

Hydraulic Systems Solutions

**Pitch
Brake
Yaw
Communication**

We take responsibility

**Proven technology
Highly skilled employees
Supply Chain Management
Test and Quality Control
3D Design
Computation and Simulation**

www.fsenergy.dk

Advantages of Hydraulic Pitch Control

Fritz Schur Energy - your partner within the Wind Turbine Industry

Fritz Schur Energy is part of the family owned Fritz Schur Group founded in 1846.

In Fritz Schur Energy we build on relations, such as strong and loyal customer partnerships, stable and long lasting relations with leading suppliers worldwide and devoted liasons with skilled employees with solid technical insight in the Wind Turbine Industry.

Over the years, Fritz Schur Energy have, with our customers, developed reliable compact hydraulic solutions combining requirements for high forces and low weight. Thereby we have provided competitive advantages for our customers as well as the wind turbine owners.

Our solutions integrate hydraulic supply and control for pitch, yaw, brakes, cranes, hatches, etc., which reduces demand for space and weight.

Today, Fritz Schur Energy have a strong image in the Wind Turbine Market, and customers like Siemens Wind Power have for years benefitted from our cutting edge technologies and reliable solutions.



We deliver on our promises

Choose hydraulic pitch control for reliability and safety

Hydraulic pitch control provides high reliability due to easy maintenance and a high degree of safety due to simple systems.

Hydraulic pitch control is a drive system, which, under emergency control, is able to operate without an external power supply. Furthermore, hydraulic pitch control is not sensitive to vibrations, and failure safe operation is easily achieved with only a few non-electrical components.

With hydraulic pitch control you have the shortest possible stopping time in case of emergency stops. Instant stop is for instance achieved with 7 degrees pr. second, giving a total stopping time of less than 10 seconds.

Hydraulic pitch control works under almost all weather conditions. The temperature span can vary from -25 °C to +55 °C without affecting the system's performance.

Hydraulic pitch control prompts low total cost of ownership

Easy mounting and low maintenance costs along with a long life span make hydraulic pitch control a good investment.

When producing larger series of wind turbines, manifold techniques are used. Mounting of such systems is easy and not particularly time consuming, as this approach only requires installation of very few components.

Hydraulic systems are by nature backlash free. Hence, the mechanical wear on the pitch control is minimal. This combined with high level of stiffness of the hydraulic system results in optimum performance with maximum damping. Particularly rapid changes in wing torque due to turbulence and high wind gusts are controlled and damped instead of being transferred through the mechanical system thus preventing wear.