 2-pole
Alternator	28 V / 60 A, 2-pole
Starter battery capacity	recommended min 170 Ah
Battery cable	min 90 mm <sup>2</sup>

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## Performance data

**Nominal rating:** 182 kW @ 1500 rpm  
200 kW @ 1800 rpm  
**Fan power loss:** 9,5 kW @ 1500 rpm  
17 kW @ 1800 rpm

## Fuel consumption:

load	100%	75%	50%	25%
l/h @ 1500 rpm	43,5	33,0	22,8	11,7
l/h @ 1800 rpm	50,5	38,3	25,8	13,5

## Heat rejection at 100% load to:

	1500 rpm	1800 rpm
Cooling water / radiator	113 kW	130 kW
Exhaust gas	130 kW	152 kW
Surrounding air	10 kW	11 kW

## Miscellaneous data:

The design of the cooling system is based on water / glycol mixture of 60 / 40 % at specific heat of 3,8 kJ / kg.

	1500 rpm	1800 rpm
Cooling water temp out of engine	83 °C	83 °C
Max cooling water temp into engine	49 °C	49 °C
External cooling water flow max	53 l/min	63 l/min
Max back pressure of external system	0,3 bar	045 bar
Air consumption at full load	16,8 kg / min	19,8 kg / min
Exhaust gas flow at full load	17,4 kg / min	20,5 kg / min
Exhaust gas temperature after turbo, max	467 °C	515 °C

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