



Product

LI-SSB Brakes and Custom Reducers

Application

Drilling Rig Drawworks

Highlights

Wichita Clutch LI-SSB Brake

'Fail-to-safety' design for high cyclic and general stopping and holding duties

Nuttall Gear Custom Reducer

features through hardened gearing, pressurized oil to the bearings, and a fabricated steel housing

A major drawworks OEM needed reliable powertrain components for a new series of gear-driven AC drawworks used on land-based drilling rigs. The units are designed for operational efficiency with less weight, a compact footprint and reduced noise and vibration. The drawworks is a winch that raises and lowers the drill head as sections of pipe are added during the drilling operation.

The OEM contacted Wichita Clutch, based on previous successful collaborations. After careful review of the application, the Wichita team configured a 36" low inertia spring set brake (LI-SSB) with a torque capacity of 840,100 lb.in. (94,916 Nm) @ 75 PSI to provide smooth, controlled (fail-safe) emergency stops without damaging the drawworks. The self-aligning, air-released LI-SSB is designed to handle the extreme heat typically generated during an e-stop and features an integrated wear sensor and a custom shrink fit hub.

During the initial planning meeting with Wichita Clutch, the OEM was pleased to realize that they could conveniently source the required gearboxes from Nuttall Gear, another Altra Industrial Motion brand. The OEM was aware of Nuttall's reputation for quality and reliability based on a 10-year history of supplying custom gearboxes to other leading drawworks manufacturers.

Nuttall Gear engineers worked closely with the OEM during the development and definition of the gearbox duty cycle. The new self-aligning gearboxes needed to be shaft-mounted for a more compact footprint. Ultimately, Nuttall manufactured custom gearboxes with an input rating of 1500 HP @ 800/2400 RPM and a 10:1 reduction ratio. Units featured a self-contained lubrication system which provided pressurized oil to the bearings, fabricated steel housing and provisions for a heater in cold environments.

Contact Nuttall Gear

Contact Wichita Clutch

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