Cult Classic

There's no doubt that the Rolex Cosmograph Daytona is the world's most avidly sought-after watch. And now that it uses a *manufacture* movement the line has gotten even longer. Just how good is the new Rolex caliber 4130? *WatchTime* compares the new Daytona to the old.

BY RÜDIGER BUCHER


ROLEX
OYSTER PERPETUAL
SUPERLATIVE CHRONOMETER
OFFICIALLY CERTIFIED
COSMOGRAPH
UNITS PER HOUR
ROLEX
OYSTER PERPETUAL
SUPERLATIVE CHRONOMETER
OFFICIALLY CERTIFIED
COSMOGRAPH

A first view beneath the rotor: the clear and orderly arrangement beneath the two bridges is unmistakably evident. The balance-bridge is visible in the foreground.

Waiting lists of several years' duration, usurious black market prices, a demand that perpetually outstrips supply: Rolex's stainless steel Cosmograph Daytona is the world's rarest contemporary wristwatch. And it has been for years: Anyone who wants one must possess monumental patience, as the average wait is about five years, and in some cases has been as long as eight years. A few lucky dealers have been able to get their hands on a Daytona within three years' time, but don't expect us to tell you which ones have been so blessed. And if you don't wish to wait that long you can troll the gray or black markets. Rumor has it that one Daytona fan recently parted with about $15,000 for the privilege of buying one of the new models, nearly three times its original price. This collector could have had the silver/gold version for less money, but obviously paid a premium for the exclusivity. Who can put a price on bragging rights?

Rolex itself fanned the flames at last year's Basel Fair, when the Geneva-based manufacturer debuted its own *manufacture* movement for the Cosmograph. Faithful readers will recall that *WatchTime* already reported on the technical details of the new Rolex caliber in our February

DATA PAGE

Manufacturer: Montres Rolex S. A., Rue François-Dussaud 7, CH-1211 Geneva 24

Model: Cosmograph Daytona (new model)

Reference number: 116520

Functions: Hours, minutes, seconds; chronograph

Movement: Automatic chronograph movement; Rolex caliber 4130; diameter = 30.5 mm; height = 6.5 mm; 44 jewels; 28,800 beats per hour; 72-hour power reserve; Rolex's own spiral balance-spring; Kif shock absorption; bi-directional rotor; fine regulation via Microstella screws, Breguet balance-spring; stop-seconds function; official chronometer with C.O.S.C. certification.

Case: Steel; bezel with engraved tachometer scale; Superluminova; screw-down Triplock crown with flank protection; screw-down push-pieces; fully threaded, screw-down back; sapphire crystal; water-resistant to 10 atmospheres (100 meters).

Wristband and clasp: Oysterlock wristband number 78490 with folding safety clasp and quick-setting function (can be extended approx. 3 mm).

Results of running test

(Deviations in seconds per 24 hours. Values with switched on chronograph function are shown in parentheses)

Dial up:	+2	(+4)
Dial down:	+2	(+2)
Crown left:	+1	(+2)
Crown right:	+4	(0)
Crown up:	+5	(+1)
Crown down:	0	(00
Greatest deviation of rate:	5	(4)
Average deviation:	2	(2)
Average amplitude of the balance:	272°	(247°)

Dimensions and weight: Case's diameter = 40 mm; height = 12.4 mm; weight = 137 grams

Price: $6,000

A second view beneath the rotor: the El Primero offers more for the eye to admire. Downstage: the fourth-wheel. To its right: the balance, where one of the four Microstella screws is visible.

DATA PAGE

Manufacturer: Montres Rolex S. A., Rue François-Dussaud 7, CH-1211 Geneva 24

Model: Cosmograph Daytona (old model)

Reference number: 16520

Functions: Hours, minutes, seconds; chronograph

Movement: Automatic chronograph movement, Rolex caliber 4030 (base caliber Zenith 400 El Primero); diameter = 31 mm; height = 6.55 mm; 31 jewels; 28,800 beats per hour; 54-hour power reserve; Kif shock absorption; bi-directional rotor; fine regulation via Microstella screws, Breguet balance-spring; no stop-seconds function; official chronometer with C.O.S.C. certification.

