



WAS ESTABLISHED



ROLEX  
PERPETUAL  
CALENDAR

28

SEASWELLER  
12800 ft - 3910 m  
SUPERLATIVE CHRONOMETER  
OFFICIALLY CERTIFIED

50

40



# ***THE BEAST FROM 2,000 FATHOMS***

*Rolex says its latest Sea-Dweller is water-resistant to 3,900 meters. Can the new Deepsea model really stand the pressure?*

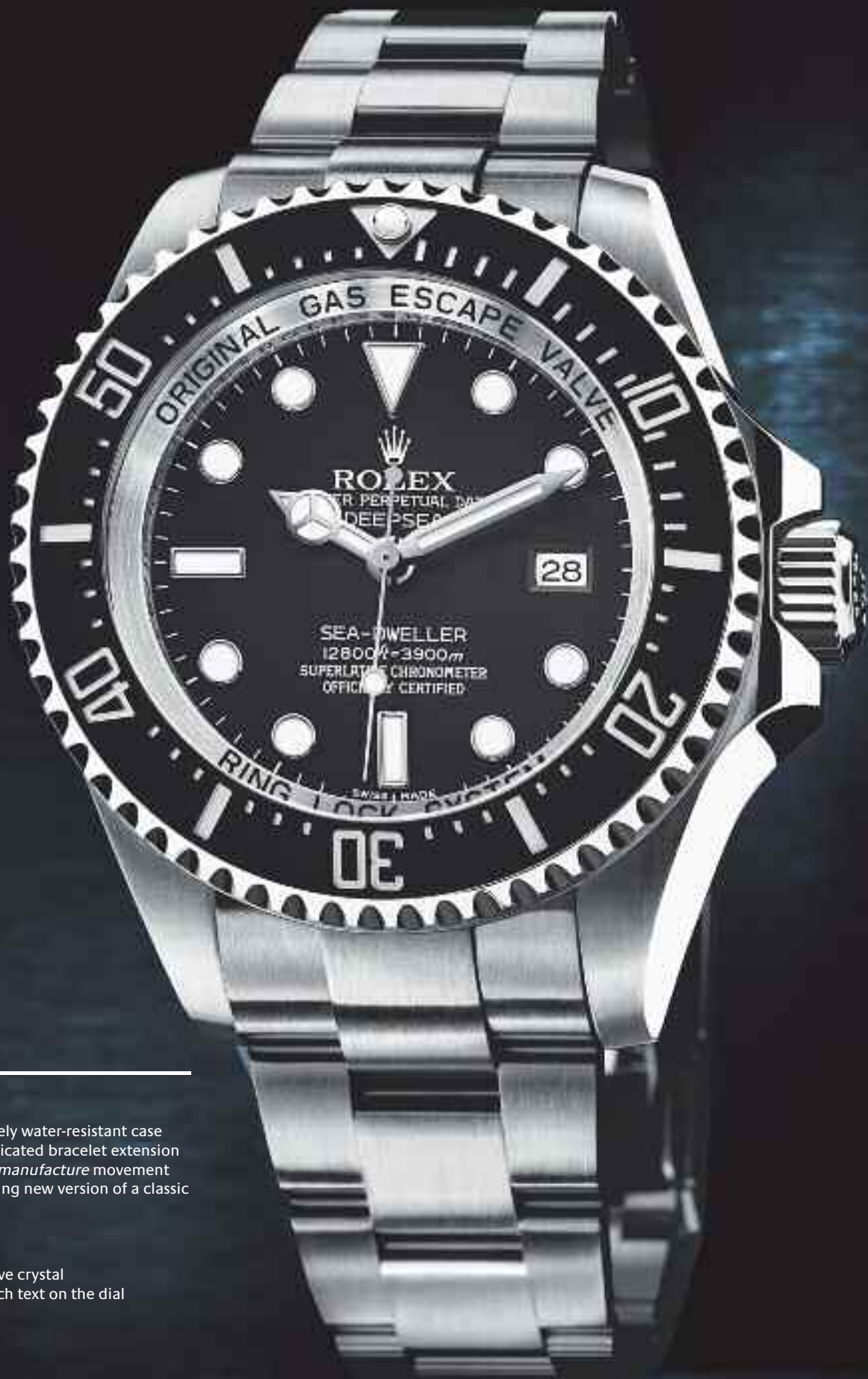
*BY JENS KOCH*



Rolex has been making water-resistant watches since 1926, when it introduced the world's first truly impermeable case, the Oyster. In 1953 Rolex presented its first divers' watch, the Submariner, which had a rotating bezel and a water-resistance level of 100 meters (which it increased to 200 meters just a year later).

