bareiss

THE WORLD OF MATERIAL TESTING.



1ST EDITION Bareiss Magazine



FOOD Testing devices for the strength analysis on Food. PHARMA Determination of hardness and strength on flexible materials.

PLASTIC AND ELASTOMERS Test equipment for the characterization of elastomers and plastics.



IMPRESSUM

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Welcome!

Bareiss manufactures measuring devices that influence the making of finished products that are used in our everyday life. Just to provide you with a few examples, did you know that the comfort of a contact lens in your eyes or that the grip and comfort of your car's steering wheel were developed with the help of our instruments? We also make sure that the cosmetics you apply to your skin or the toothbrush you use to give you a healthy radiant smile, are reliable and safe to use.

Our magazine offers you an insight into our Company values, commitments, and traditions. Since 2017 as the third generation of owners at the Bareiss Company, we continue to lead us into the future as our Grandfather Heinrich Bareiss did when he founded the business. We try to combine tradition and modernity, because his values and ambition for perfection is what motivates us to this day. We are proud to embrace the responsibilities that come with being the third generation and pledge to continuously work on advancing this company worldwide.

quality, innovation, and standards in the field of measurement technology.

K. Shu O. Wick

Katrin Shen





The Bareiss name stands for the highest

Oliver Wirth

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ELASTOMERE



WE ARE THE MEASUREMENT SPECIALISTS.







IT ALL STARTED IN 1954, WITH A TARGETED VISION AND A GREAT IDEA. THE COMPANY WAS FOUND-ED IN UPPER SWABIA, GERMANY, MORE PRECISELY IN THE HISTORIC HERRENGASSE IN OBERDISCHINGEN, MALEFIZSCHENK.

Our company founder Heinrich Bareiss developed his vision to produce mechanical hardness testers and that is how Bareiss Prüfgerätebau GmbH came into We are proud to say that in the last being.

THE FORMER COURT FORGE OF THE A lot has happened since then. The company has gone through three expansions when it was handed over twice to the next generation. We established subsidiaries worldwide, hired, and trained employees, developed product innovations and invented patents. Today, as in the past, we develop, produce, and sell high-quality testing devices for hardness measurement on rubber, plastics, and



flexible materials, for the pharmaceutical and food industries worldwide.

6 decades, we have played a key role in shaping the history of elastomer testing and this achievement is in part the reason our name has worldwide recognition.

We are constantly striving for perfection with our customers best interest in mind. Our expansion of the years has brought us to a state of the art production facility, where we continue to look towards the future with a clear vision in mind.

WE HAVE EXPERIENCE.

For over 65 years, Bareiss has shaped the development of hardness testing on plastics and flexible materials, with innovation and progress. Our Evergreen HP is built almost unchanged from the original model developed in 1954. With over 200,000 units sold worldwide, it is the most widely used hardness tester of all. Our customer's requirements help us discover more and more solutions, whether these are test stands, universal testing devices with timing control and safety stops, or special devices for the pharmaceutical and food industries. We are driven by your needs and technical progress.

WE STRIVE FOR PERFECTION.

Certified quality is an integral part of our company philosophy. The enormous quality of our products and services, as well as earning the highest possible satisfaction from our customers, plays a decisive role in how we do business. Bareiss offers you not only the top quality metrological instruments, we also assure your instruments can stay accurate and functional by receiving our regular calibration and maintenance services. As calibration laboratory accredited by the german accreditation body DAkkS (DIN EN ISO | IEC 17025: 2018) for the measurement category of hardness, we undertake calibrations on all Shore and IRHD devices, within the scope of measuring equipment monitoring, and create the corresponding calibration certificates. Moreover, all processes and activities, decisive for quality and safety, are planned, controlled, and monitored in accordance with DIN EN ISO 9001: 2015.

WE ARE BAREISS.

Becoming a world market leader is only possible with the best employees. To stand your ground in the global competition, you must invest in your own future. The qualification of our employees is just as important to us as the education of our own offspring. After careful production and quality control, our products are exported all over the world. They all have one thing in common: they come from our company headquarters, in the historic town center, on the Upper Swabian Barockstraße. We remain true to ourselves.





Oliver Wirth Managing Director and Partner | Head of Engineering

WE ARE LOOKING TOWARDS THE FUTURE.

Success means moving forward for us. With courage and our pursuit of perfection, in 2017, Katrin Shen and Oliver Wirth entered the family business as the third generation bringing with them the experience required to pursue new ideas and vision. To better serve the global markets, Bareiss has expanded its trading platform with offices in Hong Kong (2011), Shanghai (2012), USA (2018), Taiwan (2020) and Canada (2021). The tranquil Oberdischingen is also undergoing modernization: in 2019, a state-of-the-art production building was built, with a surface of 3,500 square meters. It offered significantly more space for the production of precise testing devices with sustainable and technically innovative designs.





"For many of our customer, we are not just a supplier, but a valued partner and consultant, on everything related to hardness testing – I am proud of that! "

Katrin Shen Managing Director and Partner | Head of Sales and Marketing

Where everything started in



Heinrich Bareiß founded the company with focus on the production of mechanical hardness testers.

WE FULFILL YOUR WISHES.

We adapt our services to your wishes and the requirements of your tasks. We look at every test problem as a real challenge and at every task as a new opportunity. Within our team of highly qualified employees, every request is analyzed in a competent manner. Then, the best and most practicable solution is implemented. If you expect a one-source solutions from your partner, our high level of vertical integration will definitely convince you.





