MODEL 140 A

GB

Sinn

Spezialuhren zu Frankfurt am Main

CONTENTS

DEAR CUSTOMER,

We know from numerous conversations that the people who buy our watches do so out of conviction. This includes people with a pronounced affinity to technology who are fascinated, for example, by the solutions we have devised for protection from magnetic fields and scratch resistance. Some of our customers, such as divers, pilots and the German GSG 9 special police unit, rely on their watches in their respective careers because their lives depends on it.

They all swear by the performance, resilience and durability, as well as the quality and precision of our watches. That is why Hamburg-based Germanischer Lloyd regularly tests and certifies the water and pressure resistance of our diving watches.

We have selected pilot's watches tested and certified to the Technical Standard for Pilot's Watches (TESTAF) by Aachen University of Applied Sciences. The TESTAF ensures that a pilot's watch meets all timekeeping requirements during flight operations in accordance with visual and instrumental flight regulations and is suitable for professional use. Functionality is our top priority and ultimately determines the design. Only the technical features that are really needed can be found on our watches. Because we believe that products have to speak for themselves.

The basic question that we ask ourselves is: which innovative technologies and materials can be employed for our craft and provide solutions for rendering our watches even more practical for everyday use? It is often worth indulging in a little lateral thinking to see what is going on in other industrial sectors or fields of science. We repeatedly go to the limits of physical resources to upgrade our watches – with the aim of making what's good even better. Most of our best developments are yet to come!

I am delighted that you have decided to buy a SINN timepiece and hope that it will continue to give you pleasure for many years to come.

Yours sincerely,

Lothar Schmidt

SINN SPEZIALUHREN ZU FRANKFURT AM MAIN

It was back in 1961 that pilot and blind-flying instructor Helmut Sinn founded the company. Since then, we have been committed to producing high-specification mechanical watches. In 1994, the graduate engineer Lothar Schmidt took over the company. This marked the beginning of a new era for the SINN brand, because the new owner took a decisive step towards more innovation. Under his leadership, new technologies and materials were introduced, thus providing the crucial incentives for our company's evolution and gradual emergence as an insider's tip for lovers of fine watches. Today, our name stands for technical innovations – much to the delight of both the trade and our customers alike.

Advancements in endurance testing

Take, for example, the absolutely condensation-free, anti-reflective, german submarine steel diving watch – made possible by HYDRO technology. Other examples include a chronometer chronograph fashioned from a 22-carat gold alloy that is as hard as stainless steel and a chronometer with a magnetic resistance 20 times the standard. There are also watches with a clockwork mechanism optimally protected from aging by an inert gas and integrated dehumidifying capsule. The list would not be complete without mentioning the development of mission timers (Einsatzzeitmesser or EZM in German) for special police units and border patrol guards as well as temperature resistance technology to keep mechanical watches performing at temperatures ranging from –45°C to + 80°C. This technology has proven its worth in the EZM 10 TESTAF model, for example, used as part of the official approvals procedure for Eurocopter's EC 145 T2 high-performance helicopter. Hot and cold climate tests and high-altitude experiments were carried out in the deserts of the USA, the Rocky Mountains and the frozen wastes of Canada. The watch was worn unprotected, outside the pilot's overall, during cold climate tests at temperatures reaching –45°C.

Innovations and certifications

Germanischer Lloyd, the world's largest classification society for maritime safety, has been testing our diving watches for pressure and water resistance since 2005. As part of Germanischer Lloyd's official certification process, our diving watches have been treated as part of diving equipment since 2006 and tested and certified in accordance with European diving equipment standards. This is unparalleled in the watch industry.

We have had selected pilot's watches tested and certified to the Technical Standard for Pilot's Watches (TESTAF) by Aachen University of Applied Sciences since 2012. The TESTAF, the result of a research project at the initiative of Sinn Spezialuhren, ensures that a pilot's watch meets all timekeeping requirements during flight operations in accordance with visual and instrumental flight regulations and is suitable for professional use.

DIAPAL is one of our most important technological developments, with oiling no longer needed for the most important functions in the watch thanks to the materials we select. This technology was first used in 2001. With the aid of TEGIMENT technology, we achieve greatly increased scratch resistance through surface hardening.

Ongoing advancement in technology and quality

Our top priority has always been to develop watches that offer superior performance – both in daily and in professional use. Which is why our engineers are working continually to identify which innovative methods, materials and technologies are best suited for optimising our watches. Each new development has to first undergo rigorous practical tests before being incorporated. And no watch leaves our workshops before it has been subjected to thorough checking and fine adjustment by our master watchmakers.

