ULTRA HIGH PERFORMANCE

COMPOSITE DISC COUPLING

SOLUTION FOR MECHANICAL

POWER TRANSMISSION

**OPTIMIZED FOR HARSH ENVIRONMENTS**

# Nexus COMPOSITEDISC COUPLINGS™

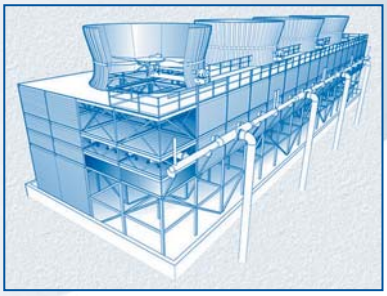
Innovation • Invention • Ingenuity • Integrity • 25 Years

*Cooling Tower Fan Drives*

*Paper Making Machinery*

*Pumps, Fans, Compressors*

*Vertical Drive Mechanisms*



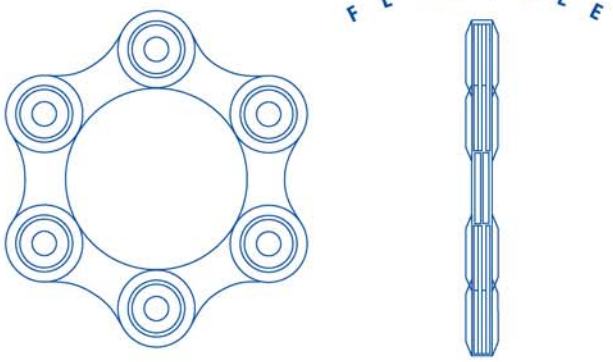
**engineered for maximum endurance and fatigue life**

Advanced Composite Products and Technology, Inc. ACPT®

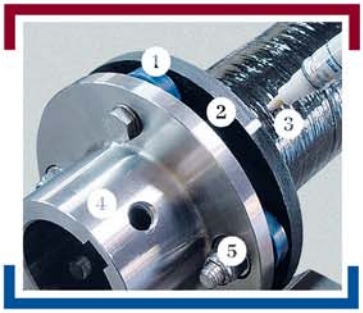
# Nexus An Optimized Advanced Composite Product from ACPT

# COMPOSITE DISC COUPLINGS™

**NEXUS composite couplings** are a highly engineered, non-lubricated, advanced composite, disc-type coupling. The spacer shaft and flanges are made from composite materials that ensure strength and endurance while delivering light weight, corrosion resistance and ultra-violet light protection. The disc-type flexible elements are made from a combination of stainless steel bushings, advanced composite disc-links and urethane encapsulation to provide a unitized assembly with a theoretical infinite fatigue life. The flexible elements are rated for 1° misalignment and carry a four times peak overload rating when applied at 2.0 service factor. The hubs and hardware are made from stainless steel for added corrosion protection in aggressive environments. **The high peak overload capacity and high-strength composite elements of the NEXUS Disc Coupling make it a heavy-duty contender despite its light weight.**




## OPTIMIZED COMPOSITE DISC




**NEXUS** Disc Couplings consist of:

1. **composite flexible elements**
2. **composite flanges**
3. **composite spacer tube**
4. **stainless steel hubs**
5. **stainless steel hardware**

### Unitized Composite Flexible Element

**Nexus Disc Couplings** offer superior endurance, extended fatigue life and lowered maintenance. The flexible element features high-strength composite materials and high-grade stainless steel bushings. Our proprietary disc design and urethane encapsulation provide an easy-to-install unitized coupling assembly. No fumbling with shims and washers. No fretting corrosion common in metal disc or membrane couplings. No parts rubbing together during operation.

### Unmatched Strength and Endurance

**Nexus Disc Couplings** incorporate large diameter stainless steel bolts that offer greater strength, fatigue life and corrosion protection, providing a *Peak Torque* rating of at least four times full load operating torque of electric motor driver when selected with a 2.0 service factor rating. No composite disc coupling lasts longer than NEXUS.

