

CONTACT:

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**O RING
PRÜFLABOR
RICHTER**

THE O-RING PRÜFLABOR RICHTER:

The O-Ring Prüflabor Richter specializes in services designed to ensure a safe use of elastomer seals and technical moldings and has been accredited according to DIN EN ISO/IEC 17025 since 2002. In addition to numerous services, we also offer the performance of failure analyses, which we have carried out on more than 2000 cases to date.

Our gained experience is shared in seminars, in-house seminars and consultations. Since the laboratory was founded in 1996, more than 2000 companies have already taken advantage of these services.

INSTRUCTOR DIPL-ING. BERNHARD RICHTER:

After he graduated with a degree in mechanical engineering from the University of Stuttgart, Bernhard Richter was employed by one of the world's leading sealing manufacturers for more than ten years, seven of which were spent as Head of Applications Engineering of the European O-Ring Division. Soon after, he founded the O-Ring Prüflabor Richter in 1996 and ever since has passed on his knowledge in seminars throughout the year.

His ability to comprehensively understand complex correlations is particularly appreciated. Furthermore, he is not afraid to provide the user with clear decision criteria. He has been an expert in the ISO Working Group on O-Ring Standardization (ISO 3601) for more than ten years and is well known for his numerous publications.

IN-HOUSE SEMINARS:

We also offer individual designed seminars in English according to the needs of our customers. For more information feel free to contact us at info@o-ring-prueflabor.de.

Seminar

O-RING SEALS: DIMENSIONING, OPERATIONAL LIMITS AND APPLICATIONS



ABOUT THIS SEMINAR

In this seminar we will not only cover how O-ring installation spaces should be designed, but also why this should be the case and how to evaluate deviations. In addition, low and high temperature limits of O-rings as well as realistic service life expectations are discussed. Finally, we will provide many important application advices for different applications.

REGISTRATION AND LOCATION:

Please contact us for further information. We offer seminars at our facility and at preferred locations of our customers.
Email: info@o-ring-prueflabor.de

DAY 1 – PROGRAM

09:30 AM INTRODUCTION

09:45 AM DESIGN REQUIREMENTS FOR O-RING SEALS

- Principle of force shunt, comparison O-ring/flat seals
- Technical tightness, influencing factors on the leak rate
- Constructive groove design, tolerances, compressing, surface quality
- Avoidance of assembly damage, important assembly instructions
- Special grooving shapes for custom specific applications (vacuum, high pressure, sterile process engineering)

12:45 AM LUNCH BREAK

02:00 PM PRACTICAL EXERCISES

- Design of O-ring grooves

03:00 PM KAFFEEPAUSE

03:15 PM TEMPERATURE OPERATION LIMITS OF O-RINGS

- Low temperature behavior of elastomer materials
- Various cold test methods
- High and low temperature limits of O-rings
- Compound-related influencing variables of NBR, HNBR, EPDM, FKM, CR, VMQ, FVMQ and FFKM materials

05:15 PM DISCUSSIONS

07:00 PM EXCHANGE OF EXPERIENCES IN A CASUAL SETTING

DAY 2 – PROGRAM

08:30 AM RESISTANCE TESTS

- Selection based on technical literature
- Practical exercises, examples

09:00 AM LONG-TERM PERFORMANCE OF O-RING SEALS

- Permissible storage times
- Straight service life according to Arrhenius
- Influencing factors on the service life of O-rings
- Evaluation of long-term tests on NBR, HNBR, FKM and EPDM O-rings
- Published long-term studies on elastomers

10:15 AM COFFEE BREAK

10:30 AM PROPERTIES FROM A TO Z

- Abrasion, aging, coefficient of expansion, compression set, resistance to hydraulic fluids
- Tightness, electrical properties, gas tightness, resistance against hot steam, coatings
- Corrosion, plastic compatibility, swelling, tear strength
- Radioactive radiation, deformation forces, FEA parameters

12:30 AM LUNCH BREAK

02:00 PM O-RINGS IN AUTOMOTIVE VEHICLES

- Comparison and overview of the polymers used
- Swelling and permeation behavior in fuels
- Special FKM materials with improved low-temperature flexibility
- Behavior in engine and transmission oils, cooling water, refrigerants, blow-by gases and AdBlue

03:30 PM FINAL DISCUSSION (end approx. 3:45 PM)