

SPLASH OF



*We asked a real diver to test four divers' watches — from **Cuervo y Sobrinos**, **TAG Heuer**, **Oris** and **Doxa** — and find out how they perform under water.*

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FOTODESIGN

THE TITANS





It's important to be able to set the bezel to the precise minute with wet hands or gloves right before the dive begins, diving instructor Dirk Sonntag says.

What must a true divers' watch include, regardless of price? A water-resistance guarantee of at least 200 meters; clear legibility of the time, especially minutes; and a perfectly functioning divers' bezel. The bezel should have a precise minute scale, plus enough luminous material to be legible in the dark, and be simple to operate. The watch must be easy to fasten to the wrist, even over a wet suit.

We enlisted the aid of diving instructor Dirk Sonntag to test four mechanical divers' watches, priced from \$2,000 to \$4,000, and see how they measure up.

SONNTAG HAS BEEN diving since 1997 and has more than 430 dives under his belt. He was certified as an instructor in 2009. Sonntag knew what we were looking for because, he said, "Time plays an essential role under water; if I can't read it, things can get risky." He is familiar with the now omnipresent dive computer but explained, "Most divers take a second watch along on a dive in case the computer fails. Anyone who dives with a mechanical watch will need at least a depth gauge and a decompression table. Divers calculate their dives in advance and have that data with them." A back-up watch is becoming a trend, Sonntag says, "because the legibility of the computer under water is often not the best."

LEGIBILITY IS THE MOST essential factor in a divers' watch and the first criterion in our practical test. We asked Sonntag to check the legibility of each watch above and below water, as



Sonntag carried out the tests at the diving tower in Esslingen, Germany.



Editors carefully assess the diver's comments while adding their own evaluations.

A photographer documents the diver's underwater test.



well as under different lighting conditions during his test dives, and also to test the functionality of each watch. This meant reading the time; noting whether the seconds hand, which confirms for a diver that his watch is still running, is easy to see; and using the bezel. Sonntag calculated his diving time using the rotating bezel and evaluated its handling and feel. He gave the same attention to the crowns and other operating elements. He inspected the strap and clasp to get a better idea of the general wearability of the watch. His assessment was supplemented by the evaluation of our editors, as well as the results of precise rate testing on a timing machine.

SONNTAG NOTED all the test criteria on a small underwater clipboard. And, because he's not a warm-water diver, he put on all the gear: neoprene wet suit, fins, mask and breathing apparatus. Diving in cold water — his specialty — requires more than just a swimsuit, and the addition of the rest of the diving equipment was helpful in testing the real-life functionality of these watches. Can the strap be extended to fit over a wet suit? Does the clasp still close securely? Can the bezel be turned with wet hands?

We carried out the tests at the new diving tower in the Esslingen sports center in southwest Germany. The water depth in the tower is 5.5 meters and the surface area is five square meters (18 feet and 54 square feet, respectively). There is also a shallow-water area for practicing. It takes 48 hours to fill the tower to its capacity of about 115,00 liters (about 30,000 gallons), and a solar-powered unit heats the water to 25° C (77° F), a bit warmer than our test diver is used to. Let's take the plunge.

Cuervo y Sobrinos Robusto Buceador

While Cuervo y Sobrinos is undeniably a Swiss watch brand — its headquarters are on Lake Lugano and the timepieces themselves are produced in the Jura region — it traces its origins to the Caribbean. It was founded in 1882 by master watchmaker and jeweler Ramon y Cuervo in Havana, Cuba, who ran it with his nephews (*sobrinos* in Spanish) until the Cuban revolution forced the family into exile, and the business into dormancy, where it remained until its revival in 1997.

According to our tester, the brand's Robusto Buceador divers' watch is also most at home in warmer diving regions like the Caribbean. He reported that the bezel on this watch isn't very easy for him, as a cold-water specialist, to handle. The bezel, an inner flange around the dial, is set by means of the crown at 4 o'clock. When the crown is unscrewed, the bezel can be turned in either direction. "I set the bezel right before each dive, usually when I'm already in the water — so with wet hands or especially with gloves on, having to use a crown can make the process rather tricky," Sonntag said. "With the screw-down feature, it's a more complicated operation compared with a rotating bezel, and the water-resistance might not be guaranteed when the crown is open."