***Left & Right:** **ACPT custom composite couplings** were employed in the carbon composite powertrain for the **Marine Expeditionary Fighting Vehicle** (EFV), shown here on maneuvers in the desert and at sea preparing for a beachhead landing.*

ACPT® military • aerospace • marine • performance racing • industrial

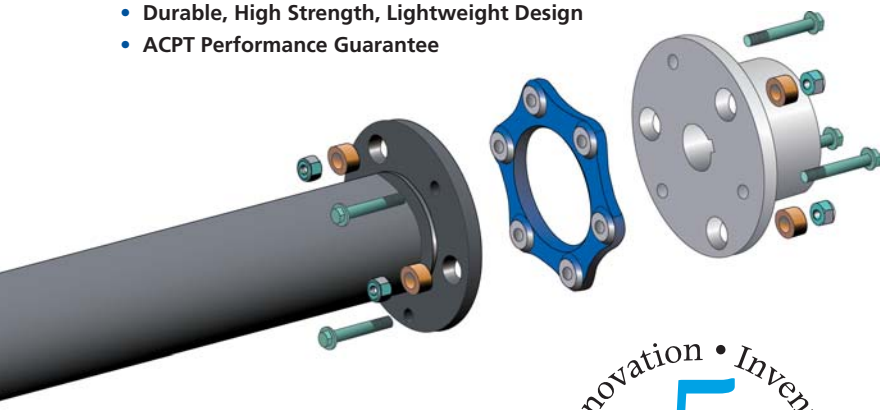
# Ultra-High Performance in the Harshest Environments

## ACPT...A Leader in Composite Power Transmission

For 25 years, **Advanced Composite Products and Technology, Inc.** has developed unmatched expertise in advanced composites engineering and manufacturing rivaling any company in the world. Our knowledge and experience in producing unique composite systems for power transmission is borne from a long history of developing successful applications and specialized products for Military, Aerospace, Marine, Performance Racing and industrial environments. The **Nexus Composite Disc Coupling** is an extension of this experience and represents an engineering first in the development of a performance-optimized composite coupling that offers distinct advantages over any other competitive product on the market today. The **Nexus Composite Disc Couplings** are designed to provide optimal performance in areas where moisture, dust, dirt and corrosive conditions exist. This lightweight, high-strength assembly provides proven reliability, lower maintenance and extraordinary fatigue life and endurance. When your application demands the most durable and efficient composite disc coupling available–nothing compares to **NEXUS**.

## Features

- Unitized Composite Flexible Element
- Composite and Stainless Steel Construction
- Durable, High Strength, Lightweight Design
- ACPT Performance Guarantee



***Right:** Nexus Composite Disc Couplings are ideal for a wide array of mechanical power transmission applications including; cooling towers, pumps, fans, compressors and various vertical drive mechanisms.*

## Benefits

- 4X Peak Overload Rating
- Smoother Operation
- Fewer Parts, No Fretting Corrosion
- 1° Misalignment per Flexible Element
- Increased Fatigue Life and Endurance Limit
- Significant Reduction in Rotating Mass
- Superior Corrosion Resistance
- Safer Installation and Easier Handling
- No Need for an Overhead Crane

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**Extended Single Spans** Nexus couplings eliminate the need for intermediate bearing supports and the resulting maintenance cost. The high strength plus light weight of a Nexus Disc composite coupling provides a critical speed much higher than its steel counterpart and can typically span about twice the distance of a steel coupling.

**Lower Rotating Weight** Nexus couplings decrease vibrations and bearing loads on coupled equipment resulting in extended life and further reduction in maintenance costs. Installation is made easier and quicker by eliminating the need for a crane.

**Corrosion Protection** Nexus couplings are produced from advanced composite materials that provide essential fatigue and corrosion resistant properties. Further, where used, metal components are constructed from high grade stainless steel.

**Longer Bearing Life** The low weight of the **Nexus Disc Composite Coupling** reduces its over-hung load on connected equipment bearings by as much as 80% when compared to steel couplings. This reduction can double bearing life in motors and gear boxes. Nothing works harder than NEXUS.

***Above & Right:** Nexus Disc Couplings and **ACPT** composite products have proven their reliability in numerous performance racing and high-tech aerospace designs, like the tail-rotor drive assembly for the rotary-winged UAV shown here in flight.*

DNV

ISO 9001:2000
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CERTIFIED

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# Nexus COMPOSITE DISC COUPLINGS™


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