

Reliable and
reproducible
results



Versatile automated testing for series parts

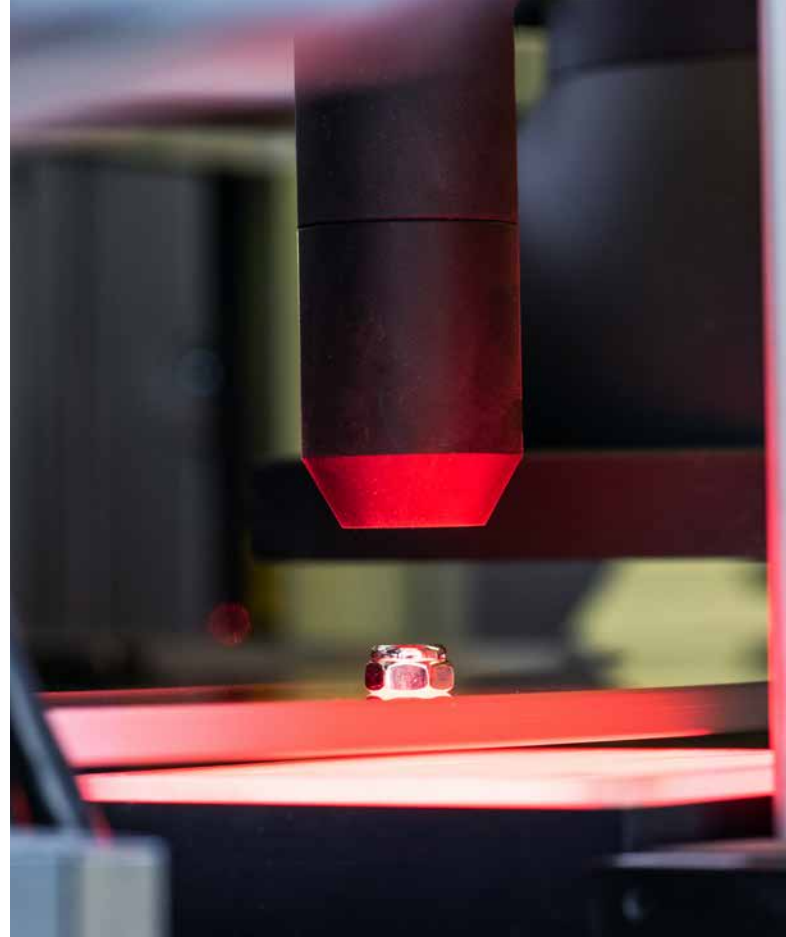
pro-sort GmbH relies on automatic testing and sorting machines
from Vester

Cutting-edge optoelectronic technology is deployed to test series parts at pro-sort GmbH, the German sorting and measurement specialist. The goals: guaranteed product quality and improvements to processes for the firm's customers. The key to achieving these objectives: automatic testing and sorting machines from Vester, a Kistler Group company. Day after day, millions of parts are accurately measured and sorted on the Vester systems in use here.

For a very long time, the task of assessing whether a manufactured part met the quality standards was carried out exclusively by human beings. But many typical mass-produced parts have dimensions of only a few centimeters or even millimeters. This is why such a repetitive task is increasingly performed by automatic testing machines, with high-performance camera systems to deliver results that are reliable and – most importantly – reproducible.

Jürgen Schwarz is the founder and CEO of pro-sort GmbH, based at Kelttern-Dietlingen in Baden (Germany). Virtually from day one, he has played a key role in developing the company's technology: "When I saw the first industrial image processing systems reaching the market in the 1990s, I realized that this was clearly a technology of the future. So I drew up a plan to establish my own business, with the focus on complex testing tasks." pro-sort now has a 14-strong team of employees, and work on an extension to the company's building is set to start by the end of this year. "At present, we certainly can't complain that our capacity is under-utilized. Quality standards have risen in recent years, and suppliers have to do more to protect themselves against complaints that lead to claims. When production problems are getting too big to handle – that's when people come to pro-sort," Schwarz explains.

pro-sort's services include measurement, sorting, documentation and packaging of screws, bolts, pins and formed or punched parts for customers from all over Europe, ranging from automotive suppliers to electronics manufacturers and medical technology companies. "We're even testing products from China nowadays! But the critical factors are always the same: gaining the customers' trust, and – above all – never disappointing them. Each and every step is accurately documented. And with 380 to 400 million parts per year, that means over one million parts every day," Schwarz points out. One look at the hall where the machines are



Thanks to reflected light testing with high-performing cameras, even very small serial parts are measured precisely

housed shows how this huge output is achieved: everything looks very clean and tidy. The layout creates a very clear visual impression, and this is what ensures a reliable material flow. This isn't just a matter of in-house requirements, as Schwarz explains: "Quite a few customers insist on the possibility of regular on-site audits before they will work with us."