He nonetheless praised the handling of the Cuervo y Sobrinos and the bezel's security. The bezel is precisely graduated in minute increments with five-minute numerical markings, but has no luminous markings and no orientation point for setting the dive time.

Everything on the dial itself, however, is nicely illuminated. Both the time display and the luminous point on the seconds hand are easy to see under water, as well as in daylight conditions. The brilliantly shining applied markers on the fine, black carbon dial add to the overall legibility of the watch, as does the radical curvature of the crystal over the entire timepiece. The crystal is rounded just like an air bubble from a divers' oxygen tank. Sonntag was impressed with the design of the watch and the unobstructed view of the dial.

A second crown at 2 o'clock is used to set the time to the precise second, to set the date and to wind the movement. The Robusto Buceador contains a Sellita SW 200 automatic movement, whose rate results are not particularly outstanding. On average it gains 11 seconds per day and fluctuates between +3.2 seconds in the "dial up" position and +18.4 seconds in the "crown right" position.

When Sonntag put the watch on his wrist the first time, he mistakenly assumed that the strap was leather with orange stitching; it's actually natural rubber with



Pros

- + Easy to read day and night
- + Track on divers' bezel
- + Easy operation
- + Comfortable to wear
- + High-quality strap and clasp

Cons

- Bezel hard to operate with wet hands or gloves
- No luminous material on bezel
- Mediocre rate results
- Strap is a little too short
- No divers' extension

SPECS

CUERVO Y SOBRINOS ROBUSTO BUCEADOR

Manufacturer: Cuervo y Sobrinos Habana LLC

Reference number: 2806.1NF

Functions: Hours, minutes, central seconds, divers' bezel, date

Movement: Sellita SW 200, automatic; diameter = 25.6 mm; height = 4.60 mm; 26 jewels; 28,800 vph; 38-hour power reserve; nickel balance; Nivarox hair-spring; Incabloc shock absorber; Etachron fine regulation; decorated with perlage and satin and striped finishes

Case: Stainless steel with domed, non-reflective sapphire crystal; water-resistant to 200 meters

Strap and clasp: Natural rubber with double-folding clasp

Dimensions: Diameter = 43.3 mm; height = 16.3 mm; weight = 131 grams

Price: \$3,900

The Robusto Buceador clearly shows its Caribbean origins.



Our diver liked the rotating ring, and also found the crown very easy to use.



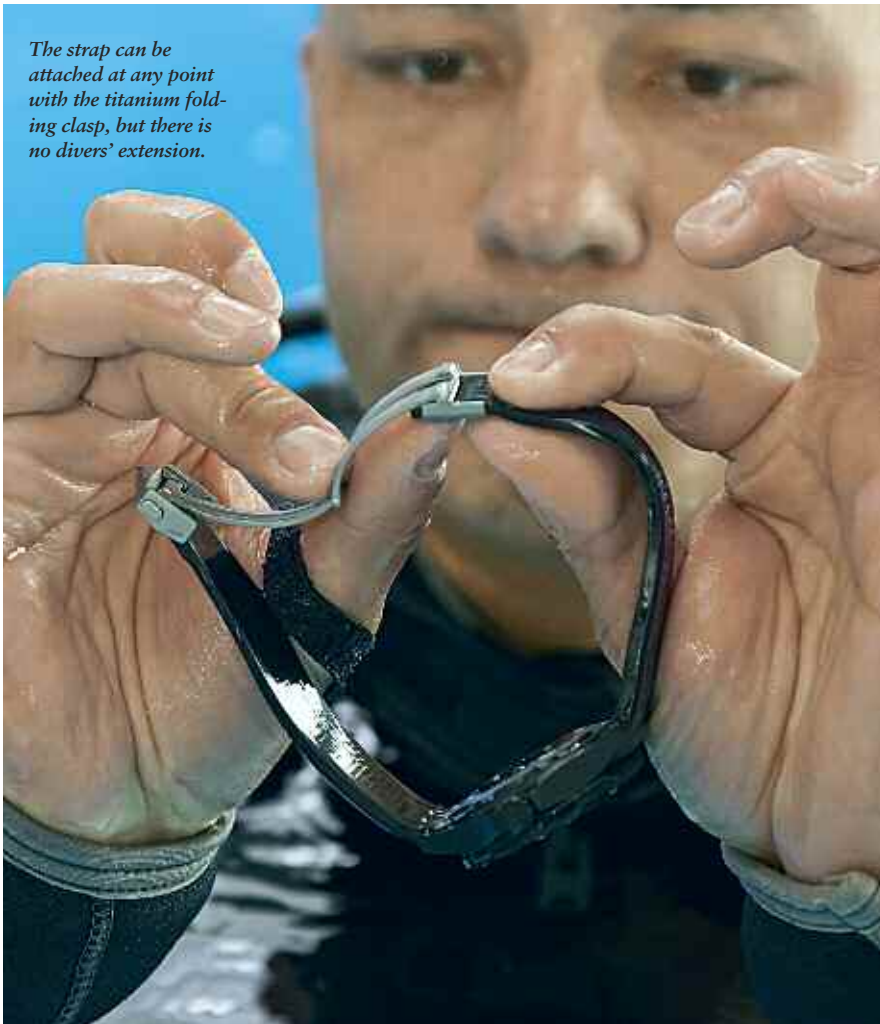
an orange seam. Unfortunately, the strap was a bit too short to fit around his thick neoprene wet suit, but the double-folding clasp made up for this minor deficiency since the watch remains securely in place even when you shut just one side of the clasp. Still, a standard divers' extension wouldn't have been a bad idea. Sonntag was also not particularly impressed with the buttons used to open the clasp, saying that they were not rounded enough to be operated comfortably with the thumb and forefinger.



