



## Product

## Special VKSD-FL Spring-Applied Brakes

## Application

## 60 kW Wind Turbines

## Highlights

- Spring-applied, hydraulically-released modular disc brake
- Asbestos-free 'hi-co' lining
- 119 kN braking force
- Designed to produce over 2 million cycles (spring fatigue life)
- Unique 'parked-off' feature

A major European manufacturer of small wind turbines contacted Twiflex for a rotor and yaw braking solution for their new 60 kW horizontal axis turbine. The brakes are primarily used for parking duty, but also provide emergency stop functionality. Very limited space envelopes for both brake positions presented a significant application challenge. The OEM requested that a single caliper be used on each drive and that the brakes should be a common design to minimize inventory and streamline maintenance requirements.

Twiflex engineers designed a modified VKSD-FL (floating) spring-applied, hydraulically-released brake rated at 119 kN braking force for a 2mm pad air gap. To meet the particular space constraints, Twiflex worked closely with the customer to derive a custom mounting arrangement.

The FL (floating) version was selected specifically because of its reduced axial width and tolerance for misalignment during turbine assembly. A special friction lining was utilized to achieve the required performance with minimal bedding-in burden in the factory. The brake pads were supplied with embedded wear leads to give an indication of the "fully-worn" condition. Proximity sensors were also fitted to monitor the fully-retracted "brake-off" position.

The brakes were designed to produce over 2 million cycles (spring fatigue life) and feature Twiflex's unique 'parked-off' system to facilitate easy pad changes, setting adjustment and maintenance.

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