

# Roll-On/Roll-Off Vessel Propulsion System

## KMS CLUTCHES

### PROBLEM

A major Chinese manufacturer of marine propulsion systems needed a robust clutch solution for use on roll-on/roll-off (RORO) vessel gearboxes. The ship transports wheeled cargo/vehicles in a lower enclosed deck, while passengers travel on an upper deck.

The large ferry utilizes dual diesel-powered propeller shaft propulsion. Each of the two propulsion shaft drivetrains feature twin diesel engines connected to a common gearbox. Clutches are installed on both gearbox input shafts to allow engagement/disengagement of either engine, as needed.

### SOLUTION

The OEM investigated clutch designs from several manufacturers. Ultimately, KMS clutches from Stromag were selected based on reputation, responsiveness, quality and cost-effectiveness. Stromag supplied Model KMS 18000/25 clutches which were integrated and adapted into the gearboxes. Each 635 mm diameter clutch has a torque rating of 240,000 Nm. Wet-running, multi-disc KMS clutches are specifically designed for marine gearbox applications. The oil-cooled, hydraulically-operated units are used where high torques must be transmitted reliably in tight engine room spaces. The clutches have an excellent torque-to-weight ratio and low mass moment of inertia. Units feature a high thermal capacity since switching heat is dissipated by internal oil cooling.

All KMS models are low maintenance, as any disc wear is automatically compensated by piston travel.

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MCCSS-P-8289-SG-EN-US 03/26



### HIGHLIGHTS

- Wet-running, multi-disc clutches designed for marine gearbox applications
- Excellent torque-to-weight ratio
- Low mass moment of inertia
- Oil-cooled; high thermal capacity
- Low maintenance
- Long disc service life