The divers' bezel cannot be read in the dark, but the time display and rate results are both good.

Despite the extreme curvature of the sapphire crystal, Sonntag found the dial's legibility to be good from all angles.

The strap can be attached at any point with the titanium folding clasp, but there is no divers' extension.



TAG Heuer Aquaracer 500M Calibre 5

The Aquaracer collection is nearly 30 years old. We tested the recently introduced Full Black model to discover if it holds up to the quality standards of previous Aquaracers.

The level of water-resistance, 500 meters, is denoted on the watch in both meters and feet. A notable feature is the sapphire crystal on the screwed caseback, which is made of black PCD-coated titanium. PCD, or Poly Crystal Diamond, is expensive to produce but offers superior protection from wear. The window provides a view of the movement, Calibre 5, whose dark color is a good match for the case. The movement is derived from an ETA caliber; it runs well, with an average daily gain of 3.2 seconds, and shows a maximum deviation of five seconds.

Our test diver praised the watch's legibility, which is helped by the contrasting black and yellow-green elements on the segmented dial. The dial also has striking vertical stripes and hand-applied markers. Slim, baton-shaped hands indicate the time. "It's easy to recognize everything, even in the dark," Sonntag said after his dive, referring to the hands, the markers, the arrow point at the end of the seconds hand, and the orientation point on the bezel. "That's why it's particu-

Pros

- + Easy to read day and night
- + Good rate results
- + Easy operation
- + Comfortable to wear (without wet suit)
- + High-quality strap and clasp

Cons

- Bezel's ratcheting and lack of minute markers
- Strap is too short
- No divers' extension

The Aquaracer 500M Calibre 5 has a black titanium case that is water-resistant to 500 meters.



larly unfortunate that there's no minute track on the bezel." Its absence means that diving times can only be estimated, so the function of the rotating bezel is extremely limited.

The bezel turns counterclockwise in half-minute increments. It is impossible to align the rotating ring precisely with the dial markings, which are themselves so fine they are difficult to make out.

The design of the bezel, which has six raised markers, can be traced back to the earliest Aquaracers. The markers make it easier to grip and turn the divers' bezel, even with wet hands or gloves, as does the bezel's rugged, natural-rubber cover. The cap for the screw-down crown is also rubber, making it, too, easy to grip. The crown requires a bit more pressure than one would expect.

The strap is also made of natural rubber. It is attached with screws in two connectors to both strengthen it and angle it downwards for a better fit on the wrist. One end of the strap can be attached at any point to the titanium folding clasp. Unfortunately, despite this useful feature, the strap is still too short to fasten the watch over a wet suit. There is also no divers' extension in the folding clasp. Many other Aquaracer models have such an extension, so one has to wonder why it is missing on this one.



