

## **WINDTC™**

### Torsional Control *Retrofit for 1.5-2.3 MW Turbines*

### Control **Peak Torque Loads,** Control **Turbine Life!**

Extend the life of your gearbox! The WindTC™ is the only mechanical torsional control for wind turbines. This unique mechanical control reduces damaging loading in your drive train by damping torsional vibration and keeping reverse torsional shocks to a minimum. Turbines see up to a 70% reduction in reverse peak torque and 54% reduction in peak torque oscillations.

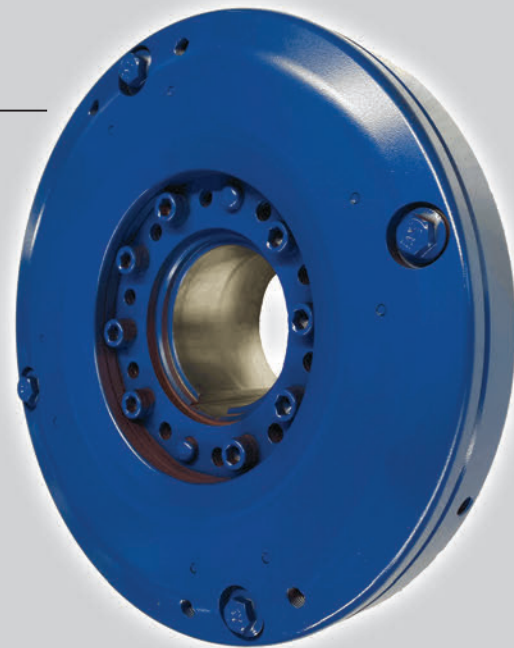
***With the WindTC™ in your turbine, you get reduced magnitude spikes, shorter duration events, improved bearing alignment and increased gearbox life!***

**Its more than just protection for your gearbox! The WindTC™ also protects:**

- Generator Bearings • Blades
- Main Bearings • Pitch Bearings
- Couplings
- Tower Structure

*The WindTC™ has proven its value over five years in the field. Computer modeling and technical papers have shown that the WindTC™ can offer over \$12,000-\$14,000 in value annually PER TURBINE. That means that your payoff is as little as one year!*

*Is your Operating budget in jeopardy because you are replacing bearings and gearboxes that fail prematurely at 3-7 years? Replacing bearings and gearboxes that fail prematurely at 3-7 years is not normal and is not an optimal solution. Wouldn't it be better to prevent the damage from occurring in the first place? With WindTC™ reducing your peak torque loads, you can do just that!*

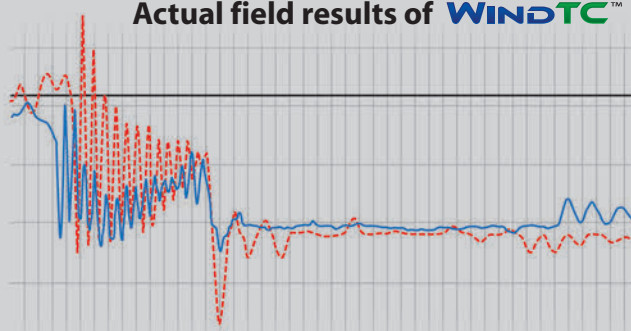


## WINDTC™ Torsional Control Retrofit for Wind Turbines

The WindTC™ has been proven effective in mitigating the peak loads and torsional oscillations. These loads are particularly damaging to bearings as they impact skewed rollers, creating high stress and high strain rates just below the surface of the inner raceway. These impacts can create super hard white etch area (WEA) inclusions that will propagate axial cracks and spalls.

The WindTC reduces the magnitude of the events and dampens the system quickly. It acts as a mechanical “snubber” to your driveline, similar to an electrical snubber for voltage spikes.

### Actual field results of WINDTC™



Recorded by WINDTC™

--- Torque measured without WindTC™  
— Torque measured with WindTC™



### Features:

- Retrofits to existing turbine
- Adaptable to many coupling designs
- Designed to drop into current drive train spacing
- Mounts to the generator shaft

### Benefits:

- Reverse loads damped as much as 70%
- Extends gearbox life
- Reduces fatigue stresses in the entire drive system
- Dampens overall drive train vibration