◀ Heinrich Bareiß on the right and Peter Strobel

2012 We opened our branch in Shanghai, China.

2013 Our company founder Heinrich Bareiß died in December at the age of 88. Since his company was founded in 1954, he has been and still is an invaluable role model for us, with his visions, ideas and determination.

Bareiss launched the HDA- automatic hardness- and density testing without operators influence. At the same time we celebrated the 20th anniversary of our ISO 17025 laboratory.

1961

The first stand, the BS 61, was released onto the market. Today, it is still made in almost the same way.

Bareiss introduces a universal testing device with a timing control and a safety stop feature. This patented device was developed especially for concave and convex materials, according to Shore A, B, O and D. Two years later, its measuring range was extended once again, to IRHD micro, normal and soft.

> Peter Strobel initiated the accreditation of Bareiss as the first official DKD calibration laboratory in Germany according to DIN EN 45001 for calibrations of the measurement category of hardness, according to Shore DIN 53505 and

Bareiss introduced the new digi test device, the most flexible and state of the art hardness tester worldwide. This impressive modular fully automatic tester offers measuring units for the entire Shore and IRHD ranges.



1993 Brigitte Wirth and Peter Strobel were appointed managing directors of the 2nd generation.

1994 The U72/94A test device is manufactured as a further development of the U72/80E with an automatic probing system for IRHD.

1997 We developed the testing device IRHD Micro Compact with a patented start-up system and handwheel.

The handheld hardness tester HPE II set new standards. The HPE II transmitted the measured values wirelessly to a computer, being equipped with a patented compression system.

2017 With Katrin Shen and Oliver Wirth, the management of the company is now at its 3rd generation.

2018 Bareiss USA, Inc. is founded, based in Arden, North Carolina.

2019 We opened our new, modern production building. The state-of-the-art extension has, among other things, an air conditioning system for exhausting the machines, as well as cooling and heating the production hall. The administration building is serviced by an air heat pump.

2020 Bareiss expanded its operation and service in Asia. For this purpose, we have established Bareiss Taiwan.

2021 Bareiss presents the most advanced Dynamic Mechanical Rheological Tester Worldwide, the RPA Ultra.

BAREISS **MIDE**

We never stand still in the pursuit of perfection. For us, this means, in addition to the highest quality of our products, we continuously strive to provide the best service to our customers all over the world. In addition to our worldwide distribution network, our employees in the branches also help to represent Bareiss well beyond Europe.

TORONTO

ASHEVILLE

UMAIR WAHEED

Sales | Bareiss North America

"Bareiss is a leading manufacturer of material testing solutions and an expert in the elastomer industry. With more than 25 patents and decades of experience, our products and solutions offer the highest value proposition to our customers. It is an honor for me to be a part of such an organization where quality and commitment are their utmost priorities.

In North America, our corporate responsibility is to build long lasting relationship with our partners by delivering on their expectations."

GREG SKORY

Marketing | Bareiss USA

"Bareiss's foundations were built on the strength of the human spirit starting in 1954 and they have been setting standards as a technology leader in hardness and material testing ever since. Their worldwide reputation for product quality, brand relevance and quality of perseverance are only a few reasons why this company continues to be an innovative force to this industry.

It has been a privilege for me to be a part of this company for nearly 4 years and collaborate with so many distinguished, dedicated and talented team members."

RICK SHEN

Sales | Bareiss Hong Kong

"Bareiss is a company which has 60+ years of engineering dedication to material testing technologies. While already being the market leader, Bareiss continues to strive for topnotch product quality and measurement accuracy.

It is my honor to have served in this company for more than 10 years and with the effort from all other Bareiss team members, our goal is to transform the company into a total turnkey solution provider in the field of material testing."

SHANGHAI

HONGKONG

MICKEY CHEN

Calibration | Bareiss Taiwan

"I joined Bareiss in 2018 and my main role in the company is to look after all the after-sales and calibration services in Asia. Bareiss is a fully accredited DAkkS laboratory that complies with DIN EN ISO 17025 for a broad range of metrological categories. Since 2020, Bareiss has extended its calibration facility to Shanghai and Taipei in hopes of better product supports and services for our Pan-Asia customers."

DEAN HAN

Sales | Bareiss Shanghai



"I have been a sales manager at Bareiss Shanghai for more than 3 years. The Shanghai subsidiary was founded in 2011 and we have seen a steady growth of business in China ever since. With superior product quality and measurement precision from Bareiss, we believe we can continue growing in this market that has a vast potential for material testing instruments."



THE FIRST

RPA Ultra

All RPA's in the market are limited in strain (up to 360° of arc) and shear rate (up to 30 1/s). With the RPA Ultra from Bareiss Prüfgeratebau GmbH in Germany strain and shear rate moves in a completely new high level for material characterization.

The RPA Ultra can be used to characterize polymers, mixtures and foods. The dynamic specifications are just as unique as the operational capability of the device.

Thanks to the special and unique construction, now the lower test chamber of the device can also be rotated, which means that amplitudes beyond 360° are possible as well.

To measure the transient viscosity (steady shear viscosity), shear rates of 500s⁻¹ can be initially generated, thus serving as important input parameters for the simulation and characterization/assessment of extrusion and injection molding.

The results can be followed on a precise 12" touch display and then transmitted to the BareissOne platform, via Ethernet, for assessment.