Workshop modifications and hand-engraving

From the robust case and the polished crystal through to elaborate refinements: we make sure that each and every detail of our watches is fit for purpose. The same applies to our workshop modifications. Only the perfect interaction of all components and technologies ensures that our watches can meet all their design specifications in full. Take for example the SZ02 calibre of our U1000 diving chronograph. The 60-minute scale of the stopwatch minute counter is much simpler and more intuitive to read than the 30-minute scale commonly found on other watches. The hand-engraving represents a highly personal form of refinement. If required, our specially trained master engraver can etch a name, initials, monograms or symbols onto the rotor, movement bridge and case back.

FASCINATION OF SPACE TRAVEL

ASTRONAUT-SCIENTIST DR. ERNST MESSERSCHMID ON THE D1 SPACELAB MISSION

Even people who have never orbited like a real astronaut are fascinated by the idea of space flight. The aerospace industry has already created a multitude of benefits in telecommunication, navigation, earth observation, space research and many other technological fields. But the biggest benefit may be the fact that more and more people are beginning to see our world the way astronauts do – as a small, beautiful planet, an island in the vast and unfriendly reaches of the galaxy with only a limited amount of space for its inhabitants who live in constant conflict with Mother Nature.

From the early beginnings of space flight to today, only a few people have enjoyed the privilege of actually going there. The first Europeans received the opportunity to live and work in space as "astronaut scientists" with the development of the Spacelab system, which began immediately following the successful Apollo missions of the USA in the early 1970s. This was Europe's first access to manned space flight. Just two years after Ulf Merbold participated in the first joint NASA and ESA Spacelab mission, Reinhard Furrer and I were selected to orbit the earth for a week and conduct some 100 scientific experiments as part of the D1 German Spacelab mission. When Reinhard Furrer and I – both of us were physicists – began our astronaut training in early

1983, we were breaking new ground at the German Aerospace Centre, at NASA and in the public's perception. Previously there had been only American astronauts and Russian cosmonauts, and most of them were test pilots, a few were engineers, but hardly any were scientists. Up until then, science had taken a back seat – at least, it was not considered particularly important to the struggles the two superpowers were engaged in, both on earth and in space.

When the Europeans expressed interest in participating in the development of the American space shuttle in the 1970s, they were initially given the cold shoulder. All that was offered to them was a small module considered by many to be of little importance, which the shuttle could also have flown without – namely the Spacelab, built by European engineers, most of them Germans. If we had not hailed from the country of Hermann Oberth, Werner von Braun and other important pioneers of space flight, we would have had even more trouble being accepted by our more powerful partners.

The goal of the D1 Spacelab Mission STS-61A, which lasted from 30 October to 6 November 1985, was to conduct a variety of scientific experiments in diverse fields, e.g. fluid physics, materials research, process engineering, medicine and biology. The experiments were designed to be conducted in microgravity, so they could only be carried out in the weightlessness of space. Previously unexplored effects on fluid-mechanic interface and solidification responses were investigated, and chemical reactions in the various objects under investigation were analysed, including the effects of weightlessness on

Shortly before the D1 mission,
Prof. Dr. Reinhard Furrer bought his SINN model 140 S and used it to prove primarily that automatic watches can be wound through movement even under weightless conditions. Furrer died during an air show in Berlin on 9 September 1995.

the human body and the behaviour of various materials such as liquids, alloys, composites and crystals. On the D1 mission in 1985 we had atomic clocks on board in order to better understand the fundamentals for subsequent, satellite-supported navigation systems such as GPS and the European Galileo satellite system. Also on board was my colleague Reinhard Furrer, who had previously piloted one-engine planes across the Atlantic. During this time he had become acquainted with chronographs and astronavigation, which at least explains why he took his chronograph with him on the space flight. It was a Sinn 140 S chronograph, an automatic watch that performed flawlessly in space. I left my own chronograph at home, where it was promptly stolen from my home during my extraplanetary journey. Reinhard Furrer's attachment to this seemingly outdated technology was not just emotional – and after all, who wouldn't want to take along the useful tools they have come to love when setting out on an expedition? In addition to this understandable motivation, he knew that these chronographs provide reliable service in various situations pilots often face, where they must take action in real time,

under stress, and can't afford to make any mistakes (Apollo 13: Failure is not an option). They have also been technically improved upon and increasingly also fulfil operational and aesthetic needs in ways that would not be possible with the kind of technical progress that sometimes results from basic research conducted as part of the space program.

