



SERIES 144



*Sinn*


SPEZIALUHREN ZU FRANKFURT AM MAIN





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## 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 depend on it.

They all swear by the performance, resilience and durability, as well as the quality and precision of our watches. That is why the world's largest classification society DNV GL (formerly Germanischer Lloyd, Hamburg) regularly tests and certifies the water and pressure resistance of our diving watches.

Selected pilot watches are tested and certified by independent institutions according to the DIN 8330 Horology – Aviator watches in an extensive and complex type and unit verification process. This ensures that a DIN 8330-compliant pilot watch is a suitable all-round replacement for the on-board timekeeping instruments available to pilots. 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,

A handwritten signature in black ink, appearing to read 'L. Schmidt', with a stylized flourish at the end.

Lothar Schmidt



*Sinn*

ENGINEERING OF TECHNOLOGY IN MEAT

*Sinn*

AN INNOVATION COMPANY

## 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.

### **Technical innovations**

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 of up to 80,000 A/m. 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 firefighters, for special police units and border patrol guards. 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.

## Innovations in endurance testing

The world's largest classification society for maritime safety DNV GL (formerly Germanischer Lloyd, Hamburg), has been testing our diving watches for pressure and water resistance since 2005. As part of DNV GL'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. Selected pilot watches are tested and certified by independent institutions according to the DIN 8330 Horology – Aviator watches in an extensive and





complex type and unit verification process. This ensures that a DIN 8330-compliant pilot watch is not only a suitable all-round replacement for the on-board timekeeping instruments available to pilots, but is also capable of remaining unaffected by the physical stresses of flight, posing no risk potential for the crew or aircraft, and demonstrating compatibility with other on-board instruments.

The Temperature Resistance Technology keeps mechanical watches performing at temperatures ranging from  $-45\text{ }^{\circ}\text{C}$  to  $+80\text{ }^{\circ}\text{C}$ . This technology has proven its worth in the EZM 10 TESTAF, for example, used as part of the official approvals procedure for Airbus Helicopters (formerly Eurocopter) EC 145 T2 high-performance helicopter. The 303 KRISTALL is impressive proof of the functional reliability of our watches under the toughest climatic conditions. Equipped with Temperature Resistance Technology, the chronograph passed the acid test at the Yukon Quest, the world's most demanding dogsled race. The 203 ARKTIS passed its Arctic endurance test on the wrist of extreme diver Mario M. Weidner, withstanding all dives in the freezing cold waters of the Arctic Ocean above 81 degrees latitude. Both watches were worn on top of protective clothing. The real test was in the extreme temperature fluctuations between water and land – a test that the 303 KRISTALL and the 203 ARKTIS passed with flying colours.

Image: All of the technical details of our watches are documented by tests. This system of assessment has been specially designed for certification of the pressure resistance of our diving watches by DNV GL (formerly Germanischer Lloyd, Hamburg), the world's largest classification society for maritime safety.

## Workshop modifications

From the robust case and the polished crystal to the exquisitely decorated movement, we make sure that each and every detail in our watches is fit for purpose. In addition to our technology, the heart of any SINN watch is the fascinating mechanical movement. That is why we rely only on selected renowned manufacturers.

“SZ movements” is the name given to our movement modifications. The results are high-quality calibres characterised by impressive features. An example of this is the SZ04 with regulateur for the 6100 REGULATEUR series.

