



SERIES 140




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 (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,

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 MADE

Sinn

ENGINEERING OF TECHNOLOGY IN MADE

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 100 mT (= 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 (formerly Germanischer Lloyd, Hamburg), has been testing our diving watches for pressure and water resistance since 2005. As part of DNV'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 (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 model 717 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.

SEVENTEEN
JEWELS

SWISS

Sinn
SZ04



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 10 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 interfaces and solidification responses were investigated, and chemical reactions in the various objects under investigation were analysed,



Shortly before the D1 mission, Prof. 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.

including the effects of weightlessness on 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 extra-planetary 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 programme.



Fascinating view from outer space on the blue planet.

Prof. Dr. Ernst Messerschmid

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.



SERIES 140

The chronographs of the series 140 and 142 belong to 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 D1 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 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 stopwatch hand for improved readability. The bead-blasted stainless steel case is surface-hardened with TEGIMENT Technology, making it especially scratch-resistant. The 140 series incorporate Ar-Dehumidifying Technology to increase the functional reliability and prevent fogging.

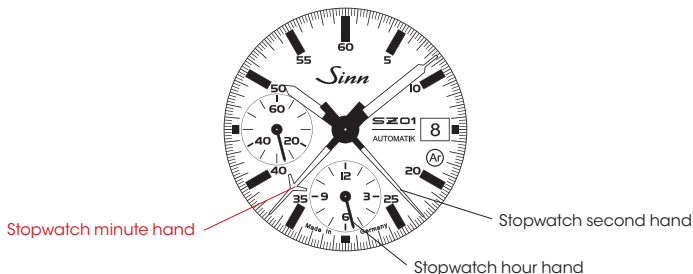


THE SINN SZ01

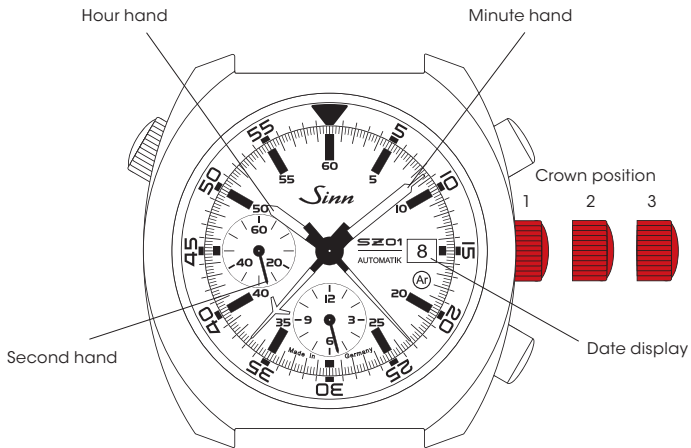
The **SZ01** movement has been specially developed by **SINN**.

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 jump 60-minute stopwatch 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.



INSTRUCTIONS FOR USE



Winding the watch (crown position 1)

The movement is wound manually by turning the crown *clockwise*. Under normal circumstances, a few turns of the crown are enough to start the movement. We recommend 20 full turns of the crown for the initial use. 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 rewind it. About 40 turns of the crown by hand will wind up the watch completely. Because the winding mechanism of your watch is designed for automatic winding with minimal winding speed, the watch should be wound at a moderate, consistent speed when winding by hand to avoid damaging the movement.

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)

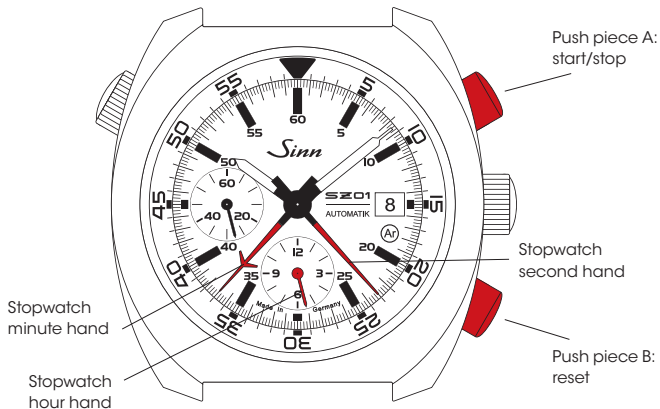
Do not use this function between 9 p.m. and 3 a.m. Set the crown in position 2 and turn it *clockwise* until the correct date appears in the date display window.

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.

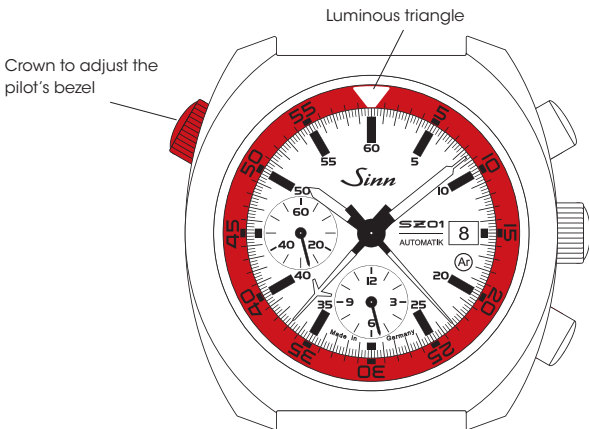
Using the chronograph to measure time

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.



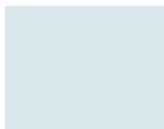
Using the pilot's bezel to measure time

The pilot's bezel can be moved manually in both directions and is adjusted with the crown in the 10 o'clock position. 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.



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.



Warning

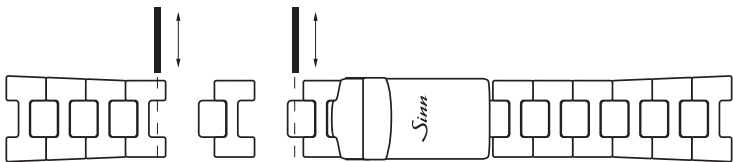
Safety note!

Thread-locker (AN 302-42 medium-tight) contains:

2-hydroxyethyl methacrylate, cumene hydroperoxide.

May cause an allergic skin reaction. May cause respiratory irritation.

Wear protective gloves. UFI: 51T6-80C3-800Q-SCR2





Luminous design

TECHNICAL DETAILS

Mechanical Movement

- SINN Movement SZ01
- Self-winding mechanism
- 28 bearing jewels
- 28,800 semi-oscillations per hour
- Hand adjustment with stop-second function
- 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
- Indices coated with luminescent colour
- Hour and minute hand coated with luminescent colour

Watch Case

- 140 St: Case made of stainless steel, bead-blasted
- 140 St S: Case made of stainless steel with Black Hard Coating
- Sapphire crystal glass in front, anti-reflective on both sides
- Case back screw-fastened, nickel-free
- Meet the technical requirements for waterproofness, as set out in standard DIN 8310
- Waterproof and pressure-resistant up to 10 bar
- 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



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



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 and to the section entitled "Servicing and repairs" in our general terms and conditions at 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 or +49 (0)69 / 97 84 14-400.

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SPESIALUHREN ZU FRANKFURT AM MAIN

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Bilder Seite 12-15 Deutsches Zentrum für Luft- und Raumfahrt e.V. (DLR), Prof. Dr. Ernst Messerschmid
Pictures page 12-15 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.