Rotational lower die, no limitation in strain anymore



to calculate real viscosity of compounds for process characterization and simulation

frequency sweep, iso- and non-isothermal tests including all kinetics calculation



"We have shaped the world of standards."

25 YEARS AFTER THE FIRST ACCREDITATION AS A DAkkS LABORATORY, PETER STROBEL, THE SECOND GENERATION MANAGING DIRECTOR OF BAREISS, OFFERS AN INTERESTING PERSPECTIVE ABOUT HIS JOURNEY AND SHARES HOW THE COMPANY FROM THE SWABIAN PROVINCE HAS INFLUENCED THE CALIBRATION OF HARDNESS TESTERS WORLDWIDE.

Mr. Strobel, this year Bareiss is celebrating its 25th anniversary as a DAkkS accredited laboratory. How did it all start in 1996?

At that time, our biggest concern was provability: we knew that we were producing testing equipment of the highest quality, but we couldn't prove it. Certificates had to be issued by two bodies: the Office of Weights and Measures was responsible for the weight of the device, while the Material Testing Institute certified the geometry and measuring length of the device. In the end, the device received two certificates. That was a very tedious process, which was requested by more and more companies at that time. Our aspiration to the highest quality made us search for other options. I thought it must also be possible to provide the customer with everything from a single source.

Then, finally there was the opportunity for private companies to obtain accreditation from the German Calibration Service DKD. At that time, we recognized the trend that standardized calibration will gain more and more significance. Therefore, we were genuinely interested in obtaining an in-house certified test center.

How did the first accreditation process unfold back then?

At that time, we created a manual that defined the exact steps and work processes of the calibration, followed by the instruments to use for calibration and the accuracy instruments should have. Everything was illustrated and determined down to the smallest detail. The compilation of the

comprehensive manual lasted for about two years. Everything took place in close collaboration with the National Metrology Institute of Germany.

Excerpts from this manual have shaped calibration worldwide. Years later, on the basis of these documents, the international test standard for calibration according to DIN ISO 18898 was created. And we are still guite active in this area: since 1996, I have been a member of the German Standards Committee for Elastomers and Plastics. Now, this position has been taken over by my nephew Oliver Wirth. To this day, we are involved in the revision of international standards, receiving these for review and making suggestions for potential changes. As an ambitious manufacturer, this is an essential part of our work.

Bareiss was the first company in Germanv to be accredited by the DKD. What was the response?

The announcement of our accreditation generated a great response from our customers and competition. The customers had been waiting to obtain everything from single source. The demand for DKD-certified devices increased significantly.

What are the tasks of a DAkkS accredited laboratory?

First and foremost, of course one bears a huge responsibility. An absolutely neutral assessment is required, as the DAkkS-certified calibration certificate means so much more than a factory





calibration certificate, with each company defining its own guidelines. We place a lot of value on the competence of our employees. As part of the accreditation, we include regular trainings, as well as the permanent maintenance and expansion of the instrument range. We are audited at specific intervals, which helps us maintain the accreditation. This is associated with a lot of effort and expenses. Today, our calibration laboratory is accredited according to DIN ISO/IEC 17025:2018.

What are the advantages customers stand to gain by having their test devices certified in a DAkkS accredited laboratory?

DAkkS certificates are created in accordance with the current standard DIN ISO 48-9 (the former standard DIN ISO 18898), whereby all measuring values of the devices are comparable. This standard describes how the device must be calibrated, which measuring equipment should be used to this purpose and how high the accuracy, respectively the measuring uncertainty, may be. This comparability is essential for today's production processes.

With us, the customer receives everything from one single source. We check and service every device before certification and, as the case may be, replace parts. This makes the process much more efficient for the customer.

For several years now, we have also been offering on-site calibration services. In this way, it is possible to avoid the problem of shipping, potential damages, or influencing the calibration.

In particular with our high-quality products, companies appreciate our service team, which quickly makes the devices operational on-site again. Nowadays, many test devices are directly connected to machines and the adjustment of the machine depends on the measured values that are delivered. As a manufacturer and DAkkS accredited laboratory, we always pay close attention to our customer's reguirements and needs. This allows us to develop practice-oriented and innovative implementations on a continuous basis. For example, we have developed Micro Shore A, Micro Shore D and VLRH, which were later included in the standards.

How can one envision the work done in the Bareiss laboratory?

If one would look at the premises, he would discover that our laboratory consists of an air-conditioned clean room. This is a prerequisite for our conscientious work, at the highest standards, for which we have become known among our customers. Since 1996, we have issued about 50,000 certificates.

How does the future of the laboratory look like?

As previously mentioned, on-site calibration is gaining more and more importance. Our service team is happy to go to the customer and, thus, ensure everything runs smoothly. Should on-site calibration not be possible, we provide rental equipment for the duration of the calibration. Our newly developed service packages offer more transparency and are tailored to the needs of our customers. Basically we want to be a partner for the laboratories, therefore we will extend the scope in future.

Our endeavor is and always was to develop and provide the best for our customers. For this purpose, we are now in the third generation.

LEASING

Regardless of your undertakings, leasing enables you to equip yourself optimally, without tying up capital unnecessarily.

COMMISSIONED MEASUREMENT **OF TEMPERATURE**

you, with temperatures ranging



TRAINING

.

