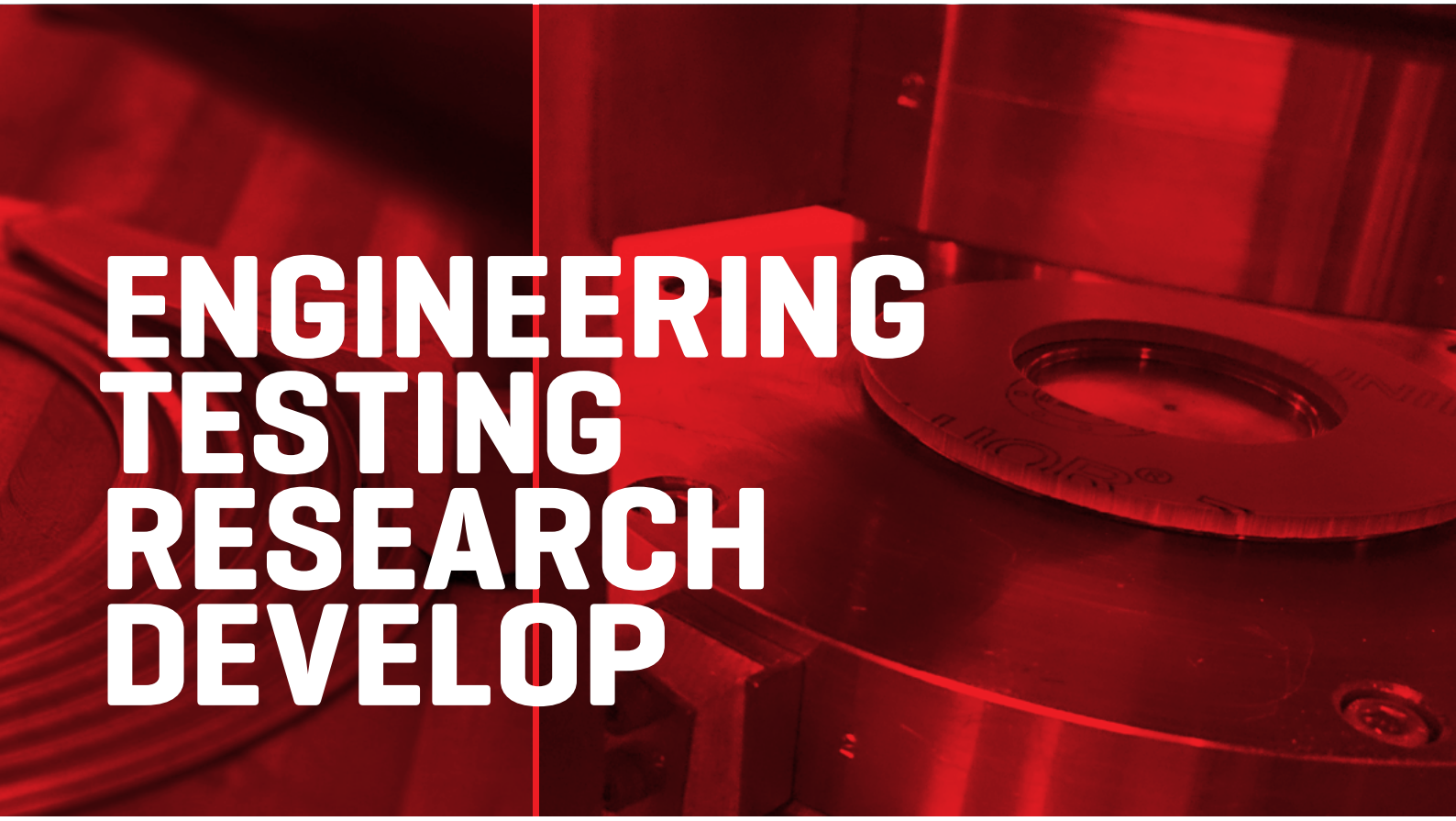
ENGINEERING
TESTING
RESEARCH
DEVELOP

QUALITY MANAGEMENT & TEST ENGINEERING

Quality and sustainability are our priorities; the development of new technologies, innovative sealing elements and optimized materials are our passion and the main objective of our company. This also means that our focus is on implementing the continually increasing requirements for emission reduction and making them accessible as “Best Available Technologies”. It is through the consistent implementation of our quality management, modern manufacturing processes, high quality of our products and the development and implementation of custom-fit and precise solutions for our customers that we are able to strive for excellence.

