



Local Solutions For Individual Customers Worldwide

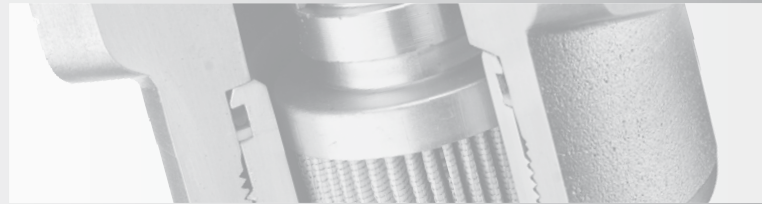
STAUFF Clamps



STAUFF Test



Filtration Technology



Diagtronics



Hydraulic Accessories



Valves



Flanges



**Cable Installation Systems
and Fluid Technology Components**
for Wind Energy Applications

Product Overview



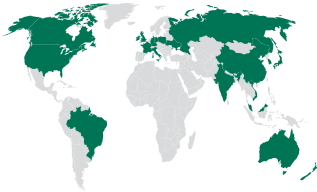
Cable Installation Systems and Fluid Technology Components for Wind Energy Applications

Originating and located in Werdohl in the German Sauerland region, we have become an internationally leading developer, manufacturer and supplier of pipework equipment and hydraulic components under the brand name STAUFF.

Decades of experience, highly-motivated and qualified staff, state-of-the-art manufacturing technologies and a foresighted management give us the reputation of being a competitive partner.

Our in-house laboratories carry out constant tests in line with international standards on all products. Certified in accordance with ISO 9001:2008 (Quality), ISO 14001:2004 (Environmental Protection) and OHSAS 18001:2007 (Occupational Health and Safety), our management system continually strives for perfection. Many of our products have been successfully tested and approved by several international organisations and institutes.

Our well-stocked warehouses and flexible production lines ensure prompt reactions and short delivery times.



Represented by a tight network of distributors and wholly-owned manufacturing facilities, distribution bases and warehouses in 18 countries worldwide, we are also close to you.

Our subsidiaries also supply additional retail products related to the fluid power industry, thereby offering a near-complete range of industry-specific key products.

Local Solutions For Individual Customers Worldwide.



The STAUFF companies worldwide have many years of experience in serving customers in the Wind Energy industry with a comprehensive range of cable installation systems and fluid technology equipment, which some of has been exclusively developed according to individual requirements in these markets.

The STAUFF product range includes:

STAUFF Clamps

Clamping systems for pipes, tubes, hoses, cables and other components; Custom-designed special clamps according to customers' requirements or based on STAUFF developments

STAUFF Test

Hydraulic test points and hoses providing leak-free connections into fluid power systems for monitoring the system pressure on the suction, pressure or return side; Venting and sampling

Filtration Technology

Filter systems for the basic equipment of mobile and industrial hydraulic applications; full range of replacement filter elements

Diagnostics

Analog / digital components for monitoring the condition of hydraulic fluids (pressure, temperature, flow rate, rotational speed, fluid level); Contamination control

Hydraulic Accessories

Components for the construction of hydraulic reservoirs and power units for the mobile and industrial hydraulic sectors

Valves

Two-way and multi-way shut-off and flow control valves for the mobile and industrial hydraulic sectors

Flanges

Full range of SAE flanges and gear pump flanges



Cable Installation Systems for Wind Energy Applications

Flame-retardant materials
to international standards



Metal parts in various
Stainless Steel qualities



Picture: Zarges

Original STAUFF Wind Energy Clamps



Secure and orderly vertical installation of power cables in wind energy turbines
Modular design offers full flexibility in terms of quantity and alignment of the cables

Original STAUFF Wind Energy Clamps can be found in thousands of Wind Energy Turbines all over the world, and have been exclusively engineered according to the individual requirements in this particular market. They have already become known as a solution which allows power cables to be installed securely, simply and quickly with minimum use of tooling, thus reducing installation time and costs – from the main power connection in the bottom of the tower up to the nacelle itself.

Thanks to their modular design and the unique triangular shape of the internal contours, STAUFF Wind Energy Clamps are fully flexible with regards to quantity and alignment of individual or bundles of up to three power cables: By using additional inserts, they can also be used to fasten only two cables or lines with smaller external diameters.

