

**ZERO-MAX**

**Wind Turbine Products**



## Innovative Solutions to Wind Turbine Applications

Zero-Max is a trusted and approved manufacturer of driveline products for the global wind turbine industry. Based on our decades of experience designing coupling solutions for the most demanding industrial machinery, we understand the special requirements of this unique, dynamic industry. Zero-Max offers field-proven solutions for wind turbines that are designed to deliver maximum performance, quality, and reliability. Our rugged and reliable solutions require little to no maintenance and are ideal for both original installs and for **after-market upgrades/replacements**.

## Zero-Max Solutions

Zero-Max has designed and manufactured wind turbine Composite Disc Couplings and Torque-Limiters for industry since 1984. Used in conjunction, Zero-Max Composite Disc Couplings and Torque-Limiters provide the highest level of overall protection for the demanding requirements of modern wind turbine drivetrains.

Today, Zero-Max continues to be a trusted supplier on select wind turbine systems. We also have a strong understanding of after-market upgrade/replacement requirements. We work with wind-farm owners, industry distributors, and Operations and Maintenance (O&M) professionals to focus on the unique needs of this sector.

- Couplings and Torque-Limiters available for many turbines
- Stock of popular models for short to immediate turnaround
- Light-weight and easy to install – including in the field
- Established distributors and O&M partners worldwide
- Long lifespan with maintenance-free operation
- Field-Proven to operate consistently and reliably



## Flexible Composite Disc Couplings

A wind turbine coupling must be able to withstand extreme winds and adverse, ever-changing climate conditions to maintain high levels of performance. With that in mind, Zero-Max developed an advanced, all-in-one Composite Disc Coupling solution for many turbine drivetrains.

Designed for an operating life of 20-years or more, our couplings help avoid costly wind turbine downtime. Zero-Max's flexible Composite Disc Couplings feature a unique composite disc-pack design that can withstand harsh environmental conditions, provide electrical isolation from the generator into the gearbox, and offer higher misalignment capacity with lower reaction forces, maximizing lifespan.

### Flexible Composite Disc Couplings for Wind Turbines

- Couplings available for many wind turbines
- Robust torque capacity in harsh environments
- Composite material proven in extreme conditions
- High misalignment capacity
- Electrical isolation properties
- Light-weight and easy to install
- Proven maintenance-free operation
- Lower Life Cycle Cost (LCC)

## Torque-Limiters

Zero-Max's Torque-Limiters protect wind turbines against peak loads, reverse torques, and grid shorts. This functionality prevents the transmission of excess torque from the generator to the gearbox in the event of grid fault or disturbance to protect against premature failure.

Shaft-mounted to the generator shaft, our compact, bi-directional wind turbine Torque-Limiters are factory set to slip at specific torque settings. Designed for consistent and repeatable operation and maximum operational life, our maintenance-free Torque-Limiters feature automatic re-engagement to reset after slip events with no manual intervention.

### Torque-Limiters for Wind Turbines

- Protects both the gearbox and generator
- Provides reliable and consistent operation
- Generator shaft-mounted for easy installation
- No adjustments or maintenance required
- Automatic re-engagement
- Bi-directional functionality with no limitations
- Manufactured to ISO 9001:2015 standards
- Lower Life Cycle Cost (LCC)



**Zero-Max Proven Solutions for New Installations  
and After-Market Upgrades/Replacements:**

| Turbine MFG       | Turbine Model | Coupling | Torque-Limiter* | NOTE**      |
|-------------------|---------------|----------|-----------------|-------------|
| Acciona/Nordex    | AW-1500       | •        | •               |             |
| NEG Micon/ Vestas | NM44/NM48     | •        |                 |             |
| NEG Micon/ Vestas | NM52/NM54     | •        |                 |             |
| Pioneer Wincon    | P750/49       | •        | •               |             |
| RRB Energy        | PS600         | •        |                 |             |
| Siemens-Gamesa    | G47           | •        |                 |             |
| Siemens-Gamesa    | G5X           | •        | •               |             |
| Siemens-Gamesa    | G8X/G9X       | •        | •               | GEN2 & GEN3 |
| Siemens-Gamesa    | G114          | •        | •               | 50 Hz Only  |
| Unison            | U88/U93       | •        | •               |             |
| Unison            | U113          | •        | •               |             |
| Vestas            | V47           | •        |                 |             |

\* Zero-Max Torque Limiter designed to work in conjunction with Zero-Max coupling. In most cases, the Torque-Limiter is provided standard with coupling solution.

\*\* Replacement Disc-Packs available for other models.



**////// ZERO-MAX®**

13200 Sixth Avenue North, Plymouth, Minnesota 55441-5509  
Phone 800.533.1731 763.546.4300 FAX 763.546.8260

[zero-max.com](http://zero-max.com)

©Zero-Max, Inc., All Rights Reserved  
Printed in U.S.A., Rev1.025