To meet these challenges, we have our own in-house research and development department, which is set-up with state-of-the-art equipment and managed with the utmost care by our own engineers. We pursue R&D and quality management in a way that is forward-looking, purposeful and solution-oriented; as a product-related service it is an essential part of our technical customer support. The fact that we take this task seriously is evidenced by our numerous product innovations, patents and industrial property rights, international certificates and approvals.

GASKETS | TEMES FL.AI1 [„ALL IN ONE“]

TEMES fl.ai1 is a test rig with a modular structure and a servo-controlled hydraulic press. Depending on the type of test, various components can be used - cooling, insulation and heating plates - although various sealing strips can also be installed for investigating different gasket geometries.

TECHNICAL DATA

- Pressure: Max. 160 bar
- Temperature: Max. 600°C
- Medium: helium [He] or nitrogen [N2]
- Force: Max. 1000 kN
- Standard test geometry: DN40/PN40
- Outer diameter of the gasket: Max. 170 mm

TESTING OPTIONS

- Compression tests
- Modulus tests [e-modul tests]
- Creep/relaxation tests
- Leakage tests

TEST STANDARDS AND GUIDELINES

- DIN EN 13555
- DIN 28090-1
- DIN 28090-2
- DIN 3535
- DIN 52913
- VDI 2440
- Individual tests possible

TA LUFT | TEMES TA.LUFT

TEMES ta.luft analyses gaskets with respect to their high quality in connection to TA Luft. Here the sealing behaviour is determined after a previous exposure to temperature, as required in the VDI Guidelines 2440 and 2200. The test bed has been designed for component tests in real flange connections.

TECHNICAL DATA
- Temperature: Max. 400°C
- Medium: helium [He]
- Standard test geometry: DN40/PN40

TESTING OPTIONS
- Leakage tests

TEST STANDARDS AND GUIDELINES
VDI 2440/2200

VALVES | TEMES VALVE.TEQ

TEMES valve.teq checks the tightness and function of the spindle seals and casing cover gaskets of valves. The focus is on recording the friction forces during spindle movements and determining the sealing properties of the sealing elements.

TECHNICAL DATA
- Pressure: Max. 200 bar
- Temperature: Max. 400°C
- Medium: helium [He] or nitrogen [N2]
- Clamping force: Max. 1300 kN
- Drive: Max. 120 Nm
- Valve size: Max. DN150/PN250 or DN250/PN25

TESTING OPTIONS
- Classification of shut-off and control valves
- Leakage tests
- Friction experiments

TEST STANDARDS AND GUIDELINES
- DIN EN ISO 15848-1
- VDI 2440
- Individual tests possible

PACKINGS | TEMES PACKINGS MODULE

The TEMES packing module enables the determination of the deformation and sealing properties of packing glands.

TECHNICAL DATA
- Pressure: Max. 200 bar
- Temperature: Max. 400°C
- Spindle force: 50 kN
- Bolt force: +/- 50 kN
- Surface pressure: 65 MPa
- Spindle stroke: Max. 60 mm
- Packing geometry: 56 x 40 mm
- Packing height: Max. 100 mm

TESTING OPTIONS
- Parameter identification
- Determination of deflection factors

TEST STANDARDS AND GUIDELINES
- VDI 2440
- Individual tests possible

THERMO-GRAVIMETRIC ANALYSES [TGA] | LECO TGA 701

Thermogravimetry [TG] is an analytical method in which the change in mass of a sample is measured as a function of the temperature and time. That way it is possible to determine the moisture and ash in coal and coke samples. Other possible uses include determination of the oxidation resistance of graphite and mica materials, the filler content of plastics and the loss on ignition in cement samples.

