

# Pace Maker

## TAG's Calibre 360 flies off the blocks

James Gurney



Sport has been an essential part of the Heuer story since the late 19th century, so we really should not have been surprised by this year's headline unveiling at Baselworld: the TAG Heuer Calibre 360 Concept - a mechanical chronograph capable of recording times down to 1/100th of a second. *QP* considers the many challenges that TAG overcame in the race to combine a base movement with a secondary escapement beating at an incredible 50 Hz - ten times faster than standard.

From the milestones, awards and patents gathering dust in whatever passes for a trophy cabinet at TAG Heuer, to the very name of the brand - the purpose of TAG Heuer is to create objects that capture the glamour and thrill of sport. Although the TAG part only joined Heuer as part of the brand in 1985, 'Techniques d'Avant-Garde' has always been what

lifted Heuer out of the ordinary. With stop watch patents stretching back to 1869, sports timekeeping has always been the focus for the company's ingenuity. So this year's take on the 'avant-garde' theme should not really have created quite such surprise. Which begs the question: what was so special to generate the level of interest and comment?

### Old meets new

The answer is a strange hybrid of old and new, named the Calibre 360. There are three good reasons why the Calibre 360 was able to generate so much coverage for TAG Heuer. The first is that, even shorn of brand logos, the Calibre 360 would be easily identifiable as a TAG Heuer watch. It is a direct descendant of 1916's Micrograph - the first stop watch capable of recording times down to 1/100th of a second and, by virtue of this, the watch that established Heuer as field leader in sports timing.

TAG Heuer's new Calibre 360 Concept chronograph is the first wristwatch to display elapsed time to 1/100th of a second. The counter at 6 o'clock completes a full rotation every second. The 360,000 vph escapement driving this counter has a 100-minute power reserve, displayed at 12 o'clock.

Though it took until the 1960s for official athletics records to catch up, the Micrograph changed market expectations and the way speed records were perceived and recorded – quite a profound effect for one watch to have. It is this history, together with the residual legacy left from the development of the Micrograph and its successors that has given TAG Heuer an ownership of sports timing that few other companies have successfully challenged. Though such positive identification is not quite on the scale of Hoover or Frigidaire, the Micrograph's existence, all the same, lends credibility and purpose to a project that other companies would struggle to equal.

Another reason for the acceptance of what is explicitly a concept watch (production is the end goal, but still some way off) is that TAG Heuer has built a growing reputation for presenting creative and radical concepts. While the first visible impact of LVMH's custodianship was the revival of iconic designs such as the Carrera, Monaco and Autavia, research was already under way for products such as the Microtimer (a 1/1000th-of-a-second quartz chronograph), and the amusingly ridiculous Monaco 69. As it turned out, these were mere tasters compared to the V4 unveiled in 2004.

(Right) A computer rendering of the Calibre 360's movement, demonstrating how the quick 50 Hz escapement fits into the base movement.  
(Below) The 1916 Micrograph from Heuer – the first 1/100th-of-a-second stop watch.



The contribution that this recent activity makes to the acceptance of the Calibre 360 is that it helps bridge the gap between what might otherwise be a vanity project and the slightly more prosaic releases at Baselworld, such as the Golf watch, the Aquaracer Calibre S and the cleverly re-invented F1 watches.

### Technical hurdles

Background apart, the main reason for liking the Calibre 360 is that it is a cleverly conceived and realised idea. As with its predecessor, the Calibre 360 is in fact two movements in one. TAG Heuer's COSC-certified Calibre 7, an essentially normal chronograph movement running at the standard

rate of 4 Hz, is the base, as is the case for almost every mechanical chronograph you are likely to see. This movement takes care of the basic timekeeping and chronograph functions.

However, a quite separate going-train and escapement sits as a module on the base movement. When activated via the base, it runs at an incredible 50 Hz, or 360,000 vibrations per hour. The result of such frantic mechanics is a prominent dial counter that records time intervals in 1/100th-of-a-second increments; a step up from conventional mechanical movements by a factor of 10!

While conceptually simple (the speed at which a balance oscillates is a direct function of the balance spring's dynamics) the difficulty of realising the idea has, until now, seemed insurmountable. This project must have tested TAG's legendarily unflappable watchmakers to the limits of their patience, as a moment's consideration of the problems will make clear. Of the many challenges faced in the development of the Calibre 360, two illustrate the scale nicely. Firstly, the two movements had to function together seamlessly as far as the user is concerned. After all, you would be distinctly underwhelmed to find separate stop and start controls for the regular chronograph and the 1/100th second counter. This meant designing linkages that ensure both elements stop and start at the same moment, or at least within a 1/100th second gap. Similarly, the two movements are linked through the same winding mechanism. Again, what user would be impressed to find that he needed to wind the movements separately?

### High calibre

The greatest headache for Calibre 360's developers was, however, the business of fine-tuning and calibrating the whole ensemble so that it works accurately and consistently. Errors in adjustment and variations in rate are only magnified by the tremendous speed of the 360's movement. Given this, we were not surprised to hear that TAG Heuer was not promising production pieces anytime soon. However, as this article went to press, it transpired that TAG Heuer hoped production would begin before Christmas and that the design of just four components remains to be finalised. But if you really can't wait until next year for a piece that will undoubtedly command a lengthy waiting list, you could always try bidding for the prototype at TAG's upcoming auction in aid of the Musée de l'Horlogerie et de l'Émaillerie. A showcase for the applied arts of Geneva, with special emphasis on the decorative aspects of horology, the museum (currently closed until 2009 for renovation) has been the victim of two robberies over the past four years. Since then, TAG has done much to support its recovery. Antiquorum will auction the watch on November 12th.



(Above) Juan-Pablo Montoya is TAG Heuer's latest recruit to the test department. He also drives F1 cars.

(Below) The new 360,000 vph escapement (bottom), compared to a 36,000 vph escapement (top) – the former of which has a much shorter balance spring.





(Above) The Microtimer (£1,250), launched in 2002, housing the first Swiss electronic movement precise to 1/1000th of a second.

(Right) Last year's smash hit from TAG Heuer - the V4 Monaco concept watch, currently being industrialised. It was inspired by a racecar engine and incorporates 13 rubber belts in the mechanism.



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We should admit at this point that while the prototype seemed to perform as promised to the naked eye, there are no published tests to verify the claims made by TAG. Nevertheless, the prototype has survived a year of constant, reckless handling by inquisitive members of the press; not to mention the multiple g-forces encountered during an F1 training session on the wrist of Juan-Pablo Montoya - driver for Team McLaren-Mercedes and recently signed TAG ambassador.

The Calibre 360 looks good too - certainly a surprise after the very conservative Carrera-style prototype that was the working model last summer. Instead, the watch is modern, if not exactly futuristic, with a clear nod to the dashboard chic that currently preoccupies so many watch designers. According to TAG Heuer, the look is inspired by Montoya, but if that is a little hard to swallow, never mind - it is the watch that will be remembered.

Not perhaps as radical as the V4 or as slick as the Microtimer, the Calibre 360 is perhaps the most 'Heuer' of the company's recent concept watches. And in these days where branding is everything, the 360 is therefore an unqualified success. ○

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