At the same time, Rolex was developing a watch for even greater depths: the Deepsea Special. Between 1953 and 1960, the watch took part in several deep-sea expeditions while fastened to the outsides of submarines. The watch's high point (or, rather, its low point) was on January 23, 1960, when Swiss scientist-adventurer Jacques Piccard and U.S. Navy lieutenant Don Walsh guided their bathyscape, the Trieste, to a depth of 10,916 meters (about 35,800 feet) in the Marianas Trench. Their descent took them to a point just a few meters above the very bottom of the trench, which is the deepest depression in the earth's surface. The Deepsea Special sustained no damage during the dive. Several Deepsea Special watches were manufactured, although the model was never put into series production. With its semi-spherical crystal and thickness of 35 millimeters, it was too big and bulky for daily use, even by today's standards.

In 1971, Rolex launched the Sea-Dweller, a modified version of the Submariner that incorporated a new feature: a helium release valve. Its case was so sturdy it could withstand water pressure equal to 610 meters (a level that has since been doubled, to 1,220 meters).



### Pros

- + Extremely water-resistant case
- + Sophisticated bracelet extension
- + Sturdy *manufacture* movement
- + Appealing new version of a classic design

### Cons

- Reflective crystal
- Too much text on the dial

*Rolex Sea-Dweller Deepsea*

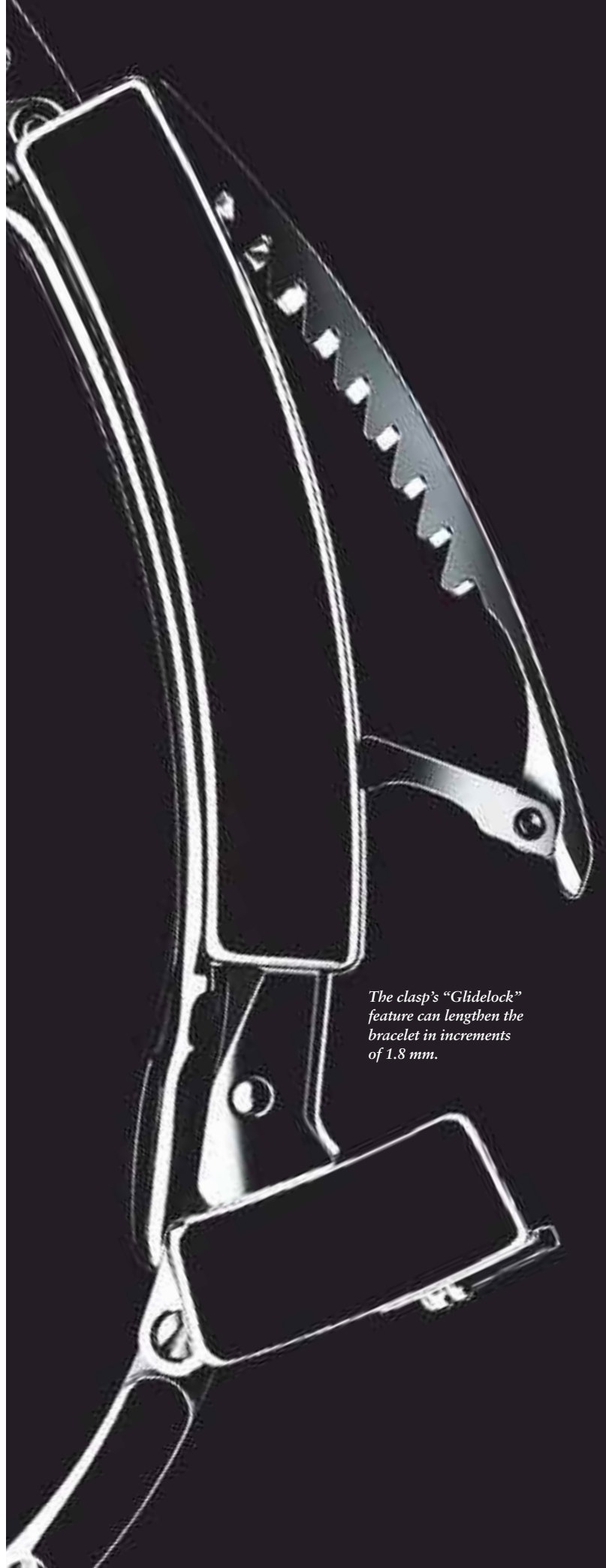
Last year, Rolex launched the latest version of the Sea-Dweller, one that pays homage to the watch that plunged into the Marianas Trench half a century ago. Called the Sea-Dweller Deepsea, its water-resistance level, 3,900 meters (12,800 ft.), is the highest of any mechanical watch in the world.