Main Features

- Modular design: Suitable for single-level or multi-level (stacking) installation
- Clamp bodies and inserts manufactured from flame-retardant PPV0 thermoplastic material: Tested and V0 classified according to UL 94 (Vertical Burning Test)
- Metal hardware (such as threaded bolts, nuts, cover plates and other substructures) made of steel or stainless steel – selection of proper hardware subject to stringent testing at the STAUFF in-house laboratories considering the individual requirements (e.g. the dimensions, the overall weight and the insulation material of the cables in use)

Availability

STAUFF products are globally available through wholly-owned branches and distributors in all industrial countries. Please check www.stauff.com/contact for details or contact our sales team by email to wind@stauff.com.



UL PPV0 Material

In order to increase the preventive fire protection in Wind Energy Turbines, STAUFF Wind Energy Clamps are usually manufactured from flame-retardant PPV0 thermoplastic material, which has been tested and V0 classified according to UL 94 (Vertical Burning Test).

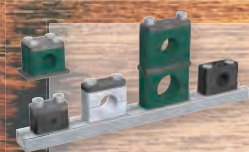
UL 94 is a test method of Underwriters Laboratories for the evaluation and classification of the flammability of plastic materials: A specimen is supported in a vertical position: A flame is applied for ten seconds to the bottom of the specimen and then removed until flaming stops. At this time the flame is re-applied for another ten seconds and then removed again.

V0 is the highest classification possible and means that flaming stops within ten seconds on a vertical specimen without dripping of flaming plastic particles.

Thus stability of the wind energy turbine is retained to the greatest extent possible in the event of a fire in the nacelle, as it cannot spread due to drops of burning material.



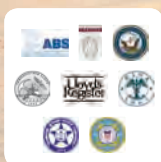
Picture: Zarges



DIN 3015 Clamps

Most economical solution available for quick and easy pipe, tube and hose installation
Environmental protection due to vibration-dampening and noise-reducing features

- Available in the Standard, Heavy and Twin Series – constructed according to DIN 3015
- Suitable for the most common metric and imperial diameters up to 450 mm / 17.72 in
- Single or multi-level (stacking) installation on weld plates or channel / mounting rails
- Clamp bodies manufactured from various thermoplastics, thermoplastic elastomers or aluminium – shock-absorbing and noise-dampening elastomer inserts available
- Flame-retardant materials according to various international fire protection standards
- Excellent UV, weathering and chemical resistance – even under extreme conditions
- Tested and approved by several independent certification organisations



ACT CLAMP anti-corrosion technology

Efficient prevention of crevice corrosion under pipe clamps on stainless steel pipework
Middle- and long-term cost savings due to extended service and maintenance intervals

- No accumulation of seawater between clamps and tubing
- Constructed according to DIN 3015 (Standard and Twin Series)
- Interchangeable and usable with all other standard STAUFF components
- Covering the most commonly used metric and imperial pipe diameters from 6 mm to 25,4 mm / 1/4 inch to 1 inch
- Compliant to Norsok Z-010, NACE SP0108-2008 and API RP 552
- Long-term field tested on a rig in the Dutch sector of the North Sea
- Test results independently assessed by Sheffield Hallam University

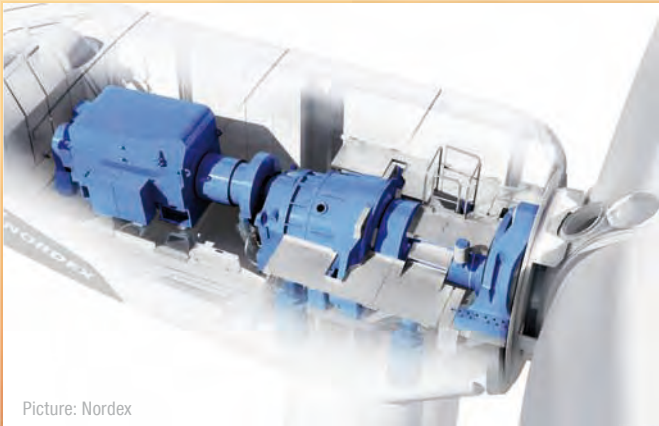


Special Clamps

Custom-designed clamping systems for pipes, tubes, hoses, cables and other components

- Designed and manufactured according to customers' requirements or based on own developments
- Machined and injection-moulded versions available, depending on materials, dimensions and quantities
- Made from plastics, thermoplastics (such as PP or PA), thermoplastic elastomers or non-ferrous metals
- Flame-retardant materials according to various international fire protection standards

Fluid Technology Components for Wind Energy Applications



Picture: Nordex

Hand-Held Hydraulic Testers

- Monitoring all relevant parameters in fluid power systems, including pressure, differential pressure, temperature, flow etc.
- Measuring and display of over 50 channels at the same time
- Integrated data storage for up to 1 billion measured values
- Remote monitoring and analysis using LAN and USB interfaces



