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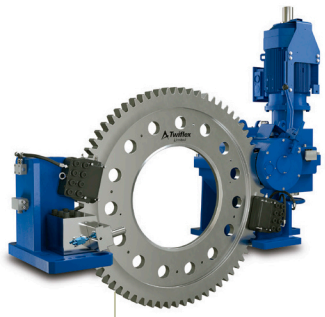
Twiflex®
Altra Industrial Motion

Application Profile



Product TLB Turning, Locking & Braking System

Application **Variable Pitch Axial Fans**

Highlights

- Custom direct hydraulic applied, spring released caliper brakes
- Integrated motor-driven geared pinion
- 20 kNm continuous turning torque at 0.23 rpm nominal speed
- Variable speed turning down to 0.05 rpm
- Static locking torque up to 190 kNm
- Braking torque rated at 21 kNm
- Remote or local control
- Split disc assembly allows for easy retrofitting
- Custom hydraulic power pack and control panel

A leading global manufacturer was looking for ways to improve the safety on its axial fans used at coal-fired power plants. The large electric motor-driven forced draft, induced draft, and primary air type fans are critical to boiler air and flue gas flows in the steam generating process.

Safety concerns arise when the large fan blades need to be replaced per standard maintenance schedules. The blades are accessible through a hatch in the horizontal fan duct. As blades are removed the assembly becomes out of balance causing it to rotate. There is a very small clearance between blade tip and duct, and the inertia of the assembly makes it difficult to stop by hand once it starts to rotate. This condition presented a safety issue as workers' hands could easily get trapped within the tight space during the uncontrolled rotation.

Upon hearing about Twiflex's new TLB (turning, locking, and braking) system, the OEM, a longtime Twiflex customer, recognized it could be a solution to their current maintenance challenge. The built-in flexibility of the TLB system allowed Twiflex engineers to design a custom configuration as they worked closely with the customer to meet the specific fan application requirements. The complete delivered system included turning control (at a very low speed of 0.05 rpm), a manual locking device and hydraulically applied brakes. The high temperature operating environment, required some modifications to both the brakes and turning drives.

The new TLB system allows workers to inch the unbalanced assembly, in either direction, to align a blade with the access hatch, stop and lock the shaft in position, and carry out the necessary maintenance. The TLB features a split disc assembly, allowing it to be easily retro-fitted to the fan drive coupling without disassembling the shaft line. This was important since the new system needed to be installed on existing fans in the field. The cost of the new system was in line with simpler, competitor "indexing" type solutions that do not offer the same infinitely variable positioning of the disc.