ON-SITE CALIBRATION

The Bareiss onsite calibration service is provided throughout Europe. In addition to that, we have one satellite calibration laboratory in North America and two others in Asia Pacific.

UNDER THE INFLUENCE

In our digi Chamber we undertake commissioned measurements for between -40°C and +180°C. Heating is also available for Abrasion Testing.

COMMISSIONED MEASUREMENTS WITH PROTOCOL

If you haven't used a test facility until now but you still need test reports, you can send the samples directly to Bareiss for commissioned measurement. After consultation, we undertake the sample preparation and choose an adequate method. You will receive your samples back in a timely manner, documented with the recorded measurement results.



If you have any further questions, please do not hesitate to contact us!

OUR SPECIAL



For the duration of the service work on your testing devices or to bridge short-term bottlenecks in your company, we are pleased to provide you with a suitable rental device.

We regularly offer training courses on the subject of hardness testing on rubber and plastics. We focus on your samples, verifying them in accordance with current standards. For the theoretical part, we introduce you to the basics, going into detail on the Shore and IRDH, as well as VLRH procedures.





FRUITS

... we sell testing devices that can be used to carry out non-destructive testing on fruits and vegetables. This helps to reduce food waste – and happens to be user friendly. We are also developing new solutions for manufacturers of meat substitute products.

WE LOVE

BECAUSE

FISH

It all began with the testing for avocados and mangoes during the ripening process. Now, we are offering test anvils for the following fruits and vegetables: apricots, peaches, plums, cherries, grapes, berries, pears, citrus fruits, carrots, potatoes, broccoli, eggplants as well as for meat and tofu.

Testing devices belonging to the Fff (fruit firmness tester) range are now used worldwide – by wholesalers, supermarket chains, producers or research institutes.

VEGETABLES



, Illuminated display



digi test II

As an alternative to the manual hardness measuring with the handheld hardness tester HPE III Fff, you can assess the pulp firmness of various fruit and vegetable varieties with our modular digital measuring device digi test II, which is fully automated and requires the least possible operator influence.

> Automatic firmness test for multiple samples

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HPE III Fff



The firmness of the pulp is a trustworthy indicator for the degree of ripeness a fruit presents and it allows for conclusions to be drawn about its freshness, storage and transport capacity.

With the digital handheld hardness tester HPE III Fff, you can assess the firmness of fruit and vegetables in a non-destructive manner, without peeling or cutting them. The fruits remain suitable for consumption even after the testing.

The hardness tester can be variably equipped with different indenters and therefore adapted to the state of the fruit and vegetable varieties.



are beheaded in order to strengthen the growth of the leaves. The complete cultivation cycle, up to the harvest moment, takes about 4 months. The harvested tobacco leaves can be classified into three classes; depending on the amount of sunlight, they develop a milder or a stronger taste.

has reached a certain height, the flowers

The harvesting of the tobacco leaves requires manual work and often takes place early in the morning. The leaves are then carefully air-dried over a period of 25 days. The climatic conditions (humidity and temperature) are decisive for this process, then further regulated by opening and closing the doors of the tobacco houses. This step is followed by a twostage fermentation process, to reduce the presence of foreign substances, such as acid, tar, and nicotine, and also to release a multitude of aromas. The process takes between 90 and 120 days, depending on the leaf type. For the

BEEN STUDYING THE TOPIC OF TOBACCO WITH GREAT DETERMI-NATION. TO **GUARANTEE** THE BEST

WHETHER SMOKERS OR

NON-SMOKERS – MANY

PEOPLE ALL OVER THE

WORLD ARE FAMILIAR

COMPANY. FOR OVER

140 YEARS, THEY HAVE

WITH THE DANNEMANN

TOBACCO AND MEET THE HIGHEST QUALITY REQUIRE-MENTS, DANNEMANN HAS BEEN GROWING ITS OWN TOBACCO FOR OVER A CENTURY.

This long and elaborate path from cultivating the tobacco plant to the finished cigar is a complex process. Therefore, it is all the more important to transport the valuable goods from the overseas plantation to the production site without any damage. A digital device from Bareiss can help minimize the cost of rejected product and ensure the desired quality.

experience

The seeds are planted in controlled areas in loose soil, water-soaked and protected from the sun. As soon as the plant



ing tension is too high, the die-cuts will stick to the carrier material. If the winding tension is too low, the bobbin tends to telescope.

transportation, the prepared

blanks, which are also known

HPE III Tobacco scope of application

To check the winding density and the corresponding hardness of the bobbins, in the country of origin and at the production site, and to be able to monitor the process worldwide, a hardness tester from Bareiss was modified, according to the specifications of Dannemann, so that the precious tobacco leaves incurred no damage. With this special HPE III, the operator measures the winding density at three points on the bobbin, then checks if the values are within the specified "hardness" range of 62-70 Shore. The collaboration between experts from the **From cultivation to the perfect smoking** tobacco industry and the manufacturing of high-quality test equipment allow for precise adjustment, thus ensuring the necessary tobacco quality for a perfect smoking experience in the long run.

The perfect result with our test device

The hardness tester HPE III Tobacco is equipped with a special indentation body, which is pressed onto the test specimen, by means of a compression sleeve and a defined force.

A flashing display gives notice of the current measurement being performed and an acoustic signal announces the conclusion of the measurement process the resulting indentation path is shown on the illuminated display.

