

# Vickers® by Danfoss Cylinders for wind turbine applications

For wind turbine blade pitch and brakes



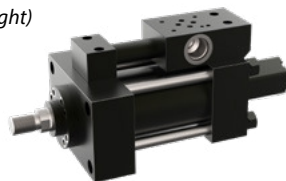
Wind power turbine control is a very demanding application that requires cylinders to be extremely reliable and durable due to the nature of this continuous production process. Vickers by Danfoss cylinders are designed to provide the performance, seal integrity, and design options required for Wind Turbine Generators (WTGs). Danfoss has decades of application expertise and cylinder experience which translates to better solutions for wind power such as blade pitch and braking applications.

### Tie Rod Cylinders

Danfoss offers a broad range of NFPA and ISO hydraulic, pneumatic, and electrohydraulic cylinders. This comprehensive line features a proven design with robust materials and a smarter sealing system, for improved performance and better serviceability.

Vickers by Danfoss cylinders are available in a range of standard sizes to 30 in/800 mm bore, 300 in/8 m stroke and pressure ratings to 3000 psi/210 bar. Custom products that far exceed these specifications are also available.

*Tie Rod Cylinder (left)  
and the EH Series  
Actuator (right)*



### EH Series Electrohydraulic Actuators

The Vickers by Danfoss electrohydraulic actuator combines a high-performance hydraulic cylinder and a control valve mounting manifold in one convenient package. Advanced, closed loop motion control is readily attainable with the simple addition of a proportional or servo valve and a precision non-contacting feedback transducer coupled with the appropriate electronic controls.

Electrohydraulic actuators are designed to eliminate the need for separate hydraulic manifolds, plumbing between control valve and cylinder, transducer mounting brackets, and other complex arrangements typical of the cumbersome systems it replaces. With the option of the cast aluminum cover, a position transducer can be conveniently and safely contained within the cylinder assembly. All of this allows the electrohydraulic actuator to work reliably in harsh environments that can easily damage most electric servo motors with ball screws and other types of actuators.

## Repair and Service of Hydraulic, Pneumatic Cylinders

Integration of repair and service capability with new product manufacturing translates to better repairs for your product. We repair your cylinders quickly but we often can also recommend structural improvements, offer improved coating technology, and access to the latest seal technology. All of this is covered by Danfoss' solid warranty program.

## Configurator: Professional Grade Tools to Build Your Own Cylinder

Online cylinder selection tools streamline the specification process using sound engineering principles. Available only from Danfoss, these tools provide configurable part numbers and drawings.

## Global Service and Delivery: Quick, Close and Convenient

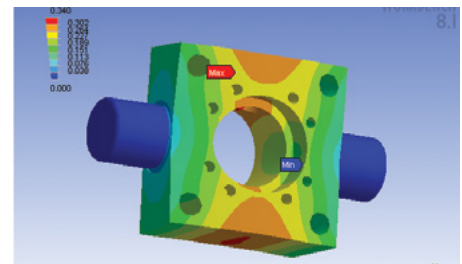
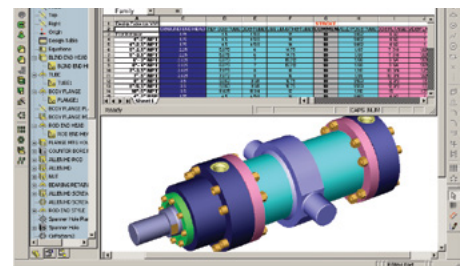
With Danfoss, you always get the cylinders you need, when you need them. Danfoss has global presence, and a global distribution network, to ensure your local needs are met.

## Best-In-Class Simulation and Modeling Tools

Comprehensive 3D drawing capability and finite element analysis expertise, coupled with years of experience results in improved design quality. Danfoss excels at using these cutting-edge tools to simulate components and assemblies in real-world applications, to assess areas like pressure loading and stress impact.

## Custom Cylinders Built to Your Specifications

Danfoss engineers welcome atypical application or cylinder needs. With decades of experience, they will configure the right solutions quickly. Whether it means solving unique application problems, upgrading existing products, or designing new cylinders, we are up to the challenge.



*Danfoss' comprehensive modeling tools are used in the design process to better simulate application environments and design superior quality products.*



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