SPECS

TAG HEUER AQUARACER CALIBRE 5

Manufacturer: TAG Heuer SA

Reference number: WAJ2113.FT6015

Functions: Hours, minutes, central seconds, divers' bezel, date, helium valve

Movement: TAG Heuer Calibre 5, based on ETA 2824-2, automatic; diameter = 25.6 mm; height = 4.60 mm; 25 jewels; 28,800 vph; 49-hour power reserve; nickel balance; Nivarox hairspring; Incabloc shock absorber; Etachron fine regulation; perlage, satin and striped finishes; skeletonized rotor

Case: Titanium with black PCD coating; sapphire crystal; water-resistant to 500 meters

Strap and clasp: Natural rubber with titanium folding clasp

Dimensions: Diameter = 43.5 mm; height = 13.4 mm; weight = 97.5 grams

Price: \$2,700

It's easy to read the time on the Aquaracer, but not if you have to wear it under your wet suit.

Everything you need to see in the dark is illuminated: hands, markers and orientation point on the bezel.





SPECS

ORIS DIVERS TITAN "C" SMALL SECONDS

Manufacturer: Oris SA

Reference number: 643 7638 7454-07 4 24 34TEB

Functions: Hours, minutes, small seconds, divers' bezel, date, helium valve

Movement: Oris 643, based on ETA 2836-2, automatic; diameter = 25.6 mm; height = 5.05 mm; 27 jewels; 28,800 vph; 38-hour power reserve; nickel balance; Nivarox hairspring; Incabloc shock absorber; Etachron fine regulation; satin finishing

Case: Titanium with domed, nonreflective sapphire crystal; water-resistant to 1,000 meters

Strap and clasp: Natural rubber with folding clasp

Dimensions: Diameter = 47.1 mm; height = 16.2 mm; weight = 134 grams

Price: \$2,390

The unidirectional divers' bezel has precise minute markers and is easy to grip and set.

Oris Divers Titan "C" Small Second

The screw-down crown at 4 o'clock on this Oris watch is not for turning the bezel, as on the Cuervo y Sobrinos watch, but for covering a helium valve. The main crown at 2 o'clock, for winding and setting the watch, also has a screw-down security feature. Both crowns are easy to grasp, pull out and screw back into place.

The bezel moves unidirectionally counterclockwise, and its deeply fluted edge makes it easy to grip and turn with wet or gloved hands, above water or below. The minute track runs along the shiny, black ceramic inlay on the bezel, beautifully executed in minute increments with extra markers every five minutes. However, Sonntag noted that there was only one luminous dot for orientation.

He also criticized the bezel for ratcheting in half-minute, rather than full-minute, increments. To set a bezel exactly, the wearer needs a complete minute track on the bezel that corresponds as closely as possible with the track on the dial. A bezel that ratchets in half-minute increments results in an uncertainty of 30 seconds.

On the other hand, the diver praised this watch's legibility. The hands, markers and orientation point on the bezel glow a bright blue. The illuminated small-seconds subdial, located between 7 and 9 o'clock, verifies that the watch is running. Under normal light conditions, the nickel hands and applied hour markers shine atop the matte, black dial, which sports Oris's signature wave pattern.



The Divers Titan "C" was designed with the input of professional divers.



Pros

- + Easy to read day and night
- + Track on divers' bezel
- + Legibility of divers' bezel
- + Easy to operate
- + Comfortable to wear
- + High-quality strap and clasp

Cons

- Ratcheting of divers' bezel

Sonntag sees the Oris as suitable for daily wear.

The minute track is printed on a metal inner flange along the outer edge of the dial. A domed, nonreflective sapphire crystal makes the time consistently easy to read.

The movement inside the Divers Titan "C" is the automatic Oris 643, which is derived from the ETA 2836-2 and modified by Oris to include the red rotor that has become a registered trademark of the brand. The watch's timing performance was excellent. Electronic timing machine results showed a gain of only 1.2 seconds per day, with a maximum rate deviation between the different positions of only 4.5 seconds. A solid titanium caseback hides the movement, but it also has a table for converting meters into feet. The water-resistance rating

is displayed twice, both on the caseback and on the dial.