Sincerely,

Prof. Dr. Ernst Messerschmid

Fascinating view from outer space on the blue planet.

Ernst Messerschmid was born in Reutlingen in 1945. After studying physics in Tübingen and Bonn and earning his doctorate, he joined the German Aerospace Centre (Deutsche Forschungsanstalt für Luft- und Raumfahrt, DLR) in Oberpfaffenhofen in 1978. In 1983 Messerschmid was named an astronaut-scientist, and he flew aboard the American space shuttle Challenger in 1985 on the week-long D1 Spacelab mission. In 1986 he was given a full professorship and appointed director of the Institute for Aerospace Systems at the University of Stuttgart, where he also served as dean of the aerospace technology faculty from 1990 to 1992 and pro-rector for research and technology from 1996 to 1998. From 2000 to 2005 he took a leave of absence from the University of Stuttgart to serve as head of the European astronaut centre of the European Space Agency in Cologne. While there, his responsibilities included selecting and training European astronauts for missions on board the International Space Station, ISS. His current research focuses on developing future space stations as well as strategies and scenarios for space missions to the moon, nearby asteroids and Mars.


Sinn
FRANKFURT AM MAIN
SZ01
AUTOMATIK

MODEL 140 A

The redesign of the technically refined space chronograph 140 resulted in the creation of the 140 A model (limited edition of just 500 timepieces) with silver electroplated counter dials and satinized stainless steel case with polished sides.

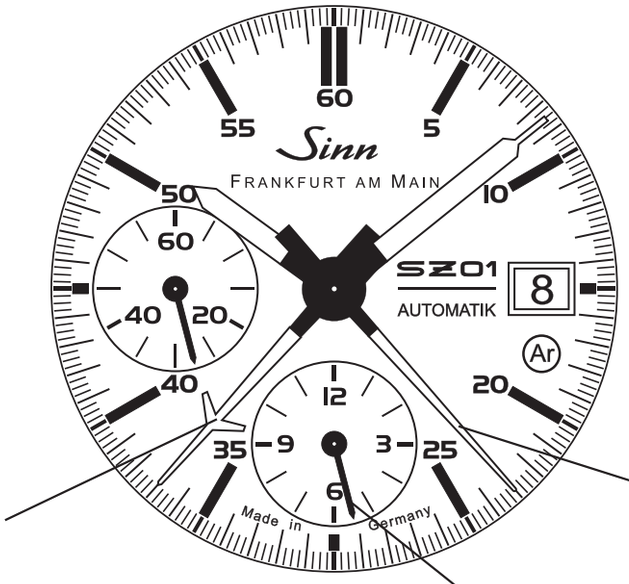
The 140 and 142 model chronographs are two of our most illustrious timepieces. They have gone down in both watchmaking and space flight history. The German physicist and astronaut Reinhard Furrer wore the 140 S with Lemania 5100 movement on his wrist during the D-1 Spacelab mission in 1985. He was therefore able to demonstrate that automatic watches can function even in a weightless environment. In 1992 the astronaut Klaus-Dietrich Flade took his 142 S along with him on the Mir 92 mission.
We have now subjected the 140 model series to further technical development. It incorporates the SINN-SZ01 chronograph movement. The most striking feature of the new design is the centre-mounted jump 60-minute stop hand for improved readability. The stainless steel case is surface-hardened with TEGIMENT Technology, making it especially scratch-resistant. All of the 140 model series watches incorporate Ar-Dehumidifying Technology to increase the functional reliability and prevent fogging.


Sinn

CENTRE-MOUNTED STOPWATCH MINUTE HAND – THE SINN SZ01

The SZ01 chronograph is based on the successful Valjoux 7750 and has been specially developed by SINN. The development work began back in 2003.

The main priority in undertaking the redesign was to make the chronograph functions significantly easier to read off. Which is why we attached so much importance to finding a first-class technical solution to mounting the stopwatch minute hand in the centre of the dial. This allows users to take accurate stop times even more quickly and simply. The clarity and distinct readability of this chronograph stem from the design of the well-known Lemania 5100 movement.
Our redesign enhances the readability in two ways: firstly, 60 minutes are now counted in one sweep of the hand instead of the usual 30 minutes, and secondly, the minute stop scale covers the entire diameter of the dial.