TECHNISCHE DATEN
- Sample weight: Max. 5 g
- Number of samples: Max. 19/ measurement [+1 reference sample]
- Weighing accuracy: 0.0001 g
- Oven temperature: Max. 1000°C
- Stoke rate: Max. 50 K/min
- Oven atmosphere: compressed air I nitrogen I oxygen
- Gas flow rates: 3.5 l/min to 10 l/min [adjustable in 5 steps]

TESTING OPTIONS
- Determination of the moisture
- Determination of the ash content
- Determination of the oxidation loss
- Determination of the filler content

TEST STANDARDS AND GUIDELINES
- DIN 28090-2
- MESC SPE 85/203
- DIN 51903
- DIN EN ISO 11358
- pro-K Fluoropolymer group technical data sheet 04
- Individual tests possible

LABORATORY SPECTROMETER | SPECTROMAXX

The laboratory spectrometer SPECTROMAXX is used to analyse the concentration of chemical elements in metals. During the test, samplematerial is vaporised by a spark discharge. In this process the liberated atoms and ions are innervated, as a result of which light is emitted. This emitted light is then directed into the optical systems and measured with the help of light-sensitive electronic detectors (CCD technology). After conversion into concentrations, a comparison with the calibration data stored in the testing device is performed.

TECHNICAL DATA

- Recommended operating temperature: 18°C to 28°C
- Recommended humidity: 20% to 80%
- Argon inlet pressure: 5 to 7 bar
- Argon quality: 5.0 (99.999% Ar)

TESTING OPTIONS

- Metal analysis for incoming and outgoing goods inspection
- Fe, Ni, Cu, Al, Ti and corresponding alloys

DIGITAL MICROSCOPE | KEYENCE VHX-5000

The digital microscope VHX-5000 made by Keyence enables the quick and easy recording of an enlarged images. The intuitive operation and numerous options for recording and evaluating images increase the usefulness in the areas of quality management and development.

TECHNICAL DATA

- Image pick-up element: 1600 x 1200 pixels
- Image frequency: 50 images/s
- Magnification: 250 to 2500
- Light source: LED
- Photography: HDR (High Dynamic Range)
- Measurement: 2D & 3D

TESTING OPTIONS

- Profile analysis
- Material analysis

HARDNESS TESTER

Our hardness tester facilitates the determination of the hardness of metals of all kinds. Depending on the method, a carbide ball (Brinell), a diamond pyramid (Vickers), a diamond cone or a steel ball (Rockwell) is pressed into the sample using a pre-defined force, and subsequently the diameter (Brinell), the diagonal (Vickers) or the depth of penetration (Rockwell) of the generated impression is measured.

TECHNICAL DATA

- Compressive force (Brinell): 15,625 kp to 250 kp
- Compressive force (Vickers): 5 kp to 120 kp
- Compressive force (Rockwell): 15 kp to 150 kp
- Ball diameter (Brinell): 2.5 mm to 5 mm

TESTING OPTIONS

- Brinell hardness: HB
- Vickers hardness: HV
- Rockwell hardness: A (HRA)
- Rockwell hardness: B (HRB)
- Rockwell hardness: C (HRC)
- Rockwell hardness: N (HRN)
- Rockwell hardness: T (HRT)

TEST STANDARDS AND GUIDELINES

- DIN EN ISO 6506 (Brinell)
- DIN EN ISO 6507 (Vickers)
- DIN EN ISO 6508 (Rockwell)

LABORATORY OVEN | CARBOLITE HTMA

The Carbolite HTMA is a gas-tight high-temperature drying oven (up to 600°C) for use in production, testing and development processes. Through the use of the digital PID controller E301, desired temperature profiles under atmospheric conditions or an inert gas atmosphere can be executed precisely.

TECHNICAL DATA

- Temperature: Max. 600°C
- Chamber volume: 227 l
- Chamber size: 610 x 610 x 610 mm
- Programming: Digital PID controller
- 3 flow meters with needle valve for N2

TESTING OPTIONS

- Outplacement of mounted flange connections
- Sintering of various materials

REINRAUMANLAGE | DIN EN ISO 14644, PURITY CLASS 7

Our in-house clean room facility allows the implementation of targeted measures to eliminate or minimize the harmful influence of contaminants. This is of particular interest to ensure quality risk management in areas with high hazard potential, such as pure oxygen applications and food and drug operations.
Designed in accordance with DIN EN ISO 14644, air cleanliness classification 7, the facility is equipped with a personnel airlock, including a changing area, a product airlock, a test room with a fume cupboard and UV/white light system, and a separate room for individual packaging processes, cutting and storage.

ADDITIONAL TEST TECHNOLOGY

- Module for individual leakage tests (up to 15 bar) on the real flange
- Density balance
- Contour recorder
- 3D coordinate measuring table
- Tensile/pressure testing machine