

**GRENAA MOTORFABRIK A/S**

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# GRENAA MARINE SYSTEMS

## Heavy duty propulsion equipment



### Grenaa Marine Systems

#### Products to last a lifetime

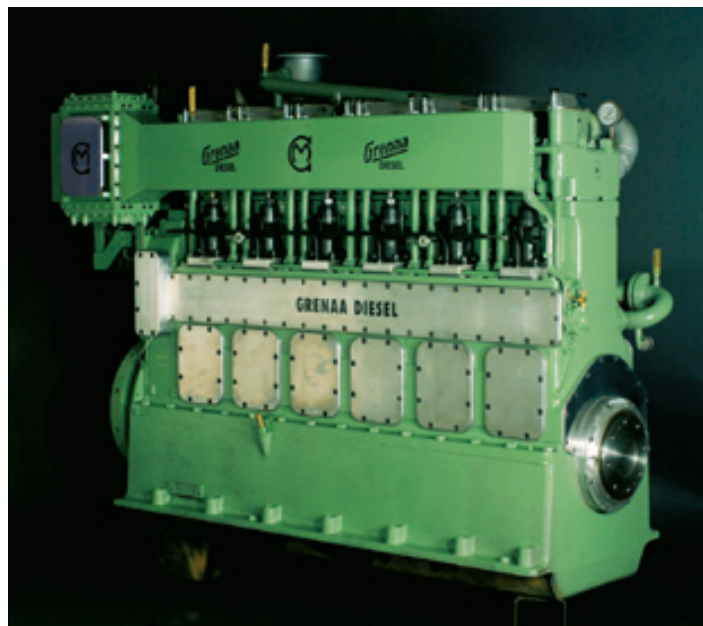
For more than a century A/S Grenaa Motorfabrik has been manufacturing high quality marine systems. Our philosophy is to incorporate the highest reliability into the design of all equipment.

#### True heavy duty equipment

- Diesel engines
- Reduction gears
- CP-propeller systems
- Full propulsion systems

Service intervals are long and all units can be cost effectively refurbished to as-new standard. Even design of new components is done bearing retrofits in mind so owners can update their equipment if desired.

We believe in solid engineering and classic craftsmanship.



#### Grenaa Diesel engines

The Grenaa Diesel engines are built with a keen dedication to the finest of mechanical engineering. Our diesels are non-electronic and uncomplicated yet very efficiently performing machines. A/S Grenaa Motorfabrik's century long experience in building long lived difficult-to-break and simple to repair engines is our trademark.

#### Reduction gears

Reduction gears for medium speed Grenaa Diesel engines and CP-propellers are manufactured. The Grenaa Diesel reduction gears are designed for medium speed engines combined with CP-propeller systems. The gears are delivered with built-in CP-propeller controls and with reduction ratios of 1:2,14, 1:2,64 and 1:3,22 and with PTO's if required.

#### CP-propeller systems

Grenaa CP-propeller systems are supplied for operation with any high-speed or medium speed engine. The propellers have optimized designs for vessels with speed up to 20 knots. All propeller systems are designed so that they can be overhauled to as-new standard without exchange of major components. Computer analysis of the propulsion characteristics and shaft vibrations are performed for each system delivered.

#### Grenaa complete propulsion systems

Complete propulsion systems with engine, reduction gear and CP-propeller is our typical supply. This ensures a perfect match with optimum operating economy. Further, all propulsion equipment from one source ensures high quality and cost savings in service works.

Diesel Engines	: Range 600-1630 HP at 500-1000 rpm
Reduction gears	: Range 500-1500 HP at 500-1000 rpm (input)
CP-propeller systems	: Range 150-2200 HP Diametres 1100-3000 mm with or without nozzles

### PRODUCTS

- Diesel Engines
- Reduction gears
- CP-propeller systems