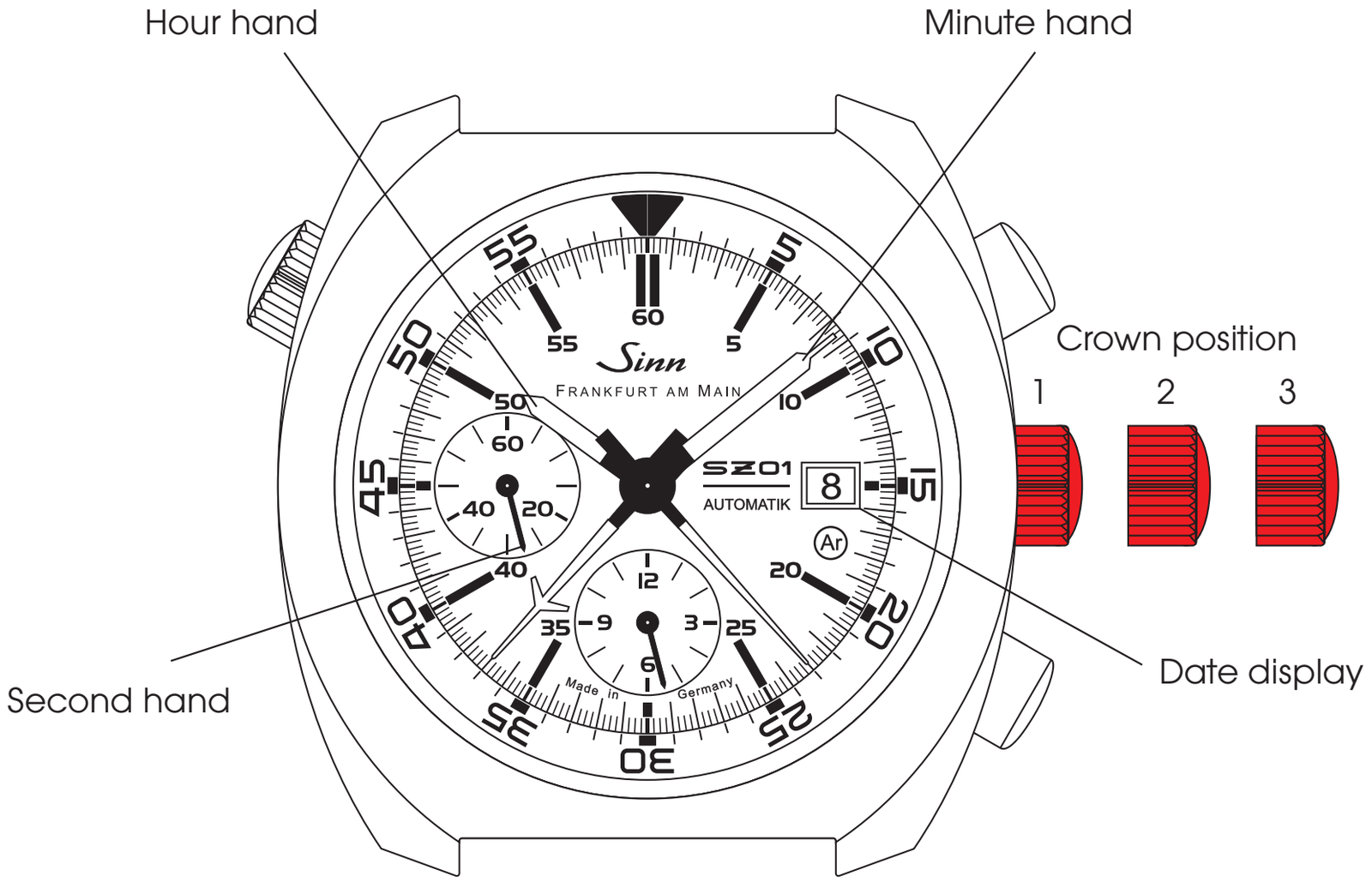


Stopwatch minute hand

Stopwatch second hand

Stopwatch hour hand

INSTRUCTIONS FOR USE



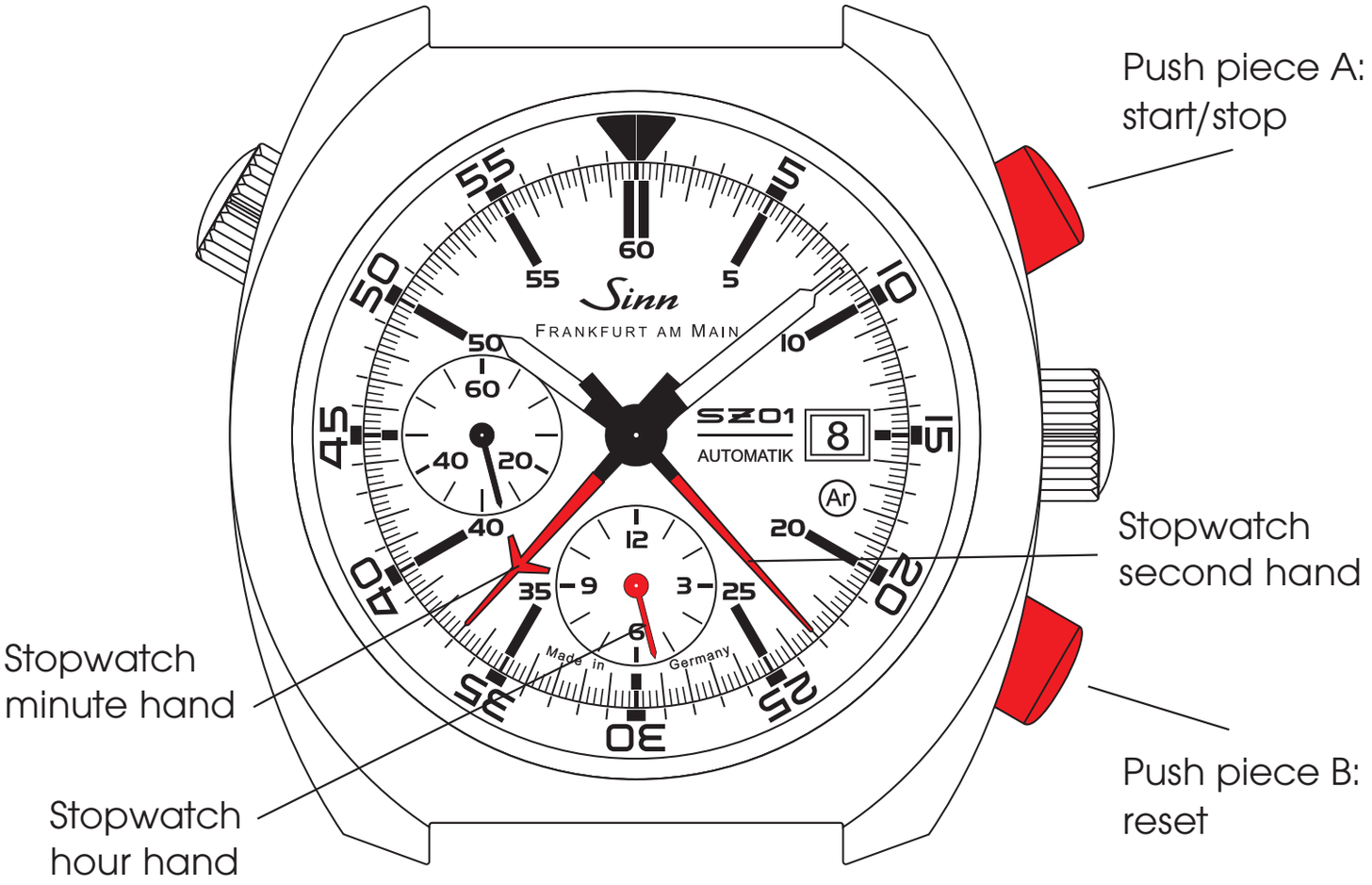
Winding the watch (crown position 1)
The movement is wound by turning the crown *clockwise*. About 40 winds of the crown are generally enough to ensure reliable functionality. Under normal circumstances, simply wearing the watch every day should suffice to keep the self-winding mechanism wound. The power reserve allows you to take off your watch overnight without having to re-wind it.

Time adjustment (crown position 3)
In crown position 3, the motion is paused. This helps you to set the watch precisely. To set the time accurately, we recommend moving the hand past the desired minute marker and then adjusting it *counter-clockwise*. Please make sure that the date changes at midnight and not at midday when adjusting the time. Move the hand forward until the date changes before you attempt to set the time. The movement restarts as soon as the crown is no longer in position 3.

Quickset date adjustment (crown position 2)
Do not use this function between 9 p.m. and 3 a.m. Set the crown in position 2 and turn it *clockwise* until the correct date appears in the date display window. **Please do not use the date-setting function between 9 p.m. and 3 a.m.** Between these times, the gear wheels used for changing the date are engaged, and the movement could be damaged.

