



Product

SF Type Gear Spindles

Application

Mine Rope Shovels

Highlights

- Custom gear tooth geometry
- Up to 6 degrees of misalignment
- AISI-1045 induction hardened
- Special molded high angle lip type seals
- Heat treated gear teeth to provide higher torque ratings

A global mine rope shovel manufacturer required a robust replacement coupling solution that could accommodate a high degree of misalignment due to the deflection that occurs as the massive machines twist and flex during loading, unloading and rotating.

The large electric shovels, weighing over 860 tons, with payload capacities over 120 tons, remove overburden and minerals including coal, and load it into haul trucks at large open pit strip mines around the world. The couplings are installed on drive motors that operate the shovel's propulsion, crowd, swing, and dipper/bucket hoist winches.

The OEM consulted with Ameridrive engineers to help solve the deflection/misalignment problem associated with the gear couplings originally installed on its shovels. After a careful review of the application challenge, Amerigear SF Type flexible spindles were selected. For many years, Ameridrive had been manufacturing gear spindles designed to accommodate high torque and high misalignment for the steel industry, so the gear spindles were a natural solution.

Ameridrive SF (Flange Type) spindles feature special molded high angle lip type seals, custom gear tooth geometry, and gear teeth that are heat treated to provide higher torque ratings. The AISI-1045 induction hardened spindles provide up to 6 degrees of misalignment. The 13.62 in. and 16.56 in. diameter couplings are the most common sizes used with a torque capacity of 1,621,400 in.lbs.

Ameridrive gear spindles continue to provide exceptionally reliable performance for decades in rope shovels worldwide.

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