Two additional functions increase the ease of use and lead to an even more efficient test sequence: The measured value memory allows for 300 values to be stored. This occurs after each measurement, being shown on the display.

At the push of a button, the measured values are transferred to the computer and deleted from the memory at the same time.

> ► A digital helper from Bareiss helps minimize reject costs and ensure the desired quality. Photo with HPE III: Dannemann

YOUR WISH **IS OUR** COMMAND.

If you can't find anything in our product portfolio that exactly meets your requirements, we can also design and develop a customized solution for you.

Thanks to our experience and quality standards, we feel confident that we can take on any challenge you might present us with.



MAKE-UP

26

AGAR AGAR

BECAUSE WE ARE COMMITTED TO

Leaking gelatin capsules destroy consumer confidence in the product and the manufacturer. To prevent defective capsules from reaching the market, a manufacturer must develop tests to identify them.

One approach is to use a Gelatin capsule hardness tester that applies a compressive force to gelatin capsules to confirm they have sufficient wall strength to withstand external forces during manufacturing, storage, packaging, transport and finally when used by a consumer.

LIPSTICK

GEL CAPSULES



0-20 N

Fully automatic and modular digital tester for strength and hardness testing of gelatin capsules, gel-based culture media and other flexible cellular plastics.

With the digi test II Gelomat, you can measure the firmness and hardness of gelatin capsules, culture media or gelatinous substances in a reliable manner. Standardly-equipped with a 10-mm probe for the measurement of gelatin capsules, the digital hardness tester can also be optionally equipped with a measuring unit for tests on gels.





ACCESSORIES





for the precise centering of individual gelatin capsules

REFERENCE PLATE for 0-2 N or 0-20 N of several capsules





DAkkS CALIBRATION CERTIFICATE



QUALIFICATION REPORT



ΗP

Analog handheld hardness tester for hardness assessment according to Shore and Asker on flat test specimens, made of composite materials, flexible cellular materials, elastomers and polymers.

Experienced users can assess the hardness of flexible cellular materials, polymers or composite materials, quickly and easily, with the help of the HP analog measuring device.

For a correct hardness measurement with the HP, according to Shore or Asker, plain-parallel test specimens with a minimum thickness of six millimeters are required.

> Analog display of hardness

> > pressure plate

MEASURING METHODS			
DIN ISO 48-4	ASTM D2240		
Shore A	Shore 0		
Shore A0	Shore 00		
Shore D	Shore 000		
	Shore 000S		
	Shore E		
Asker C	Shore B		
Asker CS	Shore C		
Asker F	Shore D0		

O-RINGS



THE MOST **ADVANCED** DUROMETER.

HPE III | HPE III Basic

With the handheld hardness tester HPE III, you can effortlessly measure Shore hardness levels on flexible materials, polymers and composite materials. Its sophisticated functions ensure a correct measuring process, offering protection against operating errors.

Thanks to the functional handgrip with integrated compression sleeve, the hardness tester can be reliably guided and placed on the specimen with standard-compliant contact pressure.

During the hardness measuring, the HPE III registers humidity, environmental and sample temperature, as well as the date and time. After the specified measuring time has elapsed, it will notify the user of the successful measuring with an acoustic signal. All the measurement data is then shown on the illuminated display, and it can be conveniently exported in various formats, using the RS232/USB cable, delivered with the product.

HPE III BASIC MEASURING METHODS

DIN ISO 48-4	ASTM D2240
Shore A	Shore 0
Shore A0	Shore 00
Shore D	Shore 000
	Shore 000S
	Shore E
Asker C	Shore B
Asker CS	Shore C
Asker F	Shore D0

HPE III

Shore A Shore D



bareiss 17 °C 18:31:18 51 288 14.11.19 83.1 18" Variable recording of hard- - ness, date, time and sensor 🔊 👩 🛈 measurement data Integrated peak function Compression sleeve for which records the maximum guided placement and value of a measurement standard-compliant before the occurrence of contact pressure the relaxation typical for elastomers ACCESSORIES

MANUAL TEST STAND, TYPE BS 61 The test stand with manual lowering guarantees the precise 90° support of the handheld hardness tester acc. to standard



AUTOMATIC TEST STAND, TYPE BSA The automatic test stand guarantees the standardcompliant lowering and the precise 90° support of the handheld hardness tester. Speed acc. to standard.



Sensor for sample temperature (only available on HPE III A & D)

"No matter if we are talking about chickpeas, a sealing ring or lipstick – at Bareiss, there is a suitable solution for every requirement. "

Brigitte Wirth **Executive Management** 2nd Generation



KFZ Interieur | Bauchometer

Digital handheld hardness tester for the measuring of the surface tension on large parts of the vehicle interior, made of foam or with sandwich constructed composite, with a flexible outer skin and a hard base shell.

With using Bareiss handle, equipped with compression sleeve and an integrated base, the digital handheld hardness tester can be safely placed on the test specimen, with even pressure being applied afterwards. With its somewhat larger indentation sphere, of either 10 or 15 mm, the device specialized on vehicle interiors is construed for hardness measurement on foams with fine to medium pores.

Spherical indenter with **FZ**-Interieur: Ø 10 mm or Ø 15 mm Bauchometer: Ø 30 mm

HPE L/c

Digital hardness tester with special centering unit and holder for hardness measurements on foamed materials of motor vehicle steering wheels.