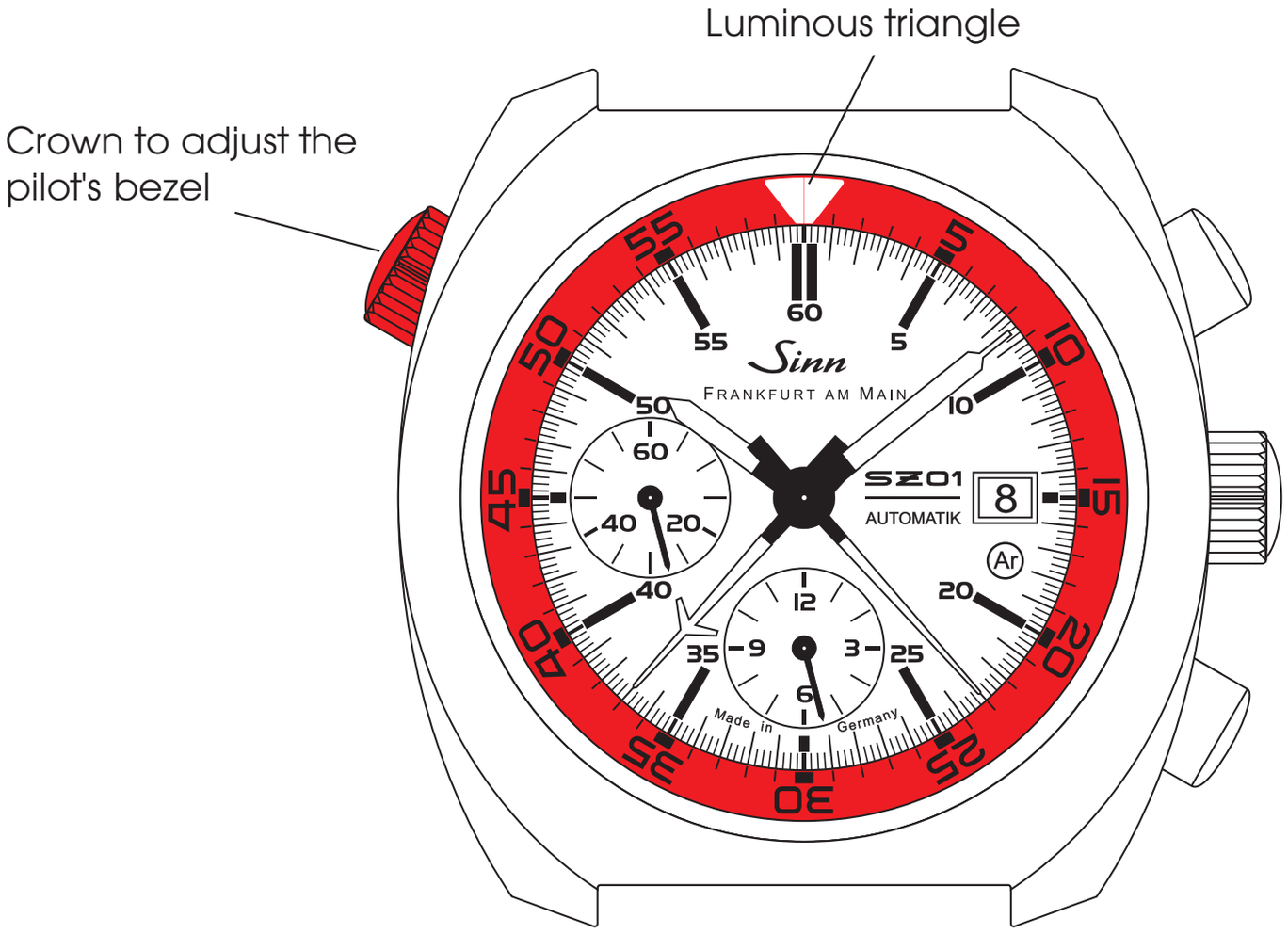
Using the chronograph to measure time

The chronograph is operated by means of buttons A and B. The measurement starts when button A is pressed once. Pressing this button again stops the measurement. The measurement is resumed by pressing button A once more. This allows you to add up and record the cumulative time. Button B resets the hands of the chronograph to zero.



Using the pilot's bezel to measure time

The pilot's bezel is can be moved manually in both directions. The triangle glows in the dark. It can be used in a number of ways, including to measure important lengths of time. For example, you can set the marking to the beginning of the time span to be measured, or you can use it to indicate the end of a given span of time.



