



Product

Twiflex VKSD Spring-Applied, Hydraulically-Released Caliper Brakes

Application

Essar Power Coal Conveyor

Highlights

- System generates up to 75,000 Nm (55,317 lb.ft.) of torque
- Brakes provide protection in power-off and overspeed conditions
- Hydraulic power pack offers controlled braking options

Twiflex recently supplied VKSD brakes to the Essar Power Co. in Bangalore, India, for a 3 km (1.86 mile) long downhill overland conveyor with 690 tonnes/hour capacity and a speed of 2.5 m/s (5.6 mph). The installation is part of a 1,200 MW power station fed by coal transported from Mahan near the villages of Bandhaura, Khairahi and Karsualal in the Singrauli district of Madhya Pradesh.

The spring-applied, hydraulically-released VKSD modular brakes act on a 1.3 m (4.2 ft.) diameter disc fitted to the tail pulley. The brake system, including a hydraulic power pack, was designed to stop the conveyor in the case of a power failure or in overspeed conditions when the tail pulley exceeds the recommended speed of 55 rpm. In both cases, the system provides up to 75,000 Nm (55,317 lb.ft.) of torque to stop the conveyor in a controlled manner over a 25-second time period.

The Twiflex VKSD disc brake caliper range is available in a standard configuration comprising dual-spring modules acting on each side of the disc or as a mono-spring (floating) brake. The minimum disc thickness is 20 mm (.78 in.), minimum disc diameter is 1000 mm (39.3 in.). Rated braking force extends from 28 kN to 119 kN (20.6 lb.ft. to 87.7 lb.ft.), with a nominal coefficient of friction $\mu = 0.4$.