Case: Steel; bezel with engraved tachometer scale; luminous material was tritium at first, Superluminova was used later; screw-down Triplock crown with flank protection; screw-down push-pieces; fully threaded, screw-down back; sapphire crystal; water-resistant to 10 atmospheres (100 meters).

Wristband and clasp: Oysterlock wristband number 78390 with folding safety clasp but quick-setting function.

Results of running test

(Deviations in seconds per 24 hours. Values with switched on chronograph function are shown in parentheses)

Dial up:	+2	(+2)
Dial down:	+3	(+2)
Crown left:	+4	(+2)
Crown right:	-2	(+2)
Crown up:	+2	(-3)
Crown down:	0	(-1)
Greatest deviation of rate:	6	(5)
Average deviation:	2	(1)
Average amplitude of the balance:	270°	(249°)

Dimensions: Case's diameter = 40 mm; height = 12.6 mm; weight = 120 g

Price: $5,100

2001issue. Now the time has come for a head-to-head comparison between new and old Daytonas. Nothing less will suffice to give our readers the information they want about the specifics and the quality of the changes that have been made. Despite our status as a special-interest watch magazine, we too were obliged to wait in line for our chance to put the new Daytona to the Test. Last January, the long-awaited timepiece finally arrived in our editorial office: the latest Daytona was now in our hands and begging for closer scrutiny.

Rumor has it that one Daytona fan recently parted with about $15,000 for the privilege of buying one of the new models – nearly three times its original price.

Ardent wristwatch fans, and especially the Rolex contingent, have long known that Rolex hadn't used its own complete construction for the movement that powered the earlier Daytonas, but relied instead on the Zenith caliber 400, better known as the El Primero. Of course, Rolex hadn't merely taken Zenith's column-wheel caliber and encased it inside the Daytona without making a few changes. After Rolex got through with it, the Zenith model had every right to its new name: Rolex Caliber 4030. Weighing the pros and cons of the ongoing debate over a balance ticking away at a rapid 36,000 beats per hour, Rolex took a conservative stance: by making a few changes in the gear-train, they downshifted the El Primero's balance to a more stately pace of 28,800 beats per hour. As far as the fine regulation is concerned, Rolex opted for the same solution that they use in all their other movements: the only way to regulate the watch is to alter the balance's centrifugal force by adjust-

ing the four tiny Microstella screws affixed to the interior of the balance wheel's rim. With all of these typical alterations, the Rolex caliber 4030 presents itself as a mature, uncommonly high-performance and unconditionally reliable chronograph movement. After all, Rolex fans surely wouldn't have kept the faith all these years if their sacred object hadn't been worthy of such veneration.

Rolex is the world's best-known watch brand, but the success of this globe-girdling firm isn't solely due to clever marketing or to the inherent dynamism of a big brand name. A decisive contributor to the company's reputation has always been the knowledge that when you lay out your outrageous fortune for a Rolex, you'll get a robust, extraordinarily accurate watch able to cope with all the slings and arrows of everyday life. Rolex movements have always been considered robust, tough and reliable. Some aficionados may have felt that, when compared to such slender thoroughbreds as Patek Philippe or Audemars Piguet, Rolex's products were simple, perhaps even a bit primitive. This was – and is, if anyone still believes it – unfair, and the time has come to proclaim Rolex for the beauty of their watches as well as their toughness and longevity

Rolex fans surely wouldn't have kept the faith all these years if their sacred object hadn't been worthy of such veneration.