Indeed, increasing a watch's water-resistance is no great trick if you're willing to make the case as thick as need be, and increase the watch's total dimensions by a commensurate size. But that's not the path Rolex took. The company wanted the Deepsea to be a wearable watch. Its diameter of 43 millimeters and thickness of 18 millimeters, both within the current range of "normal," are proof of Rolex's success. Moreover, the Deepsea is also very comfortable to wear, making it an excellent choice for everyday use: a rare quality in an "extreme" sports watch.

Combining such a high level of water-resistance with wearing comfort required a redesign of the entire case. Rolex developed and patented what it calls the "Ring Lock System," which consists of three pressure-absorbing elements: the 5.5-millimeter-thick sapphire crystal, the 3.28-millimeter-thick Grade 5 titanium caseback, and a ring, made of BioDur 108 steel, set inside the case middle as extra support for the crystal and caseback. BioDur 108 has a high nitrogen content, which makes it extremely strong and corrosion-resistant. The watch case itself is made of 904L steel. Rather than being screwed on, the caseback is pressed against the inner ring by a threaded ring, which is also made of 904L steel.

The materials were selected carefully for their superior hardness and strength. They will not significantly deform under pressure nor will they easily break. BioDur is about three times as strong as the steel used for the case, and Grade 5 titanium — a titanium alloy with vanadium and aluminum — is four times as strong. This complex design makes it possible to create a case that is more than 10 percent thinner than a case made the traditional way would be.

*THE IMPRESSIVE ENGINEERING  
FEAT OF THE DEEPSEA IS THAT,  
DESPITE ITS VERY HIGH  
WATER-RESISTANCE, IT'S SMALL  
ENOUGH FOR EVERYDAY WEAR.*



*The clasp's "Glidelock" feature can lengthen the bracelet in increments of 1.8 mm.*



A 904L steel ring secures the titanium caseback.

## SPECS

### ROLEX SEA-DWELLER DEEPSEA

**Manufacturer:** Montres Rolex SA, Rue François-Dussaud 3-7, CH-1211 Geneva, Switzerland

**Reference number:** 116660

**Functions:** Hours, minutes, seconds, date display; hack mechanism

**Movement:** Caliber 3135, automatic; 28,800 vph; 31 jewels, Kif shock absorption; fine regulation via Microstella screws on the balance; Glucydur balance; blue Parachrom hairspring with Breguet overcoil; COSC chronometer; 48-hour power reserve; diameter = 28.5 mm; height = 6 mm

**Case:** Stainless steel 904L; sapphire crystal; helium escape valve; Triplock crown; screw-down caseback; pressure system consisting of a sapphire crystal, inner ring of BioDur 108 and caseback section of Grade 5 titanium; water-resistant to 3,900 meters

**Strap and clasp:** Stainless steel 904L, folding clasp with safety catch and 10-step extension system and second fold-out extension piece

**Rate results:** (deviation in seconds per day)

Dial up	0
Dial down	+2
Crown up	0
Crown down	+3
Crown left	-2
Crown right	+4
Greatest rate deviation:	6
Average deviation:	+1.2
<b>Average amplitude:</b>	
Horizontal positions	309°
Vertical positions	287°

**Dimensions:** Diameter = 43 mm, height = 18 mm, weight = 220 g

**Price:** \$9,250

The Deepsea is actually even more water-resistant than its dial indicates. Each watch is tested to a water-pressure level of 4,900 meters (over 16,000 ft.), 25 percent higher than the level Rolex guarantees. In designing machines capable of testing to such high water-resistance levels, Rolex got help from the well-known French diving-equipment company Comex, with which it had collaborated in developing the original Sea-Dweller.

