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Seide Machine, No:19, 1411/1. Sk., Izmir, Turkey





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Overview

Hydraulic Excellence at the Heart of Filtration and Wind Energy

In today's rapidly advancing industrial world, efficiency, precision, and sustainability are no longer optional they're essential. At the center of this evolution is hydraulic technology, powering critical functions across both filtration machinery and wind turbines. From ensuring consistent fluid control in high-performance filtration systems to enabling precise blade pitch and yaw movement in wind energy applications, hydraulic systems deliver quiet yet powerful performance. This catalog presents a comprehensive range of hydraulic components and systems engineered to maximize efficiency, enhance reliability, and reduce environmental impact. From pressure control valves and actuators to hydraulic power units and advanced cooling systems, every solution is designed for high-output, low-maintenance operations.

With a focus on innovation, durability, and seamless integration, our hydraulic technologies support the foundations of clean energy production and fluid management—helping businesses take control of flow and power the future.

Fatih B. Bektas - Sales Dept.



Hydraulic systems for rotor and azimuth brake

Highlights of YAW systems



Hydraulic Systems for Rotor and Azimuth Brake In wind turbines, rotor and azimuth (yaw) brake systems are crucial for operational safety and controlled maintenance procedures. Hydraulic systems deliver the high clamping force and fast response needed to engage or release brakes efficiently under varying wind loads.

These systems typically include:

Check Valves

Check valves ensure one-way flow of hydraulic fluid, preventing backflow that could cause unintentional brake release. They are critical for maintaining system pressure and ensuring the brake remains engaged even in the event of a pressure drop



Air Breathers

Air breathers prevent contaminants and moisture from entering the hydraulic reservoir while allowing the system to "breathe" as fluid levels change due to temperature or operation. This protects internal components and extends the system's lifespan.



Return Filters

Return filters capture impurities and particles from the returning hydraulic fluid, keeping the system clean and efficient. High-efficiency return filtration is essential to protect valves, pumps, and actuators from wear and failure.



Together, these components form an integrated, reliable braking system that meets the demands of modern wind turbine operation—ensuring safety, durability, and precision control.

Pitch control

Major projects and innovations

Hydraulic Systems for Pitch Control In wind turbines, the pitch control system adjusts the angle of the rotor blades in real-time to regulate the turbine's rotational speed and optimize energy capture. Hydraulic systems are widely used in pitch control due to their fast response time, high force output, and reliable performance under demanding conditions.

Proportional Directional Control Valves

These valves precisely regulate fluid flow and direction based on real-time input signals, allowing for smooth and accurate blade positioning. Their proportional functionality ensures that the blade pitch changes are gradual and controlled, reducing mechanical stress and enhancing energy efficiency.

Cartridge Directional Valves

Compact and modular, cartridge directional valves offer space-saving solutions for controlling flow paths within hydraulic manifolds. They are ideal for pitch systems requiring fast switching, low leakage, and high reliability, especially in compact nacelle installations.

High Pressure Filters

Operating at high pressures—often exceeding 210 bar (3000 psi)—these filters protect sensitive hydraulic components from contamination. Clean hydraulic fluid is critical to the long-term reliability and performance of pitch actuators and valves, especially in offshore or high-dust environments.

Together, these hydraulic elements provide precise, responsive, and robust control essential for maintaining turbine performance, reducing downtime, and extending system life even under extreme wind and weather conditions.







Oil service units for service or retro-fitting

Highlights of Oil Service Unit

RK91 Filtration Machines

The RK91 filtration machines are designed to deliver high-efficiency filtration for a variety of industrial hydraulic systems. Known for their advanced filtration technology, these machines provide optimal performance in removing solid contaminants from oil and hydraulic fluids, ensuring clean fluid conditions for long-term system health.

These machines are specifically suitable for:

Filtration of high-viscosity oils.

Prevention of clogging in fine filtration systems.

High flow rate filtration in demanding applications.

Offering both continuous operation and easy maintenance, the RK91 filtration machines are built to improve the overall efficiency and reliability of hydraulic systems.

Off-line Filters

Off-line filters are designed to remove contaminants from hydraulic fluid in systems that are not in active use. These filters provide a continuous filtration process without disrupting system operations, ensuring clean oil even during maintenance or retrofitting periods.

Key benefits of off-line filtration:

Prevents contaminant build-up in hydraulic systems.

Improves fluid life, reducing the need for frequent oil changes.

Extends the life of system components by maintaining cleaner oil and preventing damage from debris.

Ideal for both preventative maintenance and system upgrades.







Condition Monitoring

Highlights of condition monitoring

OPCom Oil Particle Monitor

The OPCom Oil Particle Monitor continuously measures particle contamination levels in oils, ensuring optimal hydraulic and lubrication system conditions. It detects particles across various sizes to identify potential issues like wear or fluid degradation.

Key Features:

Precise Particle Counting: Detects particles in the micron range. Real-Time Monitoring: Continuous, proactive maintenance data. Wide Compatibility: Suitable for various oils. User-Friendly Interface: Simple monitoring with customizable alerts.

Benefits:

Protects equipment by identifying early signs of wear. Optimizes fluid management, extending equipment lifespan. Enables proactive maintenance, reducing downtime.

OPCom FerroS Wear Sensor

The OPCom FerroS Wear Sensor monitors ferrous wear particles in oil, detecting early signs of component wear and enabling predictive maintenance.

