

20 Years of O-Ring Prüflabor Richter – Competence Center for Seals is Well Received by Users and Manufacturers

In 1996 Bernhard Richter founded the O-Ring Prüflabor Richter in Grossbottwar near Ludwigsburg. It started with only two employees, but over the years the laboratory has grown steadily. In 2002, the company moved into its own building, which was considerably extended in 2015.

Today, 25 employees perform tests not only on O-rings, but also on numerous other seals and technical molded parts of various geometries and materials. In addition, this testing laboratory has become internationally renowned for damage analyses, expert seminars and consultation on sealing issues.

In 1984, after completing his studies in mechanical engineering at the University of Stuttgart, Bernhard Richter worked until 1995 at Parker Hannifin, O-Ring Division, eventually as Head of Applications Technology, where he gained significant practical experience.

It was during a rainy vacation in 1993 at the North Sea when Mr. Richter got into conversation with a management consultant. Shortly afterwards, the idea of founding his own laboratory, the O-Ring Prüflabor Richter, was conceived.

Since its foundation, the company name "O-Ring Prüflabor Richter" has remained unchanged since its foundation, but the legal form changed to a GmbH in 2011. The O-ring is certainly the major field of competence in the laboratory, even though many other fields have been added over the years. Very few people in the world have dealt as intensively with O-ring application matters as Bernhard Richter has. As simple as the subject of O-rings sounds, it can be very complicated in detail as the numerous publications of the company founder illustrate.

While in the first years mostly basic incoming goods inspections (e.g. hardness, density, dimensional checks and compression set) were carried out for sanitary applications and O-rings in gas springs, more and more fields were added over the years.

Initially, customers increasingly asked for thermal tests to provide information about the material composition (TGA) before tensile tests and fuel and oil deposits were added later on.

Today, the O-Ring Prüflabor Richter tests elastomers used in the automotive and mechanical engineering industries according to all common specifications. Their chemical analytical area is also well established (e.g. DSC, TGA, FTIR; Pyrolysis GC-MS).

The client database of the testing laboratory includes most industrial sectors (In 2016: more than 2000 industrial clients). In fact, you can be quite confident that several times a day you use gaskets that have been tested in the O-Ring Prüflabor Richter, whether driving a car, using sanitary facilities, turning on your radiators or drawing a cool draught beer after work.

In the field of seal damage analysis, the laboratory leads in specialization. Though seal damage are incidents every manufacturer and user of seals wants to avoid, unexpected issues do occur in certain applications. Specifically, in these cases, the O-Ring Prüflabor Richter offers quick and competent support to find innovative solutions to any occurring problems. Since 1999, more than 1900 cases of damage have been investigated, whereby no other laboratory is known to compete on this scale.

This expertise is also continuously incorporated into the practice-related user seminars offered, which have been carried out since 1997 and have gained great popularity. Currently, nine public seminars and around 20 in-house seminars are held annually. Particularly in-house seminars are precisely tailored to customer needs and requirements.

The practical relevance of the laboratory is probably one of its greatest strengths. From the very beginning, Mr. Richter was fascinated by the interdisciplinary work between chemistry and mechanical engineering. At his first employer, Parker in Pleidelsheim, he was able to get to know all the important areas in a modest size factory (250 employees), such as materials development, testing, production and application technology, while always considering the cost factors. In addition, his passion and great interest in solving user problems practically added to this. He shares this attitude with his employees on a daily basis.

Additionally, Mr. Richter is quite gifted in dismantling the "technical jargon" of chemists concerning user problems applicable. Though he possesses a scientific approach, Mr. Richter creates practical and accessible work. This is also exemplified within many technical essays on the laboratory's website (www.o-ring-prueflabor.de), which explain test methods and sealing problems comprehensively, but nevertheless in depth for the interested reader in the manner of a technical book. Behind these technical articles are no hidden marketing interests of a certain product, but instead serve to support clerical employees which can often change in companies today. In addition, the consulting team has continued to expand, including two experienced elastomer experts (Mr. Sprenger and Mr. Blobner), a materials scientist (Dr. Heinze) and a materials tester (Mr. Haller), which are available to customers. Over the years, the test procedures have been consistently optimized and improved. An important milestone was the accreditation according to DIN EN ISO IEC 17025 in 2002. Due to these continuous improvements of the processes and many years of experience, the O-Ring Prüflabor Richter offers its customers quality that is globally competitive.

The Richter family was determined to stay in the region right from the start. The proximity to many industrial companies and automobile manufacturers makes intensive customer relationships possible. This commitment to the location has been evident by the major expansion of their company building in 2015, which included a particularly notable addition of the newly designed furnace chamber with decentralized, adjustable air extraction per individual furnace and heat recovery in winter. This enables the storage of materials that can be periodically energy-intensive to be carried out in a more resource-saving manner.

Employees are the most important and valuable part of a company. Mutual respect and appreciation for the hard work of each individual employee is particularly important to the company founder. His Christian faith is reflected within these values. Many years of company affiliations and friendships among Mr. Richter and his employees are evidence of a healthy working atmosphere. While in the first years almost all technical inquiries were performed by the company founder, this area is now distributed - as already described above - to several competent colleagues who continue Mr. Richter's valued and high-quality consultation. In addition, a service team of six employees is available to customers to assist with the processing of orders.

In summary, it can be concluded that the O-Ring Prüflabor Richter is well positioned for future challenges.



Figure 1: Building extension 2015



Figure 2: New furnace room



Figure 3: Company founder Bernhard Richter



Figure 4: New in the testing laboratory since 2015 - ozone testing



Figure 5: New in the testing laboratory 2015 pyrolysis GC-MS analysis