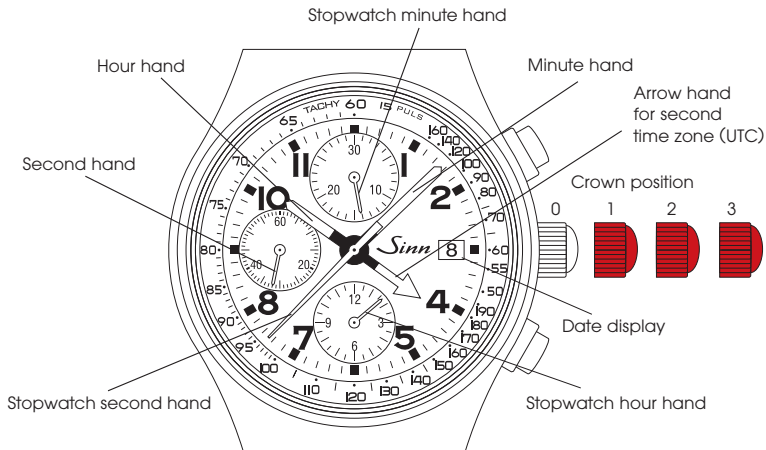
The model series 140 and EZM 10 uses our proprietary chronograph development, the SZ01. It was modelled on the Lemania 5100 calibre used in the EZM 1. One of the biggest differences between the SZ01 and the Lemania 5100 is the former’s stopwatch minute display. This feature now makes it even easier and quicker to record stop times more accurately. The aim of this modification was to significantly improve the readability of the chronograph function.

The SZ calibres 02, 03, 05 and 06 are a modification of the SZ01 movement, characterized by an off-center 60-minute counter. The 60-minute scale of the stopwatch minute counter is much simpler and more intuitive to read than the 30-minute scale commonly found in other watches.



# INSTRUCTIONS FOR USE

## 144 St DIAPAL



### Winding the watch (crown position 1)

The crown is screwable (crown position 0). To loosen the crown, turn it *counter-clockwise* (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. Please make sure the date changes at midnight and not at midday. Just move the hands forward until the date changes. Afterwards you attempt to set the time. We recommend moving the hands past the desired minute marker and then adjusting it backwards. 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.

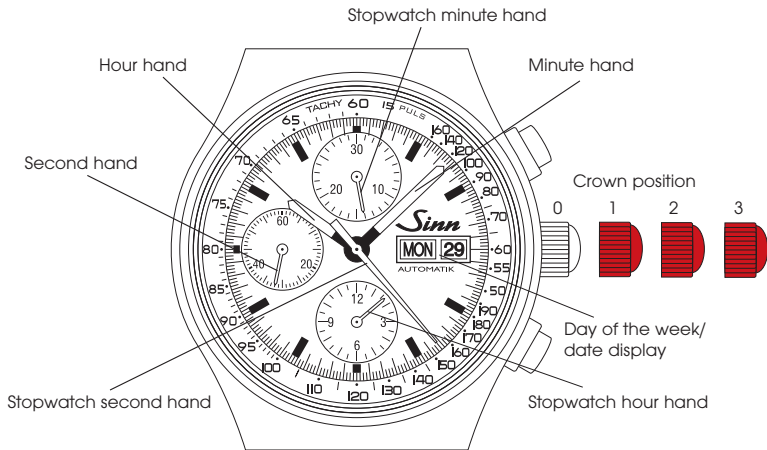
### **Adjusting the second time zone (crown position 2)**

Pull the crown into position 2 and turn it *counter-clockwise* until the correct time appears. The UTC hand stops at hourly intervals. This setting may be adjusted between 9 p.m. and 3 a.m., but it is important to ensure that you are really setting the second time zone in this period by turning the crown *counter-clockwise*! Otherwise the watch could be damaged!

**Please take care to fasten the crown after making adjustments.**

# INSTRUCTIONS FOR USE

144 St Sa



## Winding the watch (crown position 1)

The crown is screwable (crown position 0). To loosen the crown, turn it *counter-clockwise* (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. Please make sure the date changes at midnight and not at midday. Just move the hands forward until the date changes. Afterwards you attempt to set the time. We recommend moving the hands past the desired minute marker and then adjusting it backwards. The movement restarts as soon as the crown is no longer in position 3.