Rather than endlessly trumpeting new creations, Rolex has always preferred to optimize existing movements by integrating the insights gained from a wide variety of practical experiences. They're an extremely conservative company. With this tradition in mind, it isn't hard to imagine the initial resistance when one of the firm's technicians said something along the lines of "Okay, let's build a chronograph movement of our own now." But, when Zenith was taken over by LVMH (Louis Vuitton, Moët, Hennessy) luxury group in the autumn of 1999, it didn't take a Sibyl to prophesy that Rolex wouldn't rely much longer on deliveries of the El Primero base caliber. As the press releases announcing the sale were being typed, Rolex's technicians were already nearly finished with their work – not only with the construction of the firm's own caliber, but also with the years of testing that preceded its launch. The new Rolex caliber 4130 debuted at the watch convention held in Basel, Switzerland in March of 2000.

Inner Changes

Compared to the older El Primero, this new chronograph movement makes a far more orderly impression. The winding and stopwatch mechanisms are neatly separated from one another, each beneath its own bridge. The bridges are decorated with the same engravings that had embellished the rotor of the caliber 4030. The start, stop and return-to-zero functions, which are controlled via a column-wheel, are no longer as readily visible as they were on the El Primero, but the new construction is easier to service, and that's one advantage which is of inestimable value to every watchmaker. The decisive attribute of the new movement isn't at all difficult to find: the large fly-back lever is affixed below and beyond the "6." It and its three little arms stand ready, willing and able to intervene with the heart-shaped cams of the 12-hour, 30-minute and clutch wheels whenever the return-to-zero push-piece beside the "4" is depressed. From a technical point of view, the most important difference is that the central stop seconds-hand is returned to zero via the clutch wheel rather than via the central fourth-wheel. This change means that whenever a

The most obvious visual change is in the rings surrounding the three subdials. They're gray now rather than black, which, unfortunately, makes them less legible.

Hard to tell apart from the outside: a side view of the new (left) and the old Daytona.

The construction of the new rotor (below) is flatter, but the toothed wheel's pinion is taller.

stop-time sequence occurs, the sweep seconds-hand begins to run smoothly and without the usual "hop." The result? Measurement of time intervals with split-second accuracy. In the older construction with the horizontal clutch, whenever the stopwatch hand was started, the sharply pointed teeth of the clutch-wheel meshed abruptly with those of the central fourth-wheel in order to engage with the latter and allow it also to be propelled by the fourth-wheel. Depending upon the relative positions of the individual teeth's flanks at the moment when the function is switched on, the distance to be traversed was either shorter or longer, and this difference expressed itself on the dial as a larger or smaller "hop" performed by the stop seconds-hand. This minor imprecision has now been eliminated.

One thing that you might not notice at first glance is that the new model is ever so slightly thinner and nearly 9 percent heavier.

Because the fly-back lever now intervenes in the heart, which is mounted on the more deeply situated clutch wheel, the entire ensemble of subdials had to be shifted slightly upwards (i.e. towards the "12") to provide enough space for the large fly-back lever. This upwards shift could be accomplished without causing any major problems because the caliber 4130 is constructed in the "hunter" style, which means that

WHATS'S BETTER ABOUT THE NEW DAYTONA?

Reference number	116520 rather than 16520
Base movement	+ Rolex's own development, patented (old Daytona: rebuilt Zenith El Primero has been used since 1988)
Caliber type	Hunter-style construction (small seconds above the "6") rather than Lépine-style construction (with small seconds beside the "9")
Movement construction	+ Easier to service thanks to self-contained construction style: clearly divided into winding area and chronograph area (each area under its own bridge)
Balance	+ Greater stability thanks to balance-bridge (old model: balance-cock); height adjustment via screw
Stop-seconds function	+ Yes (old Daytona: no)
Power reserve	+ Increased from 54 to 72 hours (with chronograph switched on: increased from 47 to 66 hours)
Rotor	+ Toothed wheel's pinion is higher, but the rotor itself is lower (2.37 rather than 2.81 mm); ball bearings are integrated more deeply; larger affixing screws; wider heavy metal mass (2.14 rather than 1.92 mm)
Clutch	+ Vertical friction clutch rather than horizontal wheel clutch; this ensures that the stop seconds-hand always starts without a "hop"; intervals can be timed with greater precision
12-hour mechanism	Integrated on the movement side rather than mounted on the dial side (thus decreasing the overall height of the construction)
Case's height	+ Flatter: 12.4 rather than 12.5 mm
Lugs (for strap)	+ More stable: 6 mm rather than old Daytona's 5.5 mm
Tachometer scale	+ Bolder printing
Indices on dial	+ Wider and more modern
Subdials	- Less contrast, thus less legible
Push-pieces	+ Smoother, less resistance to triggering the stop-time function
Wristband	+ "Quick-setting"; virtually no sharp edges remain
Clasp	+ Significantly better quality, more stable treatment than in the past