To determine the hardness of foamed materials used in the steering wheels of motor vehicles, with plastic or leather covers, we recommend using our HPE II L. With its short measuring path and the small 5 mm indentation ball, this digital handheld hardness tester was especially designed for materials with thin layers.

> Spherical indenter with Ø 5 mm





THE MOST FLEXIBLE HARDNESS TESTING SYSTEM-WORLDWIDE.

SHORE VLRH ≯ IRHD Modularly expandable via interchangeable

measuring devices according to Shore, VLRH

and IRHD

digi test II

The unique digi test II and its predecessors have been convincing the world since 1972, with their modular design and facile operation. Whether a standard specimen or a thin-walled specimen – the digi test II offers a suitable hardness testing solution for any kind of specimen.

D2240 D1415

For more than 45 years, the Bareiss's hardness testing technologies have impressed with its interchangeable probe system for hardness testing of different elastic materials and shapes. The specimen preparation and positioning are equally important. Therefore, Bareiss offers a wide selection of off-the-shelf sample fixtures as well as custom solutions.





The user influences are minimized through the automatic testing sequence. A calibration according to DAkkS / DIN ISO 17025 is possible either at your place of business, on-site, or in our laboratory.

MEASURING METHOD

a) =
Shore E
Micro Shore A
Micro Shore D
Shore AM
Shore M
IRHD L
IRHD N
IRHD M
IRHD H
VLRH

 Fully-automated test sequence, started with one button, without operator influence or manual pre-adjustment

MEASURING EQUIPMENT



Shore A for sheet





Shore 000



Shore A / B / O for

finished parts



Shore D / C / D0 for

finished parts







IRHD L

micro Shore A



VLRH



POSITIONING EQUIPMENT



Centering device with

vise



Centrofix for cables

Centrofix for tubes

IRHD N







With the digi test II you will benefit from the most flexible hardness testing device worldwide. Whether small samples or complicated geometries- we develop the right solution for you and match the test device to your automation needs.

AREAS OF APPLICATION

BaRotation II

on O-rings and plates.

of the O-Rings.

IRHD M

M Shore A

MEASURING METHOD

Modular digital measuring device with laser

With the BaRotation II, you can determine

elastomer parts, in a quick and fully-auto-

mated manner. For the measurement, the

marking, on the rotating table. BaRotation II

can also do an automatic visual inspeciton

test specimens will be placed along the

the hardness of several O-rings and molded

Today, both in the field of rubber and plastic production, as well as in the one of quality control, we are seeing a move towards performing hardness tests on finished parts instead of standard samples. The digi test II is completely automatized and thus it is operator-independent to a large extent. The measuring devices are used to determine the hardness of elastic materials, polymers and elastomers.

> Customer-specific solution for hardness testing of shaft seals





Shore AM



Rotofix with customized pattern





measurement, rotation table and electronic unit for the automated hardness measurement according to IRHD or micro Shore A

> Start-up system for . the precise measurement on flat, inclined, concave or convex geometries

> > cord diameter)



Barofix for O-rings



Barofix for large O-rings



Laser-controlled positioning of O-rings

Sample fixture for rheology samples

Rotofix for multiple rubber discs





Interview with Oliver Wirth

SECURE TEST RESULT VS. AUTOMATIC TEST SEQUENCE

How did you come up with the idea of combining hardness and density testing in one automation?

Generally-speaking, we see ourselves as a very customer-oriented partner on the market. Our customers are aware of this fact, and they always come to us with new ideas and desires. The same thing happened in this case.

Some of these automations are already present on the market. How does your device distinguish from the others?

The HDA 120 test system was developed for use in rough industrials environments. This is also the reason why we have built it using only high-quality components.

In this special case, specimens from a developed tire mixture had to be tested, and these are extremely sticky. Precisely these sticky specimens represented a challenge for the automatic measurement process.

Why does the stickiness of the specimens represent a particular challenge?

I will give you an example: the density is measured through the use of the immersion method. This method uses a scale with an underfloor function, on which a basket system is located, due to the automation. These baskets must be made from very fine wire to guarantee a highly accurate measurement. Now, we want to carry out the measurements to 0.0001 g, so we require high-precision weighing systems for this. The gripper brings a specimen, puts it in the measuring basket, opens the jaws and the specimen sticks to one of the jaws. Worst case scenario, the measuring system will be misaligned after this action.

How did you solve this problem?

In the situation of the grippers, we have developed our own jaws, which eject the specimen through force. Of course, that didn't function right away, requiring several repetition steps. Special hold-down devices help, for instance, during the hardness testing, to remove the specimen from the pressure plate of the hardness tester.

What does the test sequence of the machine look like?

To supply the system with the necessary test specimens, the operator provides the automatic specimen feeder with a maximum of 20 test specimens. The specimens are automatically transported to the work cell. The built-in digi test II device measures the hardness of the specimen at several points, whereby the customer can choose between Shore A or IRHD N. The specimen is then transported to the automatic density testing, one dry weighing and several wet weighing processes, specified by the operator, are carried out. A second gripper picks up the wet specimen and sorts it according to the specifications. On a side note: the liquid level for the density test is constantly monitored and automatically refilled if necessary.





touchscreen to determine the hardness and density of flat test specimens made of rubber-elastic, non-cellular plastics, elastomers and other rubber products.

OK, that is a great idea. With so much automation, another important question comes to mind: what about the safety of the machine?

