UHREN

Magazin April 2012

Petite Seconde *Manual Winding with Tradition*
Bigmatic *Self-winding after Technical Modification*
Petite Seconde *Scrumptiously Classical Design*
Bigmatic *Sporty Companion for Daily Wearg*

UHREN-MAGAZIN
Special Issue
Exclusively for CIMIER

CIMIER-Double Test

The Hand-wound Watch versus the Self-winding Watch

A Battle between Opposites

CIMIER — *Bigmatic versus Petite Seconde*

Automation usually goes hand in hand with technical progress. Our test will determine whether an automatic winding system can truly improve a time-tested hand-wound movement.

Anyone who believes that CIMIER – the brand whose name means »ornamental crest on a helmet« and whose logo is appropriately shaped like three stylized feathers – is mostly unknown in Germany would be laboring under a misconception. CIMIER's rebirth, which happened nine years ago, is closely connected with the German market, if not to say exclusively connected with it, because the CIMIER's new beginning took place precisely here. Two years later, there were more than 2,000 points of sale in Germany. Only afterwards did CIMIER enter Switzerland, the Middle East, Eastern Europe and Asia, which have since become the brand's principal markets. This small business currently employs about twenty people at Baar in central Switzerland and at a manufacturing facility in Ticino. CIMIER produces approximately 30,000 timepieces each year.

It all began as a one-man show starring the ambitious Martin Bärtsch, who became knowledgeable about the watchmaking industry while serving as a top-tier executive at Maurice Lacroix, where he also began to feel the urge to go into business on his own. With a winning combination of cleverness and humbleness, Bärtsch revived CIMIER in 2003: not as one watch brand among many striving for a new and higher position, but as a label that was returning to terrain it had been forced to abandon in the mid 1980s. Forced? Yes, indeed. But it was neither financial nor commercial difficulties that led to CIMIER's disappearance in 1985; rather, irreconcilable differences among members of the owning family culminated in the decision to sell a competitor most of the machines needed to produce watch movements, followed by cessation of production at CIMIER. What remained was the name, which Martin Bärtsch revived in 2003. He positioned CIMIER where it had traditionally been situated: not in the cheaply priced sector and not in the luxury segment, but between the two, as a robust and affordable watch for daily wear.

Bärtsch began in 2004 solely with quartz watches that sold for 600 euros or less, and then launched CIMIER's first self-winding model one year later. But CIMIER's own interpretations of watch movements and additional modules have always also been represented in the brand's collection. This manufacturer created an especially distinctive flagship last year with the debut of the Bigmatic, a self-winding wristwatch based on the familiar hand-wound ETA/Unitas 6497-1 caliber, for which CIMIER developed its own automatic module. Martin Bärtsch claims that this movement works even better than its creators had ever dared to dream. Our test will prove – or disprove – Bärtsch's assertion.

Eleganze versus sportiness

We compared a limited model of the Bigmatic against a competitor from the same brand: the Petite Seconde, which encases hand-wound caliber ETA/Unitas 6497-1. At first glance, these two watches seem fundamentally different, yet nonetheless also somehow similar. The module for the self-winding mechanism that was added to the ETA/Unitas 6497-1 necessitated a new and taller case for the Bigmatic, which now looks more angular and thus also sportier, especially in the limited edition, which is coated with black PVD.

The narrower bezel makes the diameter of the glossy case look even larger. But appearances can be deceiving: both watches are an ample 43 millimeters wide. The dimensions differ, as we said, only in the vertical axis: the Bigmatic is a stately 14.3 millimeters tall, while the more elegant Petite Seconde is 11.2 millimeters in height.

The Petite Seconde makes a more charming overall impression, partly because of the gleaming steel case with its broader and less steeply sloping bezel in combination with the gentle downward progression of the horns. These four horns extend from the case's middle piece, which bulges slightly on the right-hand side to flank the crown at »4 o'clock.« The crown's location indicates that the movement was given a little turn before it was encased. This 15° shift is exactly equal to the twist given to the Bigmatic's caliber, but in the opposite direction. If not before, then surely when one compares the locations of the crowns, one begins to suspect that these two watches are indeed related to each other.

