

# Propulsion Gears for

# Fast Ferries



Photo: Alstom Marine

## TECHNICAL INFORMATION

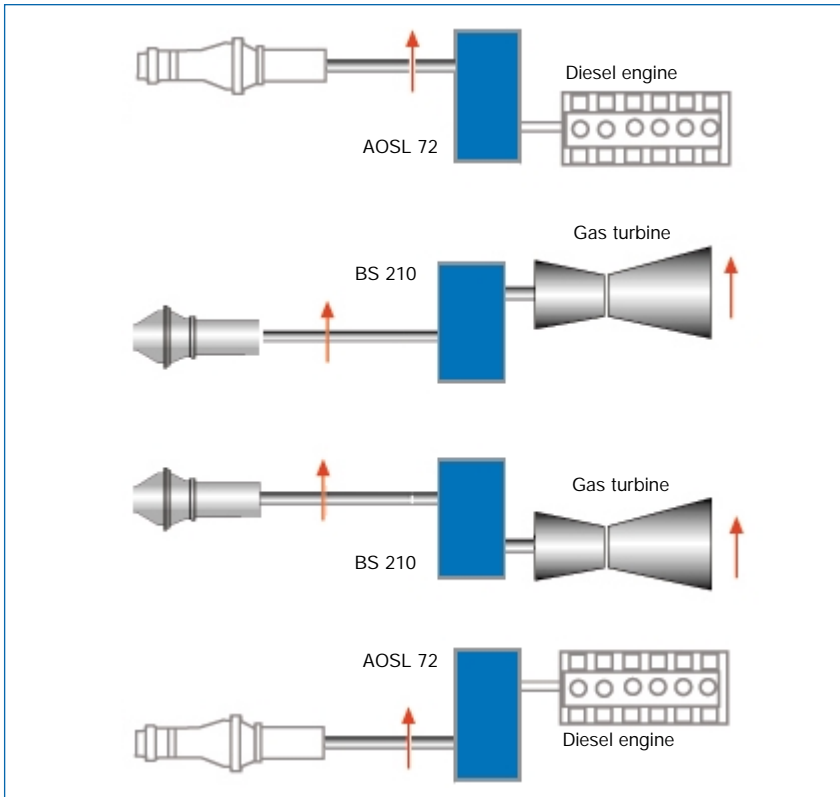
SNCM and NEL Lines  
Corsaire Monohull

With the application as described below, RENK set a new record for fast ferry propulsion power trains. This applies to most powerful waterjet drive systems, where the new generation GE LM 2500 plus version, providing 25,000 kW MCR output, is connected to the newly developed RENK double stage marine gear type BS 210. Aboard the two vessels "NGV Liamone", SNCM and "Aeolos Kenteris", NEL Lines, built by

Chantier's de l'Atlantique, and designed by the yard in the year 1999, this record is assigned to the largest monohull fast ferries known of 127 and 140 meter length at a installed propulsion power of totalling 75 MW each.



BS 210 type gear  
at shop test



**Central Booster Gears  
RENK BS 210**

Gas turbine	GE LM 2500 +
Input power	25,000 kW
Input speed	3,587 rpm
Output speed	423 rpm
Horizontal offset	2,100 mm
Dry weight	28 t

**Wing Gears  
RENK AOSL 72  
(on Aeolos Kenteris)**

Diesel engine	SEMT Pielstick 20 PA 6B STC
Input power	8,100 kW
Input speed	1,050 rpm
Output speed	445 rpm
Center distance	720 mm
Dry weight	4.9 t

**Vessel Data**

**Corsaire 14000 "Aelos Kenteris"**

Length	140 m
Passengers	1 740
Number of cars	440
MCR speed	40 kn
Shipyard	Alstom Leroux Naval, Nantes
Shipowner	NEL Lines, Greece

**Corsaire 13000 "NGV Liamone"**

Length	134 m
Passengers	1110
Number of cars	285
MCR speed	42 kn
Shipyard	Alstom Leroux Naval, Nantes
Shipowner	SNCM, Marseille

Two central booster jets are driven by two gas turbines, and two diesel engines drive the wing jets. With the booster power trains, the most compact RENK BS 210 consists of a two stage horizontal offset gearing in double helical design, with an overrunning SSS clutch on the gas turbine input side.

In case of the Aeolos Kenteris arrangement, the wing gears RENK AOSL 72 provide a diagonal offset to accommodate best the stringent space requirements, and include integral multi disc clutches, where each gear weighs only 4.9 tons.

Demands for light weight design is combined with utmost gear load capacity, ensured with high accuracy ground toothings following exactly defined toothings profile corrections in accordance with the latest stage of gear technology.

The whole set of gear units includes individual lube oil supplies, and numerous monitoring interfaces for perfect integration with the ship control system.



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