



Product

Heavy Duty Speed Reducers

Application

Dam Intake Gate Hoists

Highlights

- Custom helical worm gear speed reducers
- Hardened, ground and polished alloy steel worm and bronze gear
- 140.56:1 reduction ratio
- Cast Iron housings
- Special extended output pinions

The Big Bend Dam, located on the Missouri River near Fort Thompson, South Dakota, was opened in 1963 by the U.S. Army Corps of Engineers. The 10,500 ft. long dam utilizes 8 fixed-blade turbines to generate 494,320 kW of power daily. Large intake gates control the amount of water used to drive the turbines. Electric motor/gearbox drivetrains power cable hoists that raise and lower the gates.

A major rehabilitation project was recently completed on the 95 ft. high embankment rolled-earth dam. The scope of work included new drop-in replacement gearboxes for the intake gate hoists. After 56 years, the original Delroyd speed reducers had reached the end of their useful service life.

Delroyd supplied gearboxes featuring cast iron housings, new custom helical worm gearing, and special extended output pinions. The project had a "Buy USA" requirement (including country of origin for the steel). The units had an input rating of 15 HP @ 1170 RPM, a reduction ratio of 140.56:1, and a 1.0 service factor.

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