the small, continuously running seconds-hand doesn't lie along the same line as the winding-stem, but has been shifted 90° to occupy a site above the "6." The axes of the two subdials (the 30-minute subdial beside the "3" and the 12-hour subdial beside the "9") now stand closer to the "12" than do the crown and winding-stem. This arrangement makes it easy to recognize the caliber 4130 simply by looking at the watch's exterior. No matter how the dial may be arranged, these attributes will always distinguish watches that encase the newer caliber from those which enclose its predecessor.

To bear the balance inside the case, Rolex decided not to use the typical solution of affixing the balance-cock to only one end of the plate, but opted instead for a balance-bridge. Two screws attach this bridge to the plate, and a third screw is used to adjust its height. Endogenous vibrations are more likely to occur in balance-cocks but are less apt to trouble bridge-type constructions; a bridge-based construction also means that any vibrations from outside the watch will exert less hurt on the performance of the balance. Even the roughest shocks cannot cause the outer edges of the spiral balance-spring to become snagged in the cock. This snagging is admittedly rare, but it had been known to occur occasionally in the past, with the result that the watch runs several hours too fast each day and is thus rendered essentially useless as a timekeeper until costly repairs are made. It will probably never happen to you, but it's nice to know that a balance-bridge preempts the possibility of this mishap.

WHAT REMAINS THE SAME?

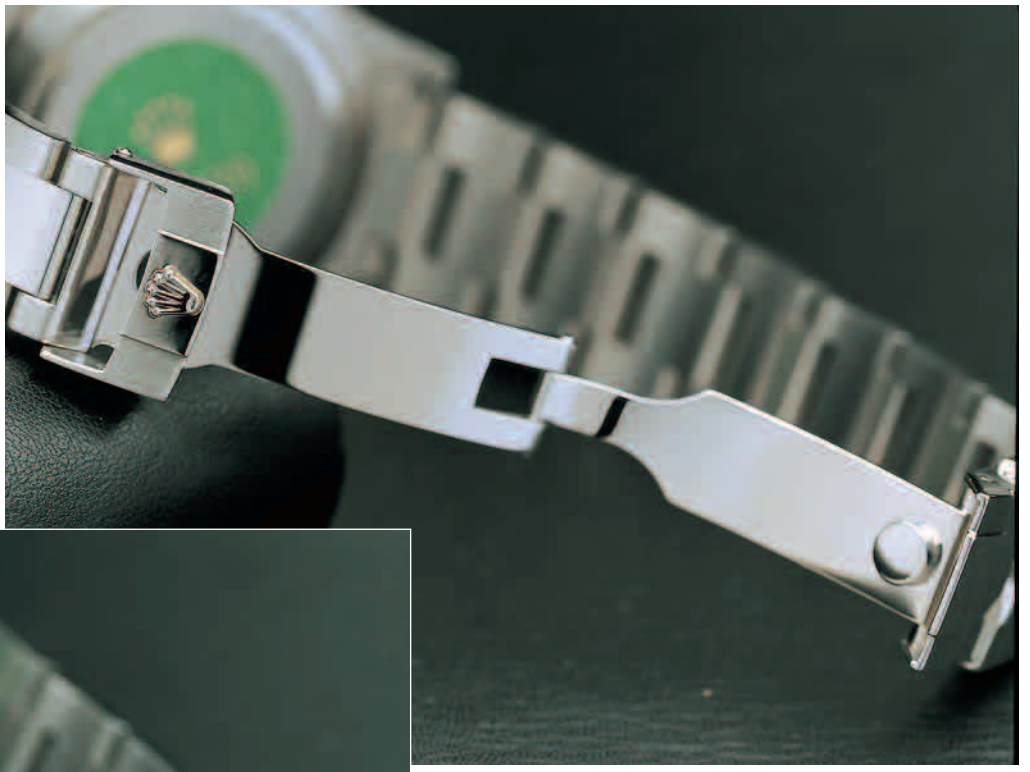
Balance	Glucydur balance with Microstella regulator screws
Balance frequency	28,800 beats per hour = 4 Hz
Balance-spring	Freely swinging Breguet spiral balance-spring
Rotor	Pierced central rotor with heavy metal oscillating weight riveted on; ball borne; winds in both directions of rotation
Chronograph power	Via fourth-wheel
Chronograph control	Two push-pieces, column-wheel, seven columns, additional stops
Adjustment and testing	+C.O.S.C. certificate; adjusted in five positions and at several temperatures
Case diameter	Measured from between the lugs at the "12" to between the lugs at the "6": 38.56 mm
How the movement is held	Hung on two bridles
Glass	Sapphire crystal
Crown	Screw-down; triply insulated: one insulator in the crown, another externally on the pipe and a third one internally on the pipe
Push-pieces	Screw-down
Luminous material	Very thin coating of luminous material on the hands

