

# **TAG HEUER**

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The first advanced integrated mechanical movement of the third millennium — and probably the 21st century's first major contribution to watchmaking innovation — the TAG Heuer Monaco V4 represents a complete break with tradition and the audacious next step in mechanical movement engineering. This belt-driven wonderment, first unveiled as a Concept Watch at BaselWorld in 2004, is now industrialized and entirely hand manufactured in TAG Heuer La Chaux-de-Fonds workshop in an exclusive luxury edition of only 150 pieces in platinum.

TAG Heuer in History: Pioneer of Swiss watchmaking since 1860

For 150 years, TAG Heuer has challenged traditions, defied rules, and set major Swiss watchmaking milestones. The world leader in luxury sports watches and chronographs since 1860, it maintains this preeminence by ceaselessly reinventing itself, and, in the process, changing the world of watchmaking — revolutionizing what watches and chronographs can do, how they work, and the way they look.

In 2004, the company unveiled the Monaco V4 Concept Watch, the world's first watch with belt drives, linear mass and ball bearings. In only 5 short years, the dream comes true ...On the eve of its 150th anniversary, TAG Heuer has achieved the unbelievable, unveiling to the world what many industry insiders said would never see the light of day: The Monaco V4 in commercial production. Double-patented Monaco V4, 100% TAG Heuer-made, outdoes its own legacy. A bold technical masterwork unlike any watch ever seen or imagined, it both exemplifies luxury Swiss watchmaking tradition at its finest, and completely turns that heritage upside down and inside out.

Once again, with this boldest creation yet, TAG Heuer stakes claim to the leading edge of design innovation and honors its world-famous motto: "Swiss Avant-Garde since 1860."

TAG Heuer and the MONACO V4: Revolutionizing the fundamental principles of mechanical watchmaking

Transmission

Until the V4, all modern mechanical movements, regardless of their complications, were generally based on "classic" watchmaking components, most of which date back to the 18th and 19th century. The principal components of this traditional system are: an energy reserve, by means one or several springs; a transmission, using gears; and a regulatory function, usually organized around a recoil escapement.

Gear transmission and automatic rewinding: the V4 team set these aside and started from scratch. The result is a complete paradigm-shift, 2 worldwide patents, and a completely new generation of mechanical movements.

In a world first, TAG Heuer award-winning team of watch masters and engineers replaced the pinions and wheels of the traditional mechanical movement with a belt-driven transmission: a high-yield relay of 5 notched micro drive-belts whose tension is controlled by 2 turnbuckles. The transmission belts in polyether block amide have a 0.07mm section, about the same size as a single human hair, and are 10 times smaller than any belt ever manufactured. Unlike a traditional calibre, this modular synchronous drive belt system requires no extra gears to send motion from one point to another. More efficient — less vibrations, optimizing movement — and much easier to maintain, it allows power to be transmitted wherever it is required, allowing for more complications, with no obstacles.

Energy

The TAG Heuer team then garnered a second worldwide patent by revolutionizing the oscillating mass, which traditionally is superimposed on the movement and moves in a rotational manner. The Monaco V4 is the world's first wristwatch with a linear mass, which is mounted on the world's smallest ball bearings (2.2 to 4 mm diameter and a thickness of 0.6 to 1 mm). The 12g tungsten ingot doesn't move back and forth but up and down on a track between the 2 pairs of v-shaped barrels in series, set in parallel and inclined at +/- 13°. A gear system on the long side of the weight engages a cogwheel and converts the linear motion into a rotating movement. Each barrel series stores 450g of energy for a total strength of 900g.

The MONACO V4: An avant-garde design for an avant-garde movement

Winner in its concept stage of many design prizes and awards, the Monaco V4 is the revolutionary new incarnation of the iconic Monaco — the audacious, square-faced watch first seen on Steve McQueen's wrist in the 1970 race classic film *Le Mans*.

The original Monaco's big, squared-off case captured the imagination of a generation and signaled a complete break with conventional watchmaking aesthetics. It thus made sense to borrow from this iconic heritage to showcase TAG Heuer's newest breakthrough in high-end luxury design. Like the original Monaco, the world's first automatic chronograph with a micro-rotor (launched in 1969 by Jack Heuer, today TAG Heuer's Honorary Chairman), the powerful new movement housed in the Monaco V4 is a tribute to the high-tech, high-performance world of motor racing.

The name derives from the V-shaped platinum main plate on which the movement's four spring barrels are mounted. The 2-by-2 belt series on ball bearings are angled at +/- 13 degrees, and look like the cylinders in a high-end motor-racing engine.

The Monaco V4's avant-garde look outside matches the revolutionary movement inside. Every complex surface and dihedral angle is fine polished to the highest haute-horlogerie standards. The beveled and arched sapphire crystal, manufactured in 3-D, curves down to join the sides. The case is in platinum 950, as is the caseback, which is trisected with 3 glass apertures. There is no reading dial per se — the polished beveled indexes are fixed directly to the bridges, with the small second hand distinctively off-centered at 4 o'clock. The ball bearing systems are visible on both sides, while the movement's unique escapement and 3 transmission belts can be seen from the front, and the 2 barrel drives from the back. The stylish strap is in large-scale alligator, hand-stitched with a titanium insert. The overall design is breathtakingly new, unlike anything ever seen, yet the influence of Steve McQueen's square-faced Monaco is apparent at a glance, as is the spirit and DNA. This is what truly drives TAG Heuer and the Monaco V4: audacity, performance, and a passionate devotion to the avant-garde.

TAG Heuer and the MONACO V4: Pioneering new forms of human and technological innovation

Above all, creating an entirely new paradigm for mechanical movement dynamics requires men and women of vision and passion, committed to pushing beyond limits.

TAG Heuer's best engineers and watchmakers, working with the inventor Jean-François Ruchonnet, begun delving into the fundamental concepts of mechanical watch movement, under the strictest terms of confidentiality. Then the Monaco V4 story became a real human saga involving an extraordinary team of dedicated thinkers, watch masters, engineers and craftsmen working in Switzerland but also collaborating with a unique international network drawn from renowned high-tech companies, universities and research institutes.

The techniques used in the design, prototyping and production of the V4 are the same as those used to develop complex aerospace systems. Tools, techniques and expertise were drawn from an eclectic fusion of disciplines, such as the automobile and IT industries, applied mathematics, chemistry, climatology, computer engineering and micro-mechanical sciences. New TAG Heuer-designed machines and methods were specially created, including proprietary software (TAG Heuer is a pioneer in 3D modeling and digital synthesis), automated micro-couplers and rheologically controlled high-pressure injectors.

Today, the Monaco V4 are hand-assembled at TAG Heuer by "Meilleur Ouvrier de France" watch master Denis Badin, thus bringing the timepiece full circle: from the most cutting-edge techniques of the present era to the most time-honored traditions of artisanal craftsmanship. This exclusive luxury edition of only 150 pieces in platinum 950, launched at the occasion of the 150th anniversary, will be sold at 100,000 CHF.