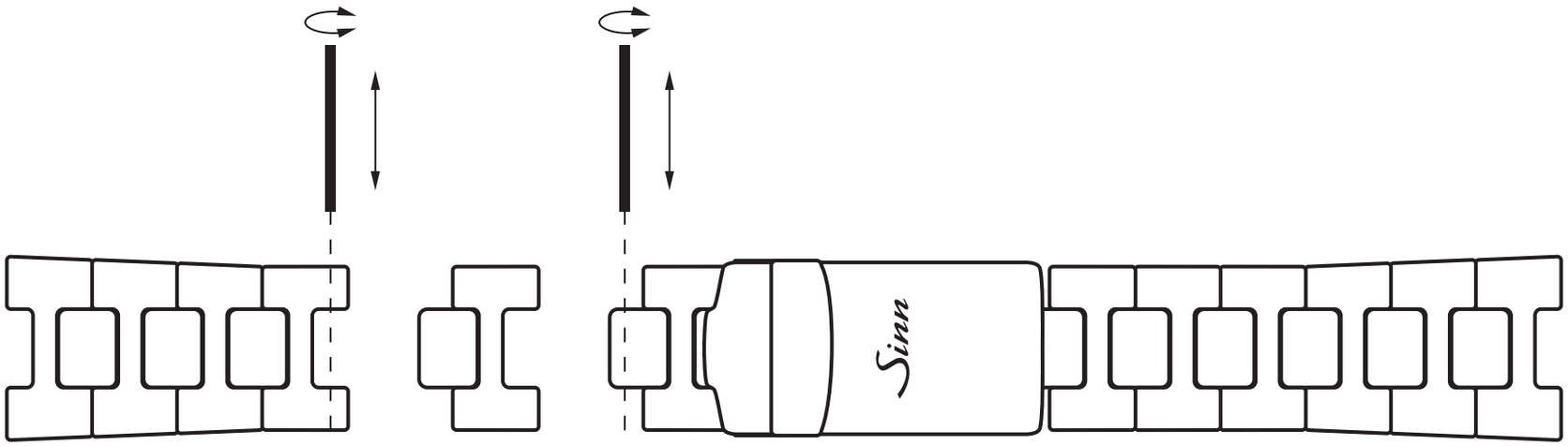
ADJUSTING THE LENGTH OF THE WATCH STRAPS

If you don't know how to shorten or lengthen the solid bracelet, please contact your SINN dealer or the watchmakers in our customer service department in Frankfurt am Main. Our customer service employees are also happy to help you over the telephone.

Adjusting the length of the solid bracelet
Determine the relative lengths of the two sides before adjusting the length of the bracelet. To ensure maximum comfort, both sides of the bracelet should contain the same number of links. If this is not possible, the top bracelet strap (above the 12 on the clock) should be longer.

It is not necessary to detach the solid bracelet from the watch or the clasp.

1. Loosen the screws on the side of the bracelet link which is to be removed or added.
2. Remove the superfluous bracelet link or insert a new one.
3. Before screwing tight, add a small drop (no more!) of thread-locker (AN 302-42 medium-tight) to the thread of the bracelet screw.

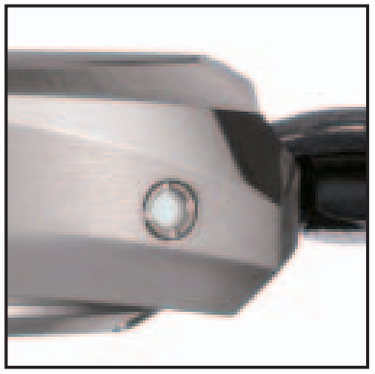

Sinn

Ar-DEHUMIDIFYING TECHNOLOGY

Indication colours of the drying capsule

Pale blue

Up to 25% saturation



Initial condition

Light blue

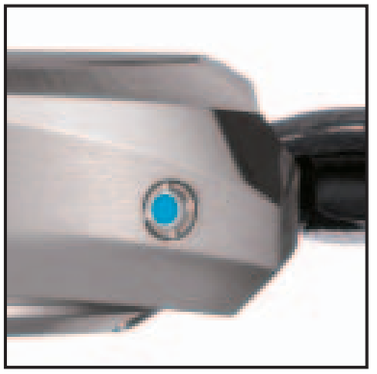
Up to 50% saturation

Medium blue

Up to 75% saturation

Dark blue

Up to 100% saturation



Drying capsule saturated

The colour scale for the Ar-Dehumidifying Technology: the capsule continues to absorb moisture until the darkest colouration is reached.

