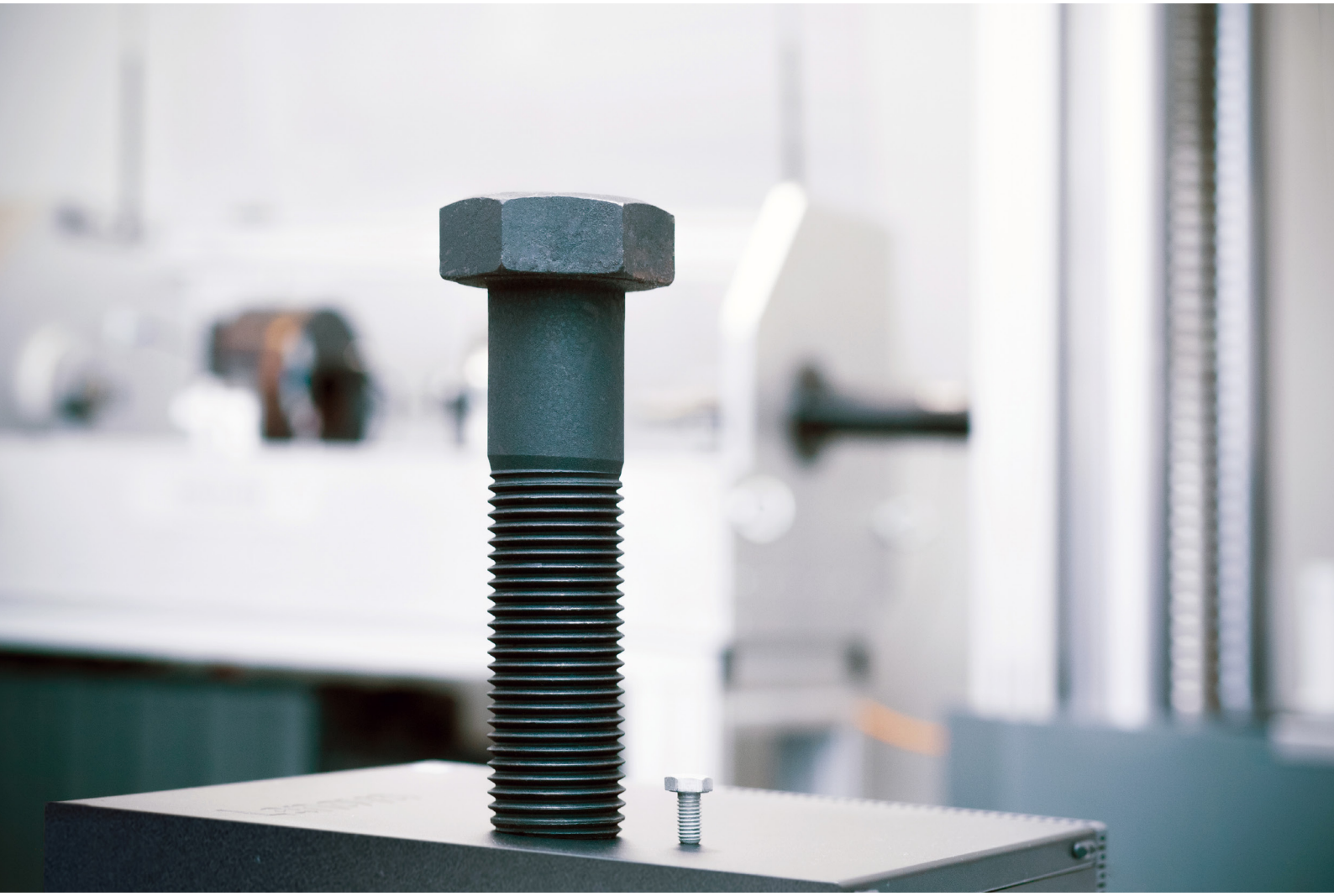
KISTLER

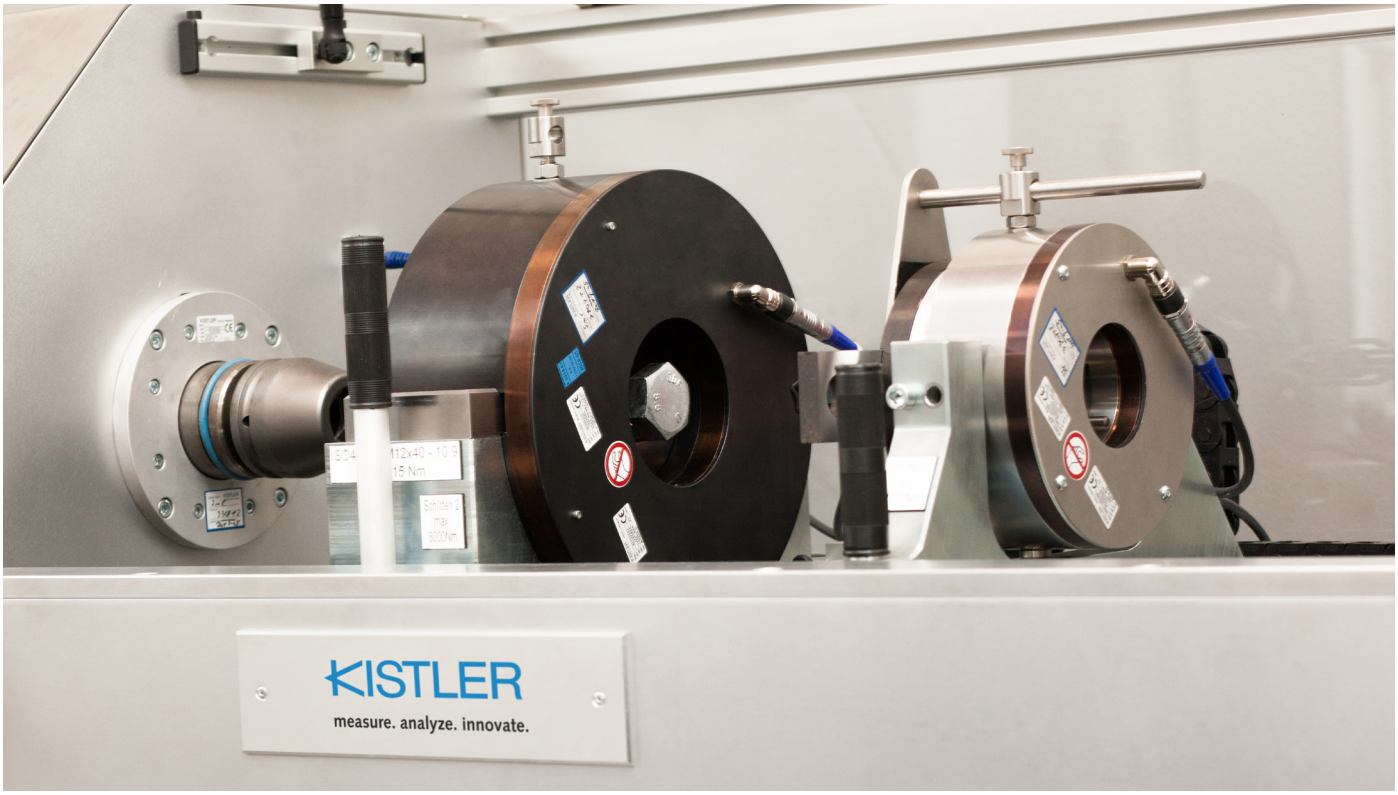
measure. analyze. innovate.



A diverse range of fasteners – all reliably under control

Fail-safe joints by REYHER thanks to Kistler's universal fastener test stand

REYHER®



Every Kistler Analyse system can be individually assembled and tailored to the customer's requirements – thanks to appropriate sensors, spindles and optional modules such as ultrasonic measurement or a vibration test stand.

REYHER aims to maintain its long tradition of professionalism in supplying and advising customers across many different industrial sectors – and to achieve its goal, this Hamburg-based company puts its trust in an Analyse system by Kistler. One particular benefit of the system: it can perform standard-compliant friction coefficient tests on fasteners of sizes up to M48, such as those often used in wind turbines.

If fasteners are what you need, you go to REYHER. For over 70 years, this company has supplied fasteners and fixing elements for threaded joints of all types from its base in Hamburg, North Germany. REYHER (or F. REYHER Nchfg. GmbH & Co. KG, to use the company's full name) operates as a wholesaler to supply over 11 000 customers across the globe from a range comprising 130 000 different articles. But that's not all: REYHER also advises customers on selecting suppliers, choosing coatings and generally on how to implement the most suitable threaded joint; aftercare and troubleshooting also feature in the company's portfolio.

Sound advice depends on analysis of friction coefficients

Frank Poggensee has been with REYHER for the last 14 years. As Head of Quality Technology, it is his responsibility to make sure that the characteristics of the company's fasteners are correct. "My personal background is in the automotive industry, which is traditionally the main driver of quality requirements. But wind power has also become an increasingly critical factor for REYHER in recent years," he explains. It is a fact that up to 11 tonnes of fasteners can be built into one single wind turbine plant. "This is an environment where exceptionally demanding requirements have to be met. Of course, safety is a critical priority in wind turbines – there's no telling what would happen if fasteners were to fail in one of these plants," Poggensee continues. REYHER is located in the vicinity of many wind turbine installations – another reason why the firm has focused increasingly on this technology and the relevant standards for threaded joints.