Sensors and Switches

- Monitoring all relevant parameters in fluid power systems, including system pressure, temperature, flow and fluid level
- Sensors, switches, transmitters and display units available
- For permanent installations – designed for long-lasting use
- Various designs, sizes and connectors available



Replacement Filter Elements

- Qualified for various types of hydraulic and lubricating fluids
- Suitable for pressure, suction-line and return-line applications
- Equal in form, fit, function and performance, and fully interchangeable with the most common competitor products, including Donaldson, Hydac, Internomen, Mahle, Parker etc
- To be used as direct replacements for most OEM filter elements
- State-of-the-art filter media provides high levels of fluid cleanliness while maintaining low pressure drop characteristics
- Replacement elements specifically engineered for Wind Energy applications, e.g. bypass filter elements with two filtration stages and an integrated bypass valve for the oil-cooling circuit of General Electric GE 1.5 MW Series wind turbines



Tank Filler Breathers

- Designed to be used as filler ports for reservoirs, power units and other fluid containers, allowing them to breathe while protecting them from contamination found in harsh environments
- Various designs and sizes available in metal and plastic
- Full range of accessories including baskets, dipsticks and adaptors



Flanges

- 3000/6000PSI series according to ISO 6162-1/2 and SAE J 518 C
- Full range of single- and multi-part connectors up to DN 127 / 5 inch
- Safe and leak-free alternative to regular tube connectors
- Continuous pressure level of 400bar/5800PSI up to DN 51 / 2 inch
- Gear pump flanges for three-hole and four-hole assembly



Hydraulic Test Points / Hoses

- Leak-free connections into fluid power systems for monitoring the system pressure on the suction, pressure or return side
- To be used at full working pressure without machine downtimes
- Venting of fluid power systems
- Obtaining representative fluid samples

Analog / Digital Pressure Gauges

- Monitoring and ensuring the functioning of fluid power systems
- Panel / stem mount gauges with various connection types available
- Scales range from -1 ... 1000 bar / -14,5 ... 14500 PSI
- For permanent installations or to be used as portable devices
- Also available as part of pressure test kits including accessories



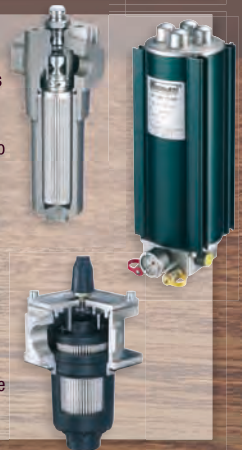
Laser Particle Counters

- Crucial part of any contamination control program
- Detecting the ISO cleanliness level of hydraulic media
- Suitable for phosphate ester and specific water-glycol fluids
- For permanent installations or to be used as portable devices
- Sampling units and moisture / temperature sensors available



Hydraulic Filter Housings

- Suitable for various types of hydraulic and lubricating fluids
- Medium- and high-pressure filters up to 420 bar / 6000 PSI
- In-line, tank-top and tank-integrated return-line filters up to 35 bar / 500 PSI made of plastics, aluminium and steel
- In-line and tank-top spin-on filter heads for suction-line and return-line applications up to 14 bar / 200 PSI
- Offline / bypass filters, also with water-absorbing spin-on pre-filter elements or integrated heating units
- Semi-automatically operating vacuum de-hydration units
- Mobile filter systems to be used as temporary offline filters and oil transfer units to support the preventive maintenance



Level Gauges

- Visual / visual-electrical fluid level indication in hydraulic tanks, also in conjunction with temperature sensors and switches
- Special designs and sizes up to nominal lengths of 950mm / 37.40 inch according to customers' requirements or based on own developments
- Low-temperature version for applications down to -40° C / -40° F



Desiccant Breathers

- Air breathing into the reservoir / gearbox is filtered and dehumidified
- Preventing fluid oxidation, reducing machine downtimes and costs
- Easy to retrofit on top of hydraulic reservoirs and gearboxes
- Drying agents gradually changing colour with increasing moisture
- No toxic or dangerous substances acc. to latest EC directives



Valves

- Two-way, three-way and four-way ball valves
- Block, forged or round body design in steel and stainless steel
- Threaded or flanged connections up to DN 125 / 5 inch
- Suitable for ultra high-pressure applications up to 800 bar / 14000 PSI
- Flow control valves to throttle and shut-off the flow of liquid media