The Bigmatic's crown at »2 o'clock« is likewise flanked, but its protection is bolder and more angular. The protuberance begins directly alongside the nearest horn and ends immediately beside the crown. This protection doesn't interfere with the crown's operation, especially because one will probably reach less frequently for the Bigmatic's crown than for the winding-button of the Petite Seconde. That's because the Bigmatic's inner life is CIMIER caliber 10-50, an automatic movement. If this watch is worn regularly, one won't need to wind its mainspring via the crown and manual resetting of the hands will likewise seldom be necessary. The situation is entirely different for the Petite Seconde because its ETA/Unitas 6497-1 needs manual intervention at least every 46 hours, although its timekeeping will be more accurate if one gives one's watch this attention at 24-hour intervals, optimally at the same time each day. Doing so not only improves the rate behavior, but also avoids the nuisance of resetting the hands – a task which will surely be necessary if one forgets to wind the Petite Seconde. Such a lapse of memory can readily occur because one weekend's neglect suffices to stop the watch.

Of course, it's always a tactile and aural pleasure to manually wind the ETA/Unitas caliber, which is based on the movement for a pocket-watch. The sufficiently large crown can be readily grasped; and when one turns it clockwise, one's ears are rewarded by the sound of the pawl quietly clicking across the teeth of the locking-wheel. The visual aspect is equally delightful: if one performs the daily winding ritual while peering through the pane


CIMIER
LIMITED EDITION
BIGMATIC 16 Hz
PETITE SECONDE
CIMIER
MASTERART SELECTION

of sapphire crystal in the Petite Seconde's back (which is held firmly in place by eight screws), then one can admire the rotations of the winding-train's wheels, each of which boasts a decorative sunburst pattern. If one should ever find it necessary to manually wind the Bigmatic, one will likewise enjoy using its very readily grasped crown.

But the sounds produced by the Bigmatic's winding mechanism are totally different from the ones made by the Petite Seconde: the much quieter purr emitted by the Bigmatic is more reminiscent of a modern caliber. The predominant sound is caused by the rotations of the step-down gears in the self-winding train, which – because of their construction – do not disengage when the movement is manually wound. Scrutiny of the Bigmatic's movement is likewise rewarding because it reveals the finishing and the technology, about which we'll soon have more to say. It's no problem to set this watch's hands: the large crown has an angular flank, but can nevertheless be easily grasped and conveniently extracted to its hand-setting position. Neither the Bigmatic nor CIMIER's self-winding variant nor yet the basic version of the ETA/Unitas caliber offers a stop-seconds function in this position.

Black-and-white painting

The crown of the Petite Seconde is smaller and noticeably slipperier than its counterpart on the Bigmatic. A bit of help from a fingernail will probably be needed to coax this little button outward and into the hand-setting position. If one uses it for this purpose, it will propel two elegant hands above an equally handsome dial. The beauty of the latter derives from an anthracite-colored background adorned with a fine sunburst pattern, attractive applied numerals and indices, and asymmetrically tapering annuluses on both the main dial for the hours and minutes as well as on the subdial for the seconds. These arcs intersect at »10 o'clock,« where the little second-hand turns its circles above a subdial embellished with rays of guilloche emanating from an epicenter at the »10.« The wearer is free to decide where the zero point of the subdial will be: the rays of guilloche conjoin at the »10,« but one's intuition might instead prompt one to follow an imagined vertical and declare the index nearest the »55« as the starting point for this subdial. The choice ultimately makes little difference because the ETA/Unitas 6497-1 doesn't offer a stop-seconds function, so only with great dexterity and quick reflexes can this watch be set with to-the-second accuracy. And besides, considering the beautiful design that distinguishes the dial, is extreme precision really so very important?

A much sportier impression is made by the case and dial of the Bigmatic. The hands are angular, faceted and skeletonized, so one is more likely to lament the lack of luminous paint for reading the time in the dark on this watch's hands than on the hands of the elegant Petite Seconde. Unexpectedly, it's occasionally necessary to look closely at the dial even in the daytime to tell the time here.