Feed, measurement and sorting: all fully automated

To handle such huge quantities efficiently and without errors, pro-sort opts for fully automated test cells from Vester Elektronik GmbH, a member of the Kistler Group since 2017. pro-sort's machine hall currently contains 16 Vester test systems of various designs. They meet customers' differing requirements for end-of-line testing of their series parts, which include turned, punched, pressed and plastic components. Alongside dimensional inspections, the Vester machines carry out structural testing as well as crack and surface tests. Depending on the type of part and the assignment, the testing equipment can include appropriate feed systems, sorters of various types for good and bad parts, and special camera processes.



"Our tests help customers to improve their processes and redefine tolerances, enhance their product quality or boost their efficiency."

Jürgen Schwarz, Founder and CEO

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Vester's test automation systems stand out due to their precision at high throughputs



Separating parts with a rotary plate: Dedicated machine concepts by Vester deliver the wanted test results

"Precise measurements using transmitted-light inspection are now required as standard," according to Michael Reinkensmeier, Head of the Measurement and Sorting Technology Department at pro-sort. "Incident-light inspection, as it's sometimes known, also reveals changes to the material such as the formation of cracks that could never be detected with the naked eye in many cases." Reinkensmeier's overall responsibility for plant and equipment includes planning and programming for the Vester automatic testing and sorting systems to ensure optimum capacity utilization and the best possible test results. "These machines can be flexibly adjusted to meet varying requirements, with no need for lengthy changeover times. Operation is intuitive and comfortable – and that's yet another reason why we've almost always opted for Vester throughout the years," Reinkensmeier emphasizes. Many successful system types in Vester's Videocheck series are used at pro-sort: examples include the VVC-120, based on the inclined-plane testing principle, and the VVC 821 with rotary plate architecture (see the information box).

Versatile automated testing for series parts

Vester Elektronik GmbH offers a modular portfolio of automated testing and sorting systems that can be configured individually to provide optimum solutions for every possible testing assignment. These Videocheck system types are in operation at pro-sort:

- **VVC 120:** universal automatic testing and sorting machine for series parts with positionally stable feed (vertical or horizontal). Thanks to retrofits, the VVC100 and 110 predecessor models are still in operation as well.
- **VVC 821:** continuous rotary plate system for complex dimensional and surface testing of mass-produced parts. A modernised VVC 811 predecessor model is also in use at pro-sort.

Fast, accurate, flexible – and honest

What are the particular challenges facing contract sorting providers such as pro-sort, now and in the future? "When it comes to processing complaints, fast response times are needed. For instance, if a major automobile manufacturer's production line is at a standstill, suppliers contact us so that we can either locate the fault or provide them with arguments to fight off compensation claims. What's more, many of the parts we test are used in safety-critical applications. Car safety belts are one example. So neither the responsibility nor the time pressure should be underestimated," Schwarz stresses. Another factor that shouldn't be underestimated is the outlay on project planning. The aim here is to work with the customer to define exactly what is to be tested, and how. In this context, honesty is an absolutely essential element of the working relationship. "If what our customers want isn't possible, we tell them so very clearly. This is why we carry out precise feasibility analyses in advance – to determine the capabilities of the measuring equipment, for instance," Schwarz adds. "Then we collaborate with the customer to define precise testing criteria as the basis for sorting into good and bad parts. We benefit greatly from our close working relationship with Vester when we have to handle difficult assignments and develop suitable testing processes for them," Reinkensmeier notes.

In fact, these test procedures often identify characteristics or faults on parts that were not even noticed by the client who produced them. "So our tests help customers to improve their processes and redefine tolerances, enhance their product quality or boost their efficiency," Schwarz explains. "On the basis of precisely documented test results, the customer receives substantiated feedback on any aspects of production that are not running optimally. If our customer can then go to the end customer and show him specifically how he has rectified a fault or improved a product – then we know that pro-sort has done its job properly. And Vester's systems create the exactly conditions we need to achieve successes like that."



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