Wichita Clutch
An Altra Industrial Motion Company

Application Profile

Product

Wichita Kopper Kooled Brakes

Application

Mooring of Sub-Sea Oil Exploration Rigs

Highlights

- One brake does the job of two
- Up to 200,000 Nm of torque – with 50% increase if required
- Patented jackets coupled with copper wear plates for precise stopping/ tensioning capability
- Very high heat dissipation

Wichita Clutch Kopper Kooled Brakes are used on semi-submersible oil rigs for both dynamic tensioning and static holding of mooring cables that keep the exploration rigs in position during drilling. These self-propelled platforms can drill to depths of 2,400 meters but must remain stationary for an extended period; thus a mooring pattern is laid with 8-16 heavy anchoring cables laid from each of 4 corners.

For positioning, ships transport the anchor cables up to 6 km in length from the rig. In this dynamic mode, payout of the cables has to be controlled. The brakes control the payout of the cable at typical speeds of 40m/minute, generating 250 tons of cable tension.

Each corner of the platform is typically equipped with two mooring winches which, traditionally, need two secondary brakes – one for static holding once the anchors are laid and another slipping brake to control the payout during mooring. Dual acting, water-cooled Wichita Clutch Kopper Kool brakes perform both functions. The result is that each corner winch requires only one secondary brake.

Patented jacket design and copper wear plates provide precise tensioning/stopping capabilities with very high heat dissipation in dynamic mode. Once the anchors are laid, the multiple spring actuator in the brake is applied for static holding. Pneumatic disengagement of the static holding brake is designed as fail safe if issues arise during mooring.

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