Of course, for all of our devices, we carry out FMEAs and risk assessments during construction. In this case as well, all of the processes that are potentially dangerous for the user are carried out within a monitored work cell. Only the feeding and removal of the specimens can be undertaken from outside. As a general rule, we protect not only the user from the machine, but also the process and therefore the stability of the measurements from external influences.

What are your thoughts on operating the svstem?

Of course, the step chains are permanently programmed into the PLC. Nonetheless, they are operated via a touch display. This has been designed in such a way that it

offers different user levels, so that everyone has access to only what they actually need. In turn, this protects both the operator and the machine. Naturally, there is also a language selection available, and for instance the number of wet weighing processes can be adjusted – the more are performed, the more precise the measured values are going to be, but that also means the entire process will be more time-consuming.

Precision is an important keyword. Have the measurements been validated and what can you say about the legal implications?

Of course, both methods have been validated through suitable processes, and compared with the results provided by other measuring devices. Our laboratory is accredited according to ISO 17025 for these measuring ranges, and more recently also for the domain of scales.

This means we can provide the customer with a complete calibration according to ISO 17025 – this ensures a maximum amount of confidence in the measuring machine. As a manufacturer of measuring instruments, I am proud to say this combination is unique in the world!

One last question: what happens with the data?

The system can be easily integrated into the company network via Ethernet. As a result, nothing will stand in the way of exchanging data within the company's own database. We supply a small software tool for the data transmission - the individual further processing falls in the responsibility of the customer, being freely accessible.



Depending on the mode, the testing device guides the rigid or rotating material specimen, with a defined contact pressure over a rotating emery sheet, thus exposing it to abrasive stress.

Thanks to optional temperature control, it's also





polymer foam materials.

3106 Hardness tester for ball indentation hardness / Rockwell hardness

			N DIN SO EN ISO	EN ISO	DIN EN IEC	DIN EN	DIN	DIN 1996-
		2039	9-1 6508-1	24343-1	413	13279	51917	13
Ball indentation and Rockwell hardness		M as or m	odular mea sessment c n carbon an ers, buildin	asuring de of ball pre Id graphit g materia	evice wil ssure or e mater Is, floor	th digita Rockwe ials, met coverin	l unit for ell hardn tals, poly gs or asp	the ess, ,- ohalt.
Braked load lowering		Software r defined st	nodules for andards					
		N	IEASURING	METHO)S			
			Ball indenta	ation hard	Iness			
			Rockwell ha	ardness				
-								
Kal-Rock calibrati	ion device	9					DIN	DIN
With the patented Kal-Rock, you of	can verify						EN ISO 6508-2	2039-1
the penetration depth measuring of your Rockwell hardness tester. resolution of 0.3 μ m, it controls the measuring system of the hardness under a maximum preload of 10 k	With a he length s testers, kg.	Patente	ed measuring o	device		Ac	curacy 0,3 ad of 10 kg	μm with a test

Shore control device

Mechanical measuring device for checking the spring characteristics of analog or digital Bareiss handheld hardness testers.

With the control device you can check the spring characteristics of your handheld hardness tester, with just a few simple steps. This process ensures that the hardness tester measures with the correct spring force between the calibration intervals.

MEASURING METHODS

Shore A	Shore D
Shore A0	Shore D0
Shore B	Shore E
Shore 0	Shore L
Shore C	Shore L/c

Reference elastomer blocks



Plane-parallel test specimens made from reference elastomers with various hardness levels, for the assessment of the indenter and the measuring path of your hardness measuring device.

MEASURING METHODS

Shore A	Shore 00	Shore C
Shore A0	Shore 000	Shore D0
Shore AM	Shore 000S	Asker C
Shore D	Shore E	Asker CS
Shore 0	Shore B	Asker F



Control rings



Plane-parallel, ring-shaped metal test specimens for the verification of the measuring path of handheld hardness testers according to Shore.

MEASURING METHODS

Shore A	Shore C
Shore D	Shore A0
Shore B	Shore E
Shore 0	Asker C
Shore 00	Asker CS

BareissOne

coming

BareissOne is a modularized software that is aimed to provide a common platform with integration of different test categories.

Whether it is a standard test for one single measurement or a series of tests that requires a complex test sequence editing, BareissOne is designed to offer all levels of user's demands.

Features such as user authorization, system log, project management, version control and custom report are all at your fingertips.

easier than it ever was before







With its easy-to-understand icons and workflows, familiarize yourself with BareissOne is only a matter of a few hours of training. Whether you are a new or experienced user, everyone can quickly start testing at the touch of a few clicks.

The new portray layout gives the users a comprehensive view of the test workspace, identification of the test category and the available software functions.

bareiss[®] SMART**LAB**

INDIVIDUAL SOLUTIONS FOR YOU.

concept of module, scalability and custom-made. With years of engineering enclosures to prevent operators from dedication to material testing exposing to any potential hazards. technologies, Bareiss guarantees not only on the benefits of high throughput and repeatable results brought by the automation but most importantly the "measurement accuracy". Bareiss is minimize the machine downtime when a known for its cutting-edge technologies service to a certain part of the system is in Shore/IRHD hardness tests, rebound resilience test, density test and rheology test. All these test categories can be selected according to your needs and built into each individual test module. Your one of a kind SmartLab is then composed by all these selected test modules. Upgrade your SmartLab by adding more test modules is possible should your test requirements change in the future.