### **Quickset date and day of the week adjustment of the week (crown position 2)**

**Do not use this function between 9 p.m. and 3 a.m.** Crown position 2 can be used to change the date and day of the week quickly and simply. To set the date, pull the crown to the second position and turn it *clockwise* until the current date appears in the display window. To set the day of the week, turn the crown *counter-clockwise* until the desired day of the week is indicated. **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.

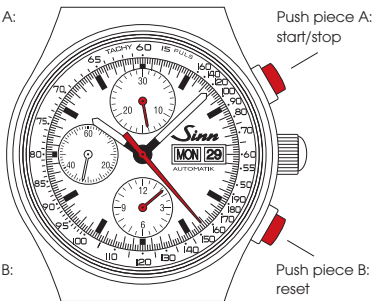
**Please take care to fasten the crown after making adjustments.**

## 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.



144 St DIAPAL



144 St Sa



## COMBINATION TACHYMETER AND PULSE MEASUREMENT SCALE

The tachymeter or pulse measurement scale can be used to read off average speeds between 60 and 190 km/h or pulse rates between 50 and 160 beats per minute. To determine an average speed using the tachymeter scale, first use the chronograph to determine the length of time needed to travel one kilometre. The value indicated by the second hand on the outer ring of the dial then indicates the distance travelled in one hour. (Example: 40 seconds per kilometre equals 90 km/h.)

To read off a pulse rate, measure the length of time required for 15 heartbeats. (Example: 15 heartbeats in 10 seconds equals a pulse of 90.)



144 St DIAPAL



144 St Sa

## Ar-DEHUMIDIFYING TECHNOLOGY

### Indication colours of the drying capsule



Pale blue

Up to 25%  
saturation



Light blue

Up to 50%  
saturation



Medium blue

Up to 75%  
saturation



Dark blue

Drying capsule  
saturated



When the drying capsule is saturated, as indicated by a deep blue colour, 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).

### **Perfect freedom from fogging**

All the watches in this series meet the technical requirements for waterproofness, as set out in standard 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 (**extreme diffusion reduction**) 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).

## ADJUSTING THE LENGTH OF THE WATCH STRAPS

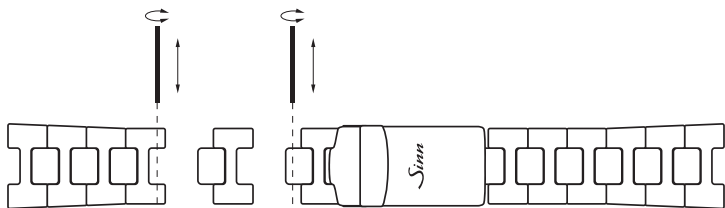
If you don't know how to shorten or lengthen the solid bracelet, please contact your SINN dealer or the watchmakers in our customer service department in Frankfurt am Main. Our customer service employees are also happy to help you over the telephone.

### **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.





# TECHNICAL DETAILS

## 144 St DIAPAL

### **Mechanical Movement**

- Self-winding mechanism
- Hand adjustment with stop-second function
- 28,800 semi-oscillations per hour
- Anti-magnetic as per DIN 8309

### **Functions**

- Hours, minutes, subsidiary seconds
- Second time zone on a 12-hour basis
- Chronograph
- Date display
- Tachymeter / Pulsometer scale

### **SINN Technologies**

- DIAPAL Technology
- Functionally reliable from  
–45 °C up to +80 °C
- Ar-Dehumidifying Technology

### **Watch Case**

- Stainless steel, bead-blasted
- Sapphire crystal on front
- Case back screw-fastened
- Transparent back made of sapphire crystal
- Crown screwable
- Meet the technical requirements for waterproofness, as set out in standard DIN 8310
- Pressure-resistant up to 20 bar
- Low pressure resistant
- Band lug width 20 mm
- Case diameter 41 mm

### **Dials and Hands**

- Numbers and indices coated with luminescent colour
- Hour, minute and hand for second time zone coated with luminescent colour