Perfect freedom from fogging

All watches in this series are water-resistant as per DIN 8310. But even with watertight instruments, the air enclosed in the case contains water in a gaseous state. And air can also penetrate the seals. When the water vapour in the case condenses into liquid, the instruments are impossible to read. To prevent this from happening, we have developed the Ar-Dehumidifying Technology. The combination of a special drying capsule, EDR seals (**e**xtreme **d**iffusion **r**eduction) and a filling of protective gas guarantee that the crystal remains free from fogging, even in difficult conditions.

Longer service intervals

The sophisticated Ar-Dehumidifying Technology considerably slows the aging process of the watch's inner workings and keeps the movement functioning properly for longer. That is why we issue a three-year warranty on all our watches featuring Ar-Dehumidifying Technology. When the drying capsule is saturated, as indicated by a deep blue colour (refer to picture on the left side), we recommend you have it exchanged so you can continue to enjoy all the advantages of the Ar-Dehumidifying Technology (enhanced reliability, longer intervals between maintenance).

Luminous

TECHNICAL DETAILS

Mechanical Movement
- SINN Movement SZ01
- Self-winding mechanism
- 33 bearing jewels
- 28,800 semi-oscillations per hour
- Seconds stop function
- Shock resistant as per DIN 8308
- Anti-magnetic as per DIN 8309

Functions
- Hours, minutes, subsidiary seconds
- Date display
- Chronograph with centred 60-minute stopwatch hand
- Interior pilot's bezel and luminous key mark

Dial & Hands
- Matte black dial with silver electroplated counters
- Indices coated with luminescent colour
- Hour and minute hand coated with luminescent colour
- Chronograph function indicators coated with daylight luminous paint

Watch Case
- Case made of stainless steel, polished/satinized
- Sapphire crystal glass in front, anti-reflective on both sides
- Case back screw-fastened, nickel-free
- Water-resistant as per DIN 8310
- Pressure resistant up to 10 bar (= 100 m water depth)
- Low pressure resistant
- Band lug width: 22 mm
- Case diameter: 44 mm

SINN Technologies
- TEGIMENT Technology, therefore especially scratch-resistant
- Ar-Dehumidifying Technology enhances functional reliability and freedom from fogging
- Push-pieces with D3-System
- Crown with D3-System

SERVICE

General advice

To preserve the water resistance for as long as possible, the watch should be rinsed whenever it has been in contact with seawater, chemicals, etc. If your watch is frequently worn in water or underwarter, we recommend having its water resistance checked at yearly intervals.
The watch is designed to withstand high levels of mechanical wear and tear and is shock resistant as per DIN 8308. Nevertheless, it goes without saying that continual mechanical stress in the form of impacts or vibration will affect its durability. Care should therefore be taken to protect your watch from unnecessary wear and tear. It is only possible to judge how well the watch keeps time after it has been in operation for approximately eight weeks, since it takes that long for the working mechanism to become adjusted, especially in view of the fact that everybody has different lifestyles and habits. In the event of any excessive deviation, please keep a day-to-day record of its timekeeping over a period of about one week, for example.

Do you have any questions?

Our employees will be pleased to advise you. Simply get in contact with us. We look forward to talking to you.

Telephone: + 49 (0)69 978 414 400
Telefax: + 49 (0)69 978 414 401
E-mail: kundendienst@sinn.de

Should you need to send your watch in to customer service, we need to ensure the process goes smoothly. We ask that you please include the following information:

- Name, address, e-mail address and fax number (where applicable) and a daytime telephone number.
- A detailed description of the problem. What is the exact nature of the defect? At what time does the problem arise? How often does the problem occur?
- Wherever possible, please state the date of purchase and your customer number (indicated on the invoice) or enclose a copy of the invoice.

For information about the process, please refer to the section entitled 'Repairs' in our general terms and conditions of business. You'll find our general terms and conditions of business on our website **www.sinn.de/en.** We would be happy to send you a copy of the general terms and conditions, or you can contact our customer service department directly. For insurance reasons, we strongly recommend sending us any return goods by registered parcel post. As an alternative for customers in Germany, there is also the option of a collection service covered by transport insurance, on request. To ensure your request is dealt with smoothly, please call our customer service department! We regret that we are unable to accept deliveries with unpaid postage!

Please send your watch to the following address:
Sinn Spezialuhren GmbH
Kundendienst
Im Füldchen 5–7
60489 Frankfurt am Main
Germany

Sinn

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Bilder Seite 10,12,13 und 31, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Prof .Dr. Ernst Messerschmid

Pictures page 10,12,13 and 31, Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Prof .Dr. Ernst Messerschmid

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Technische Änderungen vorbehalten.
Technical specifications are subject to changes.