



HIGHLIGHTS

- Larger friction surface area
- Compact size aids installation
- Reduced load inertia
- Lower surface temperatures
- Reduced friction wear

Application Success Story



Marine Standard Ventilated Clutches

Seabed dredging vessels

PROBLEM

Van Oord Dredging and Marine Contractors has deployed more than 17 specialized vessels to build the largest man-made island in the world in the United Arab Emirates. One dredging vessel, the Volvox Terranova, is capable of shifting more than 20,000 m³ of material in a single load. The vessel uses a huge, toothed draghead to channel sand from the seabed into an intake where powerful suction pumps pull sand into the vessel's hopper. Replacement dredge pump clutches were required on two of the vessels to improve performance.

SOLUTION

Sand and saltwater are highly corrosive and abrasive, so equipment life can be short. To meet the new performance expectations, Wichita Marine Standard Ventilated (MSV) multi-plate clutches were installed for the main dredge pumps on both dredging vessels. On one vessel, a dredge pump drive powered by an 8,000 hp diesel engine is linked by a pneumatically actuated clutch/coupling combination that allows the pump to be connected or disconnected rapidly during dredging.

Replacing the original conical clutch with the Wichita multi-plate clutch provided a lighter design that is smaller in diameter, but with a larger friction surface area. The new clutch significantly reduces load inertia. This, in combination with the increased friction area, results in lower surface temperatures and reduced friction wear.

On these dredging vessels, the multi-plate clutches are operated by Wichita electro-pneumatic controls, which offer a controlled start profile, excellent overload protection, and ease of integration into the vessel's existing control systems.

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