# TECHNICAL DETAILS

144 St Sa

## **Mechanical Movement**

- Self-winding mechanism
- Hand adjustment with stop-second function
- 28,800 semi-oscillations per hour
- Anti-magnetic as per DIN 8309

## **Functions**

- Hours, minutes, subsidiary seconds
- Chronograph
- Date display
- Day of the week display
- Tachymeter / Pulsometer scale

## **SINN Technology**

- Optionally: Ar-Dehumidifying Technology

## **Watch Case**

- Stainless steel, bead-blasted
- Sapphire crystal on front
- Case back screw-fastened
- Transparent back made of sapphire crystal
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- Meet the technical requirements for waterproofness, as set out in standard DIN 8310
- Pressure-resistant up to 20 bar
- Low pressure resistant
- Band lug width 20 mm
- Case diameter 41 mm

## **Dials and Hands**

- Indices coated with luminescent colour
- Hour and minute hand coated with luminescent colour



# ADVICE

## **Water resistance**

In its original condition, your watch fulfils the technical requirements of water resistance according to DIN 8310. The static compressive stress of your watch is given in bar. Each and every one of our watches is tested for water resistance. However, in everyday use it is important to note that seals can suffer from wear and ageing over time due to a wide range of factors which arise when wearing a wristwatch. We therefore recommend having the water resistance checked at least once a year. To ensure your watch retains its water resistance for as long as possible, rinse it with tap water if it comes into contact with seawater, chemicals or the like. Continual mechanical stress in the form of shocks and vibrations can also not only reduce water resistance, but also increase wear and tear of the movement. Care should therefore be taken to protect your watch from unnecessary impacts.

## **Accuracy**

The measured results of the watch's rate are always "snapshots" taken under laboratory conditions. For this reason, we also take each owner's individual movements into account when making a specific regulator correction. It is therefore only possible to judge the accuracy of your watch after it has been in operation for approximately eight weeks. In the event of a deviation, please keep a daily record of its timekeeping over an extended period, for example one week.

## **Do you have any questions? Our employees will be pleased to advise you.**

Telephone: + 49 (0)69/97 84 14-400

Telefax: + 49 (0)69/97 84 14-401

E-mail: [service@sinn.de](mailto:service@sinn.de)



## SERVICE

### **Does your SINN watch need an inspection, repair, retrofitting or reconditioning?**

If possible, please use our service order form. For information about our service order form, please refer to the section entitled "Customer Service" on our website [www.sinn.de/en](http://www.sinn.de/en) and to the section entitled "Servicing and repairs" in our general terms and conditions at [www.sinn.de/en](http://www.sinn.de/en). We would be happy to send you a copy of the general terms and conditions.

Our international partners generally offer on-site service. However, should they be unable to provide a certain service, they will organise the safe dispatch and return of the SINN watch to our manufactory in Germany. Please be aware that our partners will wait until they have a sufficient number of SINN watches before they post a shipment, in order to keep transport costs and customs duties to a minimum. This will increase the processing time.

Alternatively, you can send your SINN watch to us directly. You will be required to cover the postage costs for the delivery and return shipment, which vary depending on the country. For insurance reasons, we strongly recommend sending us any return goods by registered parcel post. We regret that we are unable to accept deliveries with unpaid postage!

In case you have a chance to drop off your watch directly at our office in Frankfurt am Main we look forward to your visit. Please make a note of our opening times.

**For information about our service, please refer to the section entitled "Customer Service" on our website [www.sinn.de/en](http://www.sinn.de/en) or +49 (0)69 / 97 84 14-400.**

# *Sinn*

SPEZIALUHREN ZU FRANKFURT AM MAIN

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Technische Änderungen vorbehalten.

Technical specifications are subject to changes.



144 St DIAPAL  
Nachleuchtschema/  
luminous design



144 St Sa  
Nachleuchtschema/  
luminous design