> "This system fully meets our expectations in every respect, and it helps us to reliably fulfill our customers' quality requirements – which are increasing all the time."
>
> Frank Poggensee, Head of Quality Technology at Reyher

Since Poggensee joined REYHER, the Product and Quality Management (PQM) department has grown from eight people to a team of 40. This is partly because the threaded joints segment has become far more complex than ever before. "More and more surfaces and coatings are available, and the service component is also growing: that involves offering recommendations and advice, providing support for our own products, and training the customers. And then, of course, we shouldn't overlook the issues of traceability and transparency," Poggensee points out. "It's increasingly desirable and necessary for customers to know how each fastener is designed, which tools are used, and which standards have to be observed." Wind turbine installations, for example, make use of high-strength preloadable bolt fittings. For these components, the relevant quality requirements have to be met with the help of special material inspections, testing procedures and production

Frank Poggensee, Head of Quality Technology at REYHER (left) talking with Olaf Schuhknecht, Sales Engineer at Kistler.

Thanks to its laboratory equipped with the new Analyse system from Kistler (left), REYHER can now carry out even more extensive testing to meet its customers' increased quality requirements.

processes – and end-to-end traceability of the production history is generally required as well.

This means that it must be possible to identify each individual bolt or screw. Documentation is needed for every step – from the starting materials and the machining processes in the individual production batches, all the way through to final delivery. If one of these fasteners should fail, it is possible to investigate how closely the failure is related to its production history.

REYHER's intention is to position itself appropriately in this segment so that it can reliably meet its customers' ever-increasing quality requirements. To achieve this objective, REYHER began operating an Analyse system from Kistler early in 2018. Friction coefficient tests can now be carried out far more efficiently in house – for fasteners up to class M48 such as threaded bolts, hexagon and hexagon socket bolts and screws, as well as high-strength preloadable (HV) fittings. "In the past, all we had was a mobile two-channel test system for fasteners up to M24. We were gradually reaching the limits in terms of capacity as well as quality," Poggensee recalls. "Thanks to the Analyse system from Kistler, we have improved our ability to meet our customers' requirements, so we can guarantee a higher level of quality." For example, REYHER can now carry out in-house testing of M48 bolts for the wind energy sector to ISO 16047, which was previously impossible.

An investment that pays dividends

The result: important customers rely on REYHER to a very large extent. "In the past, these fasteners had to be sent out of house for testing. That involves using various service providers, to avoid being entirely dependent on just one. And this was how we first came into contact with Kistler," Poggensee remembers. "However, a cost-effectiveness analysis showed that an investment in our own Kistler Analyse system would be worthwhile to cope with the continuously increasing scope and growing requirements." REYHER had already commissioned Kistler to carry out regular tests on fasteners beyond the scope of their own inhouse capabilities. Experience gained during this collaboration was positive, so the two companies entered into new discussions about the next step towards an inhouse solution.

Olaf Schuhknecht, Sales Engineer with Kistler, gives this explanation of the structure and characteristics of the new solution: "Every Analyse system is a three-channel measuring instrument that precisely determines the tightening torque, thread torque and preloading force of a threaded joint. Each system is individually designed to meet the customer's requirements. For instance, we can align the test stand either horizontally or vertically, so either very small or very large fasteners can be tested. This approach creates a customized solution precisely tailored to the specific requirements." Performance scope is expanded with add-on modules such as ultrasonic measurement or vibration units to allow even more accurate analyses as well as simulations of real loads.

Higher quality despite greater complexity

The Kistler Analyse system used at REYHER offers maximum torque of 8 000 Nm. Screws, bolts and nuts from M5 to M48 can be tested thanks to the extensive range of sensors deployed for torque/rotation angle, preloading force and thread torque. "Our torque/rotation angle sensors measure directly on the test object, so they are not subject to any falsification due to drive shaft torsion," Schuhknecht adds.

How satisfied is REYHER with the test stand? Poggensee has no doubts: "This system fully meets our expectations in every respect, and it helps us to reliably fulfill our customers' quality requirements – which are increasing all the time." He continues: "We looked at several offers, but many factors persuaded us to opt for Kistler: they provided the range of sizes we needed up to M48, and their reputation with suppliers is good (as we know from the audits we regularly conduct for our customers). Our existing business relationship and the availability of service were also key advantages."

With a workforce that now numbers over 700, REYHER has yet again experienced significant growth in recent years. In addition to its Hamburg facility, the company now has a second base with 40 employees in Shanghai and another location in Taiwan. Looking ahead, therefore, it is quite possible that more Kistler systems will be deployed for fastening technology. "It goes without saying that the East Asian market is a lucrative one for us. China has made up a lot of ground in the last few years – and that also applies to quality awareness and the investments that go with it. We consider that we are well placed to meet this challenge, and we shall be staying in close contact with Kistler."

Find out more about our applications:
www.kistler.com/applications

Kistler Group
Eulachstrasse 22
8408 Winterthur
Switzerland
Tel. +41 52 224 11 11

Find your local contact at
www.kistler.com

KISTLER
measure. analyze. innovate.