ONE WATCHMAKER'S OPINION

Peter Hoffmann, Roth Jewelers, Ulm, Germany:

THE FUTURE BELONGS TO THE COMPACT CONSTRUCTION STYLE

"The new caliber 4130 presents itself as a stable system. It's a neat, compact and self-contained construction with no unnecessary frills. This caliber is more modern, more functional and easier to service than its predecessor. The caliber 4030 was and is a very good movement, until it's compared with the convincing austerity and sobriety of its successor. The clear division of the new Rolex chronograph movement is more convincing than the open and exposed construction of the rebuilt El Primero caliber. I was also very pleased to discover that thanks to its vertical friction clutch, the stop seconds-hand no longer starts with a jolt. The future unmistakably belongs to the type of construction that Rolex has created with this new chronograph movement. Visually too, the newcomer is very appealing: now, if not before, the time has surely come for Rolex to consider setting a transparent pane of sapphire crystal into the back of the case. It's a pity to continue hiding this beautifully constructed movement."



Rolex has taken a big step forwards in the clasp. The difference is palpable when you hold the watch in your hands.

Outer Changes

As far as outward appearances go, the new Daytona differs far less drastically from its predecessor. The most obvious change is in the rings surrounding the three subdials. They're gray now rather than black, something of an unfortunate design choice, as it detracts from the legibility rather than enhancing it. The overall look of the watch is more modern, thanks to the wider hour indices. One thing that you might not notice at first glance is that the new model is ever so slightly thinner. The slenderizing is due to the lower position of the rotor and the fact that the mechanism for the 12-hour counter now rests on the movement side of the caliber rather than the dial side. The strap lugs have grown slightly longer; they've become higher and are thus more stable. The holes drilled to accept the spring bars are now located farther away from the edge than they were on the first model. Even more changes have been made in the wristband and clasp. That's good news, because on earlier Rolex models these components had rightly been the target of criticism. The new wristband, which still goes by the old name Oysterlock, is significantly better crafted, especially at the folding clasp, where the wings are now palpably sturdier and are effectively locked closed by a button before the safety catch is flipped over them. Hardly any sharp edges remain. As an encore, Rolex has equipped the clasp with a so-called "quick-setting" function: thick-wristed owners can now affix the bars into two additional holes, thus making the wristband about three millimeters longer.