That's because under certain lighting conditions, the facets on the hands and on the applied hour indices make the elements of the time display look as though they've merged with the matte black background. The subdial for the seconds at the »8« is clearer: its silvery annulus and concentric guilloche leave no doubt that its little blue hand must point upward toward the »12« at the end of each full minute. Incidentally: a blue Arabic numeral »12,« together with a second-hand and eleven hour markings in the same azure hue, are distinguishing features of this special Bigmatic model, which is manufactured in a limited edition of 200 timepieces.

A look through the fourfold screwed sapphire crystal in the back of the case and farther inward toward the mechanisms of the ETA/Unitas-6497-1, which has here been augmented to include a self-winding device, is thoroughly worth one's while. Not only can one admire the pretty decorations on the basic caliber, but one can also see how they've been continued in the architecture of the self-winding module. The technology is experientially comprehensible. Along the extension of the winding-stem, one notices a crown-wheel that swings outward and inward when the crown is operated. What's this all about? In a hand-wound movement, the crown-wheel and the locking-wheel are continually engaged. If this were likewise true in an automatic movement, the manual winding mechanism would also be operated during automatic winding. This, of course, is not what the inventor intended. To prevent this redundancy, the crown-wheel remains uncoupled and is only brought into engagement with locking-wheel during manual winding. The crown-wheel has an eccentric bearing, which assures that the former can swing out and disengage when the watch is wound by hand. To make this construction possible, it was necessary to design a new barrel-bridge with a larger milled notch to accommodate the outwardly swinging crown-wheel. The rotor's axis is also affixed to this bridge by three screws. This contributes to the reliability of the device. Toward the top, the rotor's position is secured by an elastic splint-disc which inserts into the groove. Also mounted on the same bridge, i.e. on the barrel-bridge, is a bipartite automatic-cock, the two arms of which bear the two step-down gears in the automatic gear-train. As mentioned above, these wheels do not uncouple when the watch is manually wound, which means that turning the crown also causes these wheels to turn. The pawl, which causes the grainy sound

Rate	CIMIER Bigmatic				CIMIER Petite Seconde			
Wearing test	Average daily rate		– 0,8 s		Average daily rate		+ 4,7 s	
Timing machine	Fully wound		After 24 hrs		Fully wound		After 24 hrs	
	Rate	Amplitude	Rate	Amplitude	Rate	Amplitude	Rate	Amplitude
ZO	– 0,9 s	288°	+ 4,0 s	255°	+ 3,6 s	299°	+ 6,6 s	286°
ZU	– 5,9 s	284°	– 2,8 s	257°	+ 5,3 s	288°	+ 7,8 s	267°
9H	+ 4,4 s	249°	+ 6,8 s	220°	+ 0,8 s	264°	– 0,7 s	252°
6H	– 3,5 s	251°	– 4,7 s	218°	– 0,2 s	261°	– 0,9 s	244°
3H	– 6,4 s	242°	– 4,6 s	207°	+ 5,3 s	276°	+ 6,0 s	257°
X	– 2,5 s	263°	– 0,3 s	231°	+ 3,0 s	278°	+ 3,8 s	261°
D	10,8 s	46°	11,5 s	50°	5,5 s	38°	8,7 s	42°
DVH	+ 1,6 s		– 1,4 s		– 2,5 s		– 5,7 s	
DI	– 2,6 s		– 8,7 s		– 3,8 s		– 7,5 s	

Explanation of rate results

Horizontal positions: DU = dial up; DD = dial down. Vertical positions: 9H = nine o'clock up (crown down); 6H = six o'clock up (crown left); 3H = three o'clock up (crown up). X = average of all values (average daily rate); D = difference between the largest and smallest value; DVH = difference between the average value in the vertical positions and the average value horizontal in the positions; DI = difference btw 6H and DU.

Manual winding: Time-tested ETA/Unitas caliber 6497-1 is highlighted here with pretty embellishments in the Petite Seconde. It achieves good rate results behind the case's back, which is affixed by eight screws and includes a pane of sapphire crystal.

Automatic winding: This module, which was developed by CIMIER, is convincing thanks to its aesthetics and functionality. The crown-wheel, which is uncoupled from the locking-wheel during automatic winding, is visible opposite the crown.