We subjected a Deepsea to our own pressure test by submerging it for 15 minutes at a pressure corresponding to a depth of 3,900 meters. The Deepsea continued to run normally under this extreme pressure and did not suffer any damage or water leakage. Even when the watch was exposed to a water temperature of 39° F there was no condensation under the crystal, which would have indicated moisture inside the case.

**THE NEW SEA-DWELLER DEEPSEA** incorporates many improvements over prior Sea-Dwellers. In addition to the case, the bracelet is also made of 904L steel — more difficult to machine, but less likely to be corroded by saltwater than is the more common 316L steel. The bracelet can be extended in two ways: first, by using the 1.8-centimeter fold-out section (what Rolex calls the “Fliplock” feature), and, second, by using a new device that the company calls the “Glidelock.” This latter enables you to lengthen the bracelet in increments of 1.8 millimeters, up to a total of 1.8 centimeters, without taking the watch off your wrist. First you open the clasp, then lift up the middle section and extend the bracelet to the length you want. The individual parts of the folding clasp have been finished so precisely that the clasp appears as one with the bracelet links. The clasp opens very easily, thanks to a patented lever mechanism. Both bracelet and clasp have a very solid feel. The latter no longer has the “tinniness” that was so often criticized in earlier folding clasps. Rolex has given the tops of the case and bracelet a satin finish and the sides a highly polished one.



*The unidirectional  
bezel is made of  
scratch-resistant  
Cerachrom.*

30

RING LOCK SYSTEM

SWISS MADE

*THE DESIGN OF THE DIAL  
HARKS BACK MORE THAN 50  
YEARS. THE NEW CASE, WITH ITS  
CERAMIC BEZEL, GIVES THE  
DEEPSEA ITS MODERN LOOK.*

The unidirectional diving bezel is a shining example, quite literally, of another innovation: the markers and numerals on the bezel are filled with platinum that has been applied using a PVD technique that Rolex has patented. The ring itself is made of Cerachrom, a scratch-resistant, high-tech ceramic. Depending on how the light hits it, it can look either black or dark gray. There is no comparing this new bezel to the earlier one, which had an aluminum insert that could quickly lose its looks. Also unlike earlier versions, the new bezel has minute markers all the way around it, not just between the “12” and “3.” The bezel’s smoothly turning, clean, half-minute increments click just like the combination lock of a vault.

The shape of the bezel has also been modified and now gently slopes downward at the edge. There is a virtually seamless transition to the crystal, which is now slightly domed to make it more resistant to water pressure. Unfortunately, the crystal is not nonreflective and is just as shiny as the bezel. Readability is guaranteed, however, by the matte surface of the dial — a departure from the shiny black dials of previous Rolex divers’ watches. The hands are curved and never appear black, as some flat hands do in certain light. As on all Rolex watches, the hands and markers are made of gold (white gold, in this instance). They are slightly enlarged, just as on the green-bezeled Submariner that Rolex introduced in 2003 to mark that model’s 50th anniversary. One brand-new feature is that the luminous material on the hands, markers and zero index on the bezel now glows blue rather than green. The advantage for the diver is that water absorbs long-wave light better than short-wave light, so blue light is more easily discernible underwater. Several other design features — including the “Mercedes hand” for the hour, the round hour markers, the line markers at 6 and 9 o’clock and the triangle at 12 o’clock — were inspired by the original Submariner.