The Bareiss SmartLab is built on the We make no compromise on safety. The The SmartLab is not intelligent without entire SmartLab is built within safety While the SmartLab is in operation, an interruption can be made to a certain testing module without shutting down the entire system. This advantage can needed.

CURRENT AVAILABLE TEST CATEGORIES Shore/IRHD/VLRH hardness tests

- Density test
- Sample geometries inspection
- Tensile test for S2 dumbbell specimen
- Tensile test for R1 ring specimen

*More test categories to be available

an intelligent software. The BareissOne software is solely developed by Bareiss with advanced features such as user authorization, system log, project management, version control, custom reports, data analysis and much more.

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bareiss'

MEASORING	STANDARDS	TOTAL FORCE	FORCE	INDENTER	PRESSURE PLATE	PATH	RANGE
IRHD M	DIN ISO 48-2	153,3 mN	235 mN	Ø 0,395 mm	Ø 3,35 mm	0,3 mm	30 - 100
IRHD N	DIN ISO 48-2	5,7 N	8,3 N	Ø 2,5 mm	Ø 20 mm	1,8 mm	30 - 100
IRHD H	DIN ISO 48-2	5,7 N	8,3 N	Ø 1,0 mm	Ø 20 mm	0,44 mm	85 – 100
IRHD L	DIN ISO 48-2	5,7 N	8,3 N	Ø 5,0 mm	Ø 22 mm	2,08 mm	9,9 – 34,9
VLRH	DIN ISO 48-3	100,0 mN	250 mN	Ø 2,5 mm	Ø 6,0 mm	1,0 mm	0-100
Pusey & Jones	ASTM D531 DIN ISO 48-8	1000 g	-	Ø 3,175 mm	-	3,0 mm	0 – 300
Gelomat 0 – 2 N		2 N	-	Ø 3,57 mm	-	2,5 mm	0-2
Gelomat 0 – 20 N		20 N	-	Ø 10,0 mm	-	2,5 mm	0 – 20
Shore A	ASTM D2240 EN ISO 868 DIN ISO 48-4	8050 mN	1 kg	35°	Ø 18 mm	2,5 mm	0 – 100
S. AM/M	ASTM D2240 DIN ISO 48-4	764 mN	250 g	30°	Ø 9 mm	1,25 mm	0 — 100
Shore E	ASTM D2240	8050 mN	1 kg	Ø 5 mm	≥ 500 mm ²	2,5 mm	0 - 100
Shore A0	DIN ISO 48-4	8050 mN	1 kg	Ø5mm	≥ 500 mm ²	2,5 mm	0 - 100
L / L/c		8050 mN	1 kg	Ø 5 mm	Ø 18 mm	2,5 mm	0 - 100
Shore D	ASTM D2240 EN ISO 868 DIN ISO 48-4	44450 mN	5 kg	30°	Ø 18 mm	2,5 mm	0 — 100
Shore B	ASTM D2240	8050 mN	1 kg	30°	Ø 18 mm	2,5 mm	0-100
Shore C	ASTM D2240	44450 mN	5 kg	35°	Ø 18 mm	2,5 mm	0-100
Shore D0	ASTM D2240	44450 mN	5 kg	3 / 32"	≥ 500 mm ²	2,5 mm	0 - 100
Shore 0	ASTM D2240	8050 mN	1 kg	3 / 32"	Ø 18 mm	2,5 mm	0 - 100
Shore 00	ASTM D2240	1111 mN	400 g	3 / 32"	≥ 500 mm ²	2,5 mm	0 – 100
Shore 000	ASTM D2240	1111 mN	400 g	r = 6,35	≥ 500 mm²	2,5 mm	0 - 100
Shore 000 S	ASTM D2240	1.932 mN	400 g	r = 10,70	≥ 500 mm ²	5,0 mm	0 - 100
M Shore A	TD 00002001	108 mN	235 mN	30°	Ø6mm	1 mm	0-100
M Shore D	TD 00002002	9120 mN	500 g	30°	-	0,9 mm	5,4 - 82,5
Asker C	SRIS 0101	8,382 N	1 kg	Ø 5,08 mm	≥ 500 mm ²	2,54 mm	0 - 100
Asker F	Factory Standard	4,462 N	0,5 kg	Ø 25,2 mm	Ø 80 mm	2,5 mm	0 - 100
Barcol	ASTM D2583 DIN EN 59	71,3 N	10 kg	26°	Ø 2 mm	0,76 mm	0-100
SOFT MEDIUM HARD							

bareiss[®] service

WE ARE COMMITTED TO PROVIDING THE TOP QUALITY AFTER-SALES SERVICES.

Bareiss was honored to be the very first company in Germany to receive the DAKKS accreditation for Shore/IRHD in 1996. Since then, Bareiss has been carrying out stringent calibration processes that comply with DIN EN ISO / IEC 17025 for all the Bareiss-made instruments either in-house or on-site.

In order to serve our customers in other continents in a more timely manner, Bareiss established one satellite calibration laboratory in North America and two others in Asia Pacific in the hope of saving transportation costs and turn-around time for our customers. In some specific regions, Bareiss even offers rental instruments for swap while the customers' instruments are being serviced. Should you need a thorough product or application training, pls don't hesitate to contact any of the Bareiss service centers for more information.

We are happy to answer any questions you might have about hardness testing!

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CHINA



The accreditation is valid for the scope listed in certificate D-K-15206-01-00 (mechanical measurands in the range of hardness).







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