MASTERART SELECTION
STAINLESS STEEL
WATER RESISTANT
SAPPHIRE CRYSTAL
SWISS MADE
6102/27/19AT
SWISS MADE
WATER RESISTANT 5 ATM
SAPPHIRE CRYSTAL STAINLESS STEEL MASTERART SELECTION
CIMIER
MASTERART
BIGMATIC 16½‴
NINETEEN
19 JEWELS
RITABLE

when the ETA/Unitas caliber is wound, is only partly visible beneath the step-down gears in the automatic gear-train in CIMIER's automatic caliber 10-50. In the hand-wound movement, the pawl blocks the locking-wheel, and via this wheel, it prevents the barrel from racing in circles and quickly exhausting its supply of energy. But in an automatic movement, the pawl would also block the self-winding mechanism. To avoid this, an additional wheel bypasses the pawl when the self-winding mechanism is in action. Meanwhile, the two aforementioned step-down gears, with a ratio of 120:1, ensure that energy is transferred to the barrel from the pinion of the oscillating weight. This means that when the automatic rotor has turned 120 times counterclockwise (the CIMIER automatic gear-train winds in only one direction of rotation), the locking-wheel and thus also the barrel have been turned once. The mainspring is fully wound after 7.5 rotations, i.e. 900 rotations of the rotor. The reduction ratio of 120:1, which lowers the number of rotations of the oscillating weight to the barrel and thus increases the torque, has long been scrutinized by watchmakers, who have empirically determined that the optimal reduction ratio for a smoothly functioning automatic winding mechanism should be between 110:1 and 180:1.

Short oscillations rather than knocking

The trickiest part of transforming a hand-wound caliber into a self-winding movement is the barrel. Not only must the mainspring from the original movement be replaced by a slip-spring which is not affixed to the inner wall of the barrel-drum like the spring in a hand-wound movement, but is instead free to glide along the wall at a predetermined angle. It's also necessary to completely recalculate the barrel per se and the forces that act within it. The objective here is to create a harmonious transition for the mainspring from static friction to sliding friction when the spring is fully wound, thus achieving an optimal moment of force and stabile amplitudes. If the force acting on the barrel and on the escapement is too strong, the balance can knock; if the force is too weak, the mainspring glides prematurely.

An electronic timing machine discovered that the fully wound Bigmatic has acceptable amplitudes between 286° in the horizontal positions and 247° in the hanging positions, but the amplitudes are significantly lower after the watch has run for 24 hours without rewinding: 256° in the horizontal and 215° in the hanging positions. The philosophy of CIMIER's master watchmaker is clear: »Small amplitude is preferable to a knocking balance.« Considering the good rate results, this seems quite rea-

Petite Seconde: Circularly shaped stylistic elements characterize this hand-wound watch. They focus attention on the subdial for the seconds, which is always a salient feature on watches that encase an ETA/Unitas caliber.

Bigmatic: The dial shows that the ETA/Unitas caliber has been augmented with a modular self-winding mechanism. Blue details stand for the limited version of this new CIMIER watch.

Data about the watch	CIMIER	CIMIER
Manufacturer	Montres CIMIER AG	Montres CIMIER AG
Model	Bigmatic Limited Edition	Petite Seconde
Reference number	6110-BP021	6102-SS021
Functions	Hour, minute, second on subdial	Hour, minute, second on subdial
Case	316L stainless steel black PVD	316L stainless steel
• Diameter	43.5 mm	43.3 mm
• Height	14.3 mm	11.2 mm
• Crystals	Cambered antireflective sapphire crystal above dial; sapphire crystal in back	Cambered antireflective sapphire crystal above dial; sapphire crystal in back
• Watertightness	50 meters/5 bar	50 meters/5 bar
Wristband	Louisiana crocodile-skin	Louisiana crocodile-skin
• Width at horns	21 mm	21 mm
• Type of clasp	Folding clasp	Folding clasp
Total weight	109.0 g	97.5 g
Model variants	Bigmatic unlimited, with various dial	Black PVD case, PVD & rose gold, various dials
Errors on tested model	None	None