**DESPITE THE HISTORICAL** dial design, the Deepsea has a much more modern look than its predecessor, due to the more contemporary size, the curved crystal, the high-tech bezel and the visible inner ring of the Ring Lock System. The print on the dial is a bit distracting. As is standard on Rolex watches, it reads “Superlative Chronometer Officially Certified,” rather than simply “Chronometer.” And there’s more text above and below that: the model’s rather long name, its water-resistance level in feet and meters, and the labels “Original Gas Escape Valve” and

**SCORES**

**ROLEX SEA-DWELLER DEEPSEA**

**Bracelet and clasp (max. 10 points):** The extremely sturdy folding clasp is particularly striking due to its sophisticated extension piece and excellent finish. **10**

**Operation (5):** The large screw-down crown is easy to use. A hack mechanism and quick date correction make setting the watch simple. **5**

**Case (10):** A well-designed case with special materials makes this the most water-resistant mechanical watch on the market. Great finishing and attractive alternating satin and polished surfaces. **10**

**Design (15):** The Rolex Submariner has been a model for many divers’ watches for more than 50 years, and has influenced the look of the Sea-Dweller. Modern touches include its new size, curved crystal and ceramic bezel. **14**

**Legibility (5):** Easy-to-read hands, with a generous application of luminous material and excellent contrast, ensure superior readability under all conditions. **5**

**Wearing comfort (10):** Despite its thickness, the Deepsea is comfortable to wear. It’s not too heavy and the strap can be adjusted perfectly on your wrist. **9**

**Movement (20):** The in-house caliber 3135 is both sturdy and accurate, and Rolex’s own hairspring improves both characteristics. **18**

**Rate results (10):** Runs slightly fast on the wrist and as a measured average. A loss of two seconds in one position prevents a higher score. **8**

**Value (15):** Though the price is high compared to its predecessor, it reflects many improvements. Plus, this Rolex can always be resold at a comparable price. **14**

**TOTAL: 93 POINTS**



*EACH WATCH IS TESTED TO A  
WATER-PRESSURE LEVEL OF  
4,900 METERS, A HIGHER LEVEL  
THAN ROLEX GUARANTEES.*

“Ring Lock System.” But all this verbiage is only a minor drawback: overall, the design is a success.

Nor does the movement leave much room for improvement. The in-house caliber 3135 is one of the most sturdy and accurate automatic movements available. The balance bridge (whose height can be adjusted with two knurled nuts), the red anodized reversing wheels and the relative thickness of the movement ensure ruggedness and longevity. The watch has a free-sprung balance with regulating screws. The hairspring is made of Parachrom, which is produced by fusing the metals niobium and zirconium. Parachrom has proven to be resistant to magnetic fields and shocks. Rolex also incorporates oils it has developed itself for specific movement components.

Though hidden beneath the metal caseback, the movement also has much to offer visually: rhodium-plated and perlage finishes on the bridges, rotor and automatic bridge; a sunburst finish on some of the wheels; beveled and polished edges and polished screw heads.

On the timing machine, the Deepsea showed rate results that were good, though not perfect. The average deviation was only +1.2 seconds per day. The greatest difference between all the positions was six seconds. The rate of -2 seconds per day in the “crown left” position, however, meant a deduction of a couple of points from our score. The actual results with the watch on the wrist were better than the results on the timing machine: the Deepsea ran less than one second fast per day.

Setting the time is both quick and simple thanks to the new, larger dimensions of the Triplock crown (the crown is named for its three water-resisting seals) and the movement’s hack mechanism. The watch has a quick-set device for the date display, which at midnight jumps instantaneously to the next day.

It must be noted that this watch’s price is much higher than that of any other Rolex steel sports model. The watch weighs in at \$9,250, which is about 45 percent more than the previous Sea-Dweller. Still, the price is justified by the long list of improvements: the scratch-resistant bezel, the solid clasp with its finely stepped extension, the special in-house hairspring and especially the new case, with its refined construction and tremendous water-resistance. The fact that the Rolex Deepsea can dive deeper than any other mechanical watch makes it a real draw for Rolex fans. And the fact that, despite its impressive water-resistance, it remains a good watch for everyday wear makes it interesting for all watch enthusiasts. ○



*Rolex's Caliber 3135 features elegant finishing on the bridges, rotor and wheels.*