The new wristband is as smooth as butter: hardly any sharp edges remain. The folding clasp is significantly better crafted than the old one.

All in all, we can conclude that although Rolex hasn't reinvented the chronograph, the new *manufacture* caliber embodies a contemporary, well-thought-out, mature construction without any noticeable weak points. Of course, the Zenith caliber was and still is an excellent device, but our comparison between the old and new Daytona movements clearly shows what's possible when thirty years of technical improvements are allowed to influence the fine details. And because the new caliber 4130 was developed in-house at Rolex, we can assume it has been sufficiently

de-bugged after several years of rigorous intramural testing and will deliver years of problem-free service. The new wristband completes the Cosmograph 2001 picture: this bracelet can now stand alongside anything offered by Rolex's numerous competitors. The only fly in the ointment is that there is no end in sight for the delivery lags that keep these prized possessions from appearing under glass at your local jewelers.

TEST RESULTS

Rolex Daytona Ref. 116520 (new)

Wristband and clasp (max. 10 points): 9
Obviously improved, scarcely any sharp edges remain. Clasp clicks neatly and cleanly into place. Quick adjustment of length is possible.

Operation (5): 5
Problem-free thanks to smoothly operable push-pieces and well-cut threads.

Case (10): 9
Very good, high-quality craftsmanship; slightly thinner than the case of the old Daytona.

Design (15): 13
Scarcely any changes have been made in the form and design, and that's surely an advantage. The larger indices make this new model seem more modern than its predecessor. atmospheres (100 meters).

Legibility (5): 4
Bolder engraving on the tachometer scale, but less contrast on the scales of the subdials.

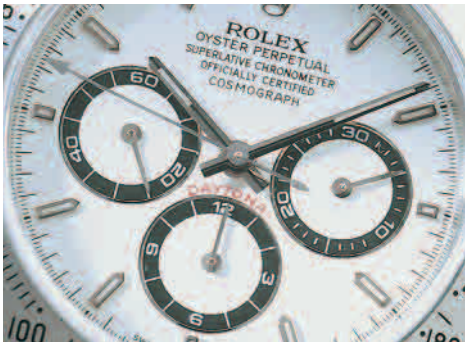
Wearing comfort (10) 9
Very comfortable. The greater weight of the new model can scarcely be felt.

Movement (20): 18
Intelligent, mature, contemporary, aesthetically convincing construction. Easier to service than its predecessor. This model initiates a new generation of chronograph movements.

Results of running test (10): 9
Extremely unified rate, nearly no variations in the balance's amplitude. Very good results, even for a chronometer.

Overall value (15): 15
The world's rarest watch. Favorable price, but long delays for delivery. There seems to be no upper limit to the price that one of these models will command when and if it's ever resold. Anyone who can get his hands on one of these chronographs can count himself lucky.

TOTAL: 91 points ★★★★★



Rolex Daytona Ref. 116520 (old)

Wristband and clasp (max. 10 points): 7
This was a shortcoming for many years that had recently been slightly improved. After you see the new version, you certainly won't miss the old one.

Operation (5): 4
Readily operable, but depressing the push-pieces requires a certain amount of pressure.

Case (10): 9
Very good craftsmanship; the construction is nearly identical with the new version

Design (15): 13
Familiar, classic and sleek. The design is still very much up-to-date.

Legibility (5): 5
Clear arrangement, good contrast, and also readily legible at night

Wearing comfort (10) 8
Good, but we subtracted two points because it has too many sharp edges.

Movement (20): 16
Then as now, a successful, good-looking construction. Not quite as modern as it once was, but very reliable. Delivered first-class results in the running test. Not as easy to ervice as the new caliber.

Results of running test (10): 9
Likewise a very regular rate with good performance, scarcely any differences between the old and the new models.

Overall value (15): 15
As rare as it ever was. Extremely high resale value.

TOTAL: 86 points ★★★★