Data about the movement	CIMIER 10-50	ETA/Unitas 6497-1
Basic caliber	ETA/Unitas 6497-1, hand-wound	ETA/Unitas 6497-1, hand-wound
Produced since	2011 (CIMIER 10-50)	1994
Diameter	36.6 mm	36.6 mm
Height	7.30 mm	4.50 mm
No. of jewels	19 rubies	17 rubies
Power reserve	53 hours	46 hours
Balance	Gold-plated brass	Gold-plated brass
• Frequency	18 000 A/h = 2,5 Hz	18 000 A/h = 2,5 Hz
• Shape	Closed hoop	Closed hoop
• Hairspring	Nivarox 2	Nivarox 2
• Shape of hairspring	Flat	Flat
• Shock absorption	Incabloc	Incabloc
• Fine adjustment	Bipartite regulator	Bipartite regulator
Decorative patterns	Geneva waves, engravings, sunburst patterns	Geneva waves, sunburst patterns
Beveled edges?	No	No
Skeletonized?	No	No
Blued/polished screws?	Yes/no	Yes/no
Modular construction?	Yes (automatic/CIMIER)	No
Certified chronometer?	No	No
Quality seal?	No	No
Price category	Up to 4,000 euros	Up to 2,000 euros
Price of tested watch	**3,950 Euro**	**1,290 Euro**
Overall evaluation	●●●●●● [4.50]	●●●●●● [4.32]

Pros	Pros
Own self-winding module	Finishing on movement
Finishing on movement	Rate results
Rate results	Daytime legibility
User-friendliness (crown)	User-friendliness (crown)
High-quality wristband	Design
Limited edition (200 pieces)	High-quality wristband

Cons	Cons
No stop-seconds function	No stop-seconds function
Not legible in the dark	Not legible in the dark
Clasp's prong is too short	Clasp's prong is too short
High price	
Rate results in the »minus« column	

sonable: our tested watch lost 2.5 seconds per day when fully wound and ran only 3/10ths of a second slow after it had been allowed to run for 24 hours. The timepiece lost not quite one second per day on the wrist. The hand-wound watch runs with higher amplitudes and a well-balanced gain of 3.0 seconds when fully wound, and gains 3.8 seconds after running for 24 hours. It gained an average of 4.7 seconds per day on the wrist.

Handcraftmanship versus price Sovereignty

The rate results show that augmenting a time-tested hand-wound caliber with an automatic module isn't merely a question of the module. They also prove that significantly more constructive factors must likewise be taken into account. That CIMIER has indeed done its homework is primarily proven by the Bigmatic's rate results in the empirical test on the wrist. The automatic caliber wasn't necessarily convincing due to better rate behavior, but due to better stability because the tension in its mainspring remains relatively constant. Naturally, greater convenience is another positive factor because the Bigmatic's wearer can blithely forget all about daily manual winding, a task which a hand-wound wristwatch requires. Of course, this presupposes that the automatic watch is worn regularly. And wearing this watch isn't always an unalloyed pleasure, despite its high-quality German-made Louisiana crocodile-skin strap and its comfortable button-activated folding clasp. The prongs in the clasps are too short for the domed leather straps, so the pins can sometimes slip through and allow the wristbands to open unintentionally. This oversight will hopefully be rectified; all the other elements which bind the timepiece to its wearer's forearm are beyond criticism.

The decision is indeed difficult for anyone whose heart has been captured by CIMIER. If one prioritizes elegance and doesn't want to forego daily contact with the movement, then one would opt for the Petite Seconde. Then again, the additional module that transforms a manually wound caliber into a self-winding movement is also a tasty and tempting treat for fans of horological technology. Price could be the decisive factor, because CIMIER's Bigmatic departs from the brand's traditional medium-priced terrain: this three-handed wristwatch sells for a price which cannot be interpreted as a bargain. The price difference between the hand-wound watch and the limited-edition self-winding wristwatch is fully 2,660 euros. Perhaps CIMIER is aiming for a higher positioning after all?

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The specialists of CIMIER turn the Unitas 6497-1 hand-wound movement into an automatic one: So, high standard becomes a unique timepiece of high-quality watch maker art.

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CIMIER watches are available at selected retailers and in the CIMIER boutique in Zürich.