Key Features:

Ferrous Particle Detection: Monitors wear in bearings and gears. Real-Time Wear Monitoring: Immediate feedback on machinery health. Early Fault Detection: Alerts operators of increased wear. Versatile Application: Suitable for various industries.

Benefits:

Improves predictive maintenance and reduces downtime. Extends equipment life by preventing excessive wear. Minimizes repair costs by detecting wear early.

LubCos H2O+II Oil Condition Sensor

The LubCos H2O+II Oil Condition Sensor measures water content in oils, helping prevent corrosion and degradation in hydraulic and lubrication systems.

Key Features:

Real-Time Water Detection: Continuous moisture monitoring. High Sensitivity: Detects low water levels. Oil Quality Assessment: Monitors overall oil condition. Easy Integration: Seamlessly integrates with existing systems.









Lubrication systems for main gear boxes

Lubrication Systems for Main Gear Boxes

Lubrication systems for main gearboxes are essential for reducing friction, preventing wear, and ensuring smooth operation of wind turbine gear systems. These systems provide continuous lubrication, protecting critical components from damage and improving the overall reliability and performance of the gearbox. Efficient filtration is a key part of maintaining oil quality and extending the lifespan of the system.

Key components of lubrication systems include:

FNL 1000 Low Pressure Filter

The FNL 1000 low pressure filter is designed to remove larger contaminants from lubrication oil at low pressure levels. It helps in maintaining oil cleanliness and protects critical components such as bearings, seals, and gears by filtering out solid particles that could cause wear or damage. The FNL 1000 is commonly used in systems where continuous oil flow and high filtering efficiency are required to ensure optimal gear box performance.

Lubrication Oil Filter System

The FNAW lubrication oil filter system provides high-efficiency filtration for wind turbine gearboxes, ensuring clean and stable lubrication. This system filters out both fine and coarse contaminants, protecting the gearbox from unnecessary wear. The FNAW system is essential in systems that face extreme operational conditions, offering high filtration capacity and ensuring long-term gearbox reliability.

Filter System

The FNLW filter system is designed for advanced filtration in gearbox lubrication circuits. With its high dirt-holding capacity, this system is built to handle high-flow applications, ensuring that oil is cleaned continuously, even under heavy load and high temperatures. The FNLW filter system plays a key role in maintaining consistent oil quality, reducing maintenance and downtime while improving the overall longevity of the gearbox.





Accumulators

Highlights of hydraulic accumulators

Efficient Energy Storage & System Reliability

Hydraulic accumulators play a critical role in modern wind turbine systems by ensuring reliable operation, energy efficiency, and enhanced safety. Integrated within the turbine's hydraulic system, accumulators are primarily used to store pressurized fluid, maintain system pressure, and deliver high-power output during peak demand or emergency operations.

Key Applications:

Yaw and Pitch Control:

Accumulators supply hydraulic energy to adjust the yaw and blade pitch, optimizing wind capture and ensuring safe operation under variable wind conditions.

Emergency Braking Systems:

In the event of power failure or system fault, stored hydraulic energy provides immediate force to activate the braking mechanism, ensuring quick and safe shutdown.

Damping Vibrations:

By absorbing pressure fluctuations and hydraulic shocks, accumulators contribute to smoother system operation and longer component lifespan.

Benefits: Increased System Reliability

Reduced Energy Consumption

Compact and Maintenance-Friendly Design

Supports Sustainable, Renewable Energy Production

Our advanced hydraulic accumulator solutions are designed to meet the demanding environmental and operational challenges of wind energy applications, supporting both onshore and offshore turbines.





Hydraulic Hose

Highlights of hydraulic hose

Flexible Power Transmission for Demanding Environments

Hydraulic hoses are essential components in wind turbine systems, responsible for transporting pressurized hydraulic fluid between critical components such as pumps, actuators, accumulators, and control valves. Designed to withstand extreme environmental conditions, these hoses ensure reliable and continuous performance in both onshore and offshore wind applications.

Key Applications:

Blade Pitch Control:

Hydraulic hoses deliver precise fluid flow for adjusting blade pitch, helping maximize energy output and improve turbine efficiency.

Yaw System Operation:

Flexible hose assemblies allow controlled movement of the nacelle by transmitting hydraulic power to yaw drives.

Brake Systems: In emergency or routine braking, hoses transport fluid quickly and safely to actuators, ensuring fast response times.

Features & Benefits: High-Pressure Resistance & Flexibility

UV, Ozone & Salt Spray Resistant Covers

Low Maintenance and Long Service Life

Vibration & Shock Absorption for Smooth Operation

Our hydraulic hose solutions are engineered for durability, flexibility, and safety – ensuring optimal hydraulic system performance even in the most demanding wind turbine environments.



About Us

Highlights of hydraulic hose

At Seide Machine, a proud member of the Hidroman Group, we specialize in the design and production of high-performance machinery and hydraulic system solutions. With over 20 years of experience, we have become a trusted name in the industry, known for our engineering excellence, quality-focused manufacturing, and commitment to innovation.

Rooted in our deep expertise and guided by a forward-thinking mindset, we offer cutting-edge solutions tailored to meet the evolving needs of global industries — from energy and construction to automation and beyond. Our customer-centric approach drives us to deliver not only products, but long-term value and partnership.

We believe that true progress comes from combining technical precision with relentless innovation. With a dynamic team, state-of-the-art facilities, and a global perspective, we continue to build machines that move industries forward.



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