The multi-piece titanium case is water-resistant to 1,000 meters. The two parts of the rubber strap are attached with screws to the downward sloping lugs on the case's mid-section. The lugs are unique to the Oris brand and require a special tool to remove the strap from them. Sonntag found the rubber strap to be long enough for diving; it can also be trimmed at the ends. The folding clasp provides an extra divers' extension piece. Not spectacular, but "good overall" was the diver's assessment of the Oris Divers Titan. Of the four watches tested, this one came closest to the divers'-watch ideal, and at a reasonable price.



The markers and hands glow blue in the dark. Not to be confused: the orientation point of the bezel and the marker at 6 o'clock.

Multiple tracks and two additional time zones fill the orange dial of the SUB 750T GMT Professional.



The minute hand dominates the dial in the dark, but only one point is visible on the divers' bezel.



Doxa SUB 750T GMT Professional

The Doxa watch we tested is water-resistant to 750 meters and includes a GMT function. Whether or not a divers' watch needs a second time zone (or in this case, a third) is questionable, but this watch's designers have offered the option without losing sight of the primary function of the timepiece as a useful tool for divers.

The time in a second time zone is indicated by a center-mounted fourth hand, which points to a 24-hour track along the edge of the dial. Under normal daylight conditions this large, skeletonized hand is a dominant presence on the dial; in the dark it retreats, appropriately, into the background. The wearer can also set another time zone with the inner flange ring, using the crown at the 2 o'clock position, and set the time-zone hand and the date with the crown at 4 o'clock.

Sonntag criticized the watch for having too many tracks on both the dial and bezel. But he also praised the Doxa's clear legibility, thanks to its bright orange dial, contrasting hands and markers and nonreflective sapphire crystal. The wide minute hand jumps out above the rather diminutive hour hand, especially under poor lighting conditions. The single luminous dot on the seconds hand serves to indicate whether the watch is running. "Too bad that the bezel only has the one luminous dot," said Sonntag, who apparently hoped to see many more.

The diving table, engraved along the outer rim of the rotating bezel, is indicated in feet, which clearly shows that this watch is geared toward Americans. (Doxa watches were designed in the 1960s with the

input of American divers.) Most other countries use the metric system, so a non-American owner of this watch will need to master the conversion of feet to meters in order to use this table. The watch's water-resistance level is given in both feet and meters on the caseback. The inner ring of the bezel shows the minute track — precisely graduated with extra numerical five-minute increments. The ring turns in half-minute steps, though there is no minute track on the dial.

Sonntag was pleased with the handling of the rotating bezel, which was easy both to grip and to turn, and also with the solidly built case that lies snugly against the wrist. The bracelet extends well into the body of the case to prevent this rather weighty watch from feeling top-heavy.

He also liked the bracelet. Its screwed links can be adjusted to the desired length, and you can use the extension piece, which is integrated into the safety folding clasp, to make further adjustments. Sonntag grumbled a bit over the safety catch that needed to be lifted with a fingernail. We have seen other types of clasps from Doxa — with pressure closures and sliding extension pieces — but this one works just fine for this watch.

The watch contains an ETA 2893-2 movement that Doxa has modified and decorated. It showed a substantial rate gain — about six seconds per day on average, ranging from virtually no variation in the dial-up position to a gain of almost 14 seconds in the 6 o'clock position. Doxa could improve the rate with some regulation work. ○



Despite the many scales on this watch, Sonntag could still read the time easily.

Pros

- + Easy to read day and night
- + Track on divers' bezel
- + Easy operation
- + Comfortable to wear
- + High-quality strap and clasp

Cons

- Legibility of divers' bezel
- Overly busy dial

SPECS

DOXA SUB 750T GMT PROFESSIONAL

Manufacturer: Doxa Uhren AG

Reference number: 750.10.P.03

Functions: Hours, minutes, central seconds, divers' bezel, date, GMT

Movement: ETA 2893, automatic; diameter = 25.6 mm; height = 4.1 mm; 21 jewels; 28,800 vph; 42-hour power reserve; Glucydur balance; Nivarox hair-spring; Incabloc shock absorber; Etachron fine regulation; polished screws

Case: 316L stainless steel with domed, nonreflective sapphire crystal; water-resistant to 750 meters

Bracelet and clasp: Stainless steel with safety folding clasp

Dimensions: Diameter = 45.1 mm; height = 13.7 mm; weight = 199 grams

Price: \$2,790



The bracelet and folding clasp are sturdy and easy to operate, but Sonntag had some difficulty with the safety catch.