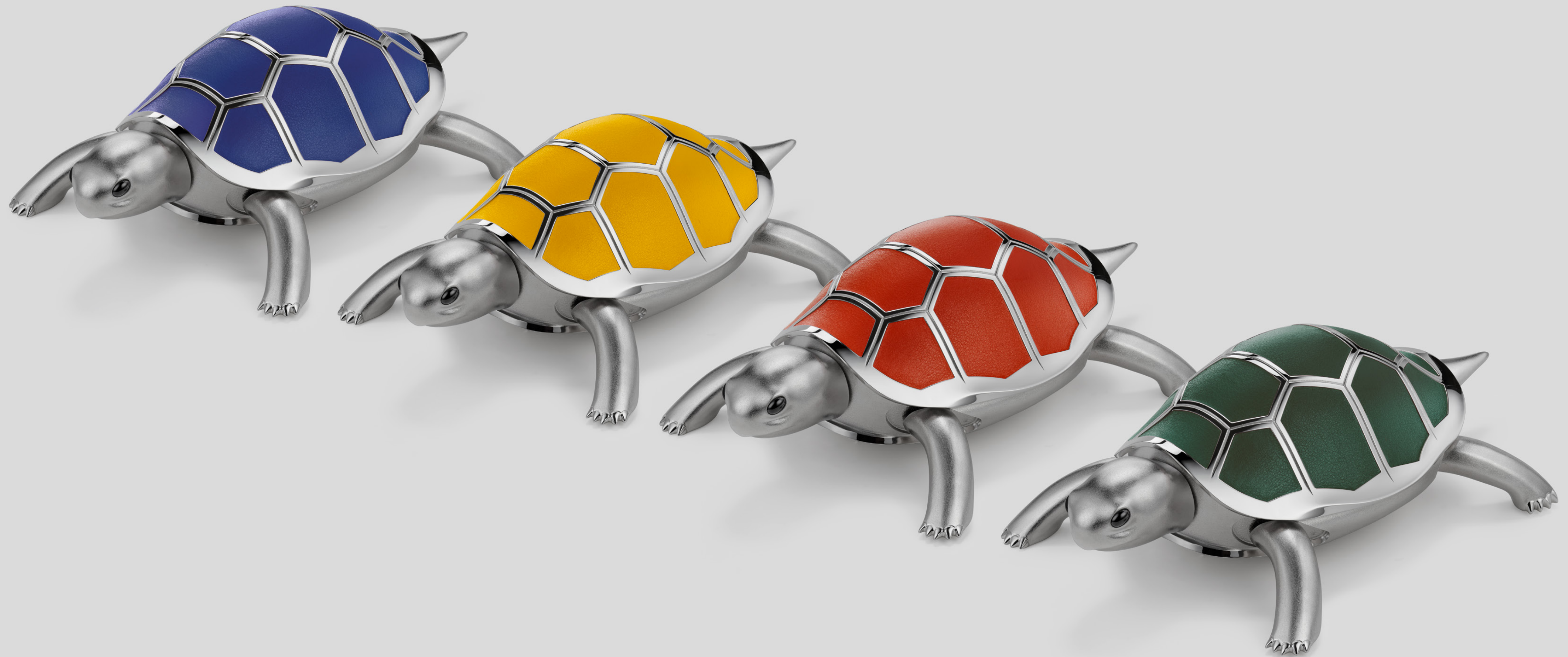


KELYS & CHIRP

MB&F
presents
Reuge & Nicolas Court





KELYS & CHIRP

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NICOLAS COURT

MB&F – GENESIS OF A CONCEPT LABORATORY

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SUMMARY

Kelys & Chirp is a joyous celebration of friends. It is itself a union of Chirp and Kelys, two unlikely companions living happily together, and was developed as a co-creation by two Friends: Reuge and Nicolas Court. Kelys (from the Greek chelone or chelys for tortoise) moves in a realistic tortoise-like gait with his head moving slowly side-to-side, his movements all in synchronicity with Chirp as springing from her nest and pirouetting, her beak opening and closing, wings flapping, and tail wagging, all in time to the melodic bird song.

Turtles have long represented wisdom in many cultures because of their long life spans (up to 190 years). While Kelys is certainly wise enough (an integrated mechanical sensor ensures that he doesn't walk off table or desk tops), it's his playful streak that complements Chirp's musical exuberance.

Turtles move with a very particular push/pull gait; thanks to unconventional gearing and cams, Kelys moves in a very similar fashion. You can also enjoy a concert by Chirp without Kelys moving by pushing his tail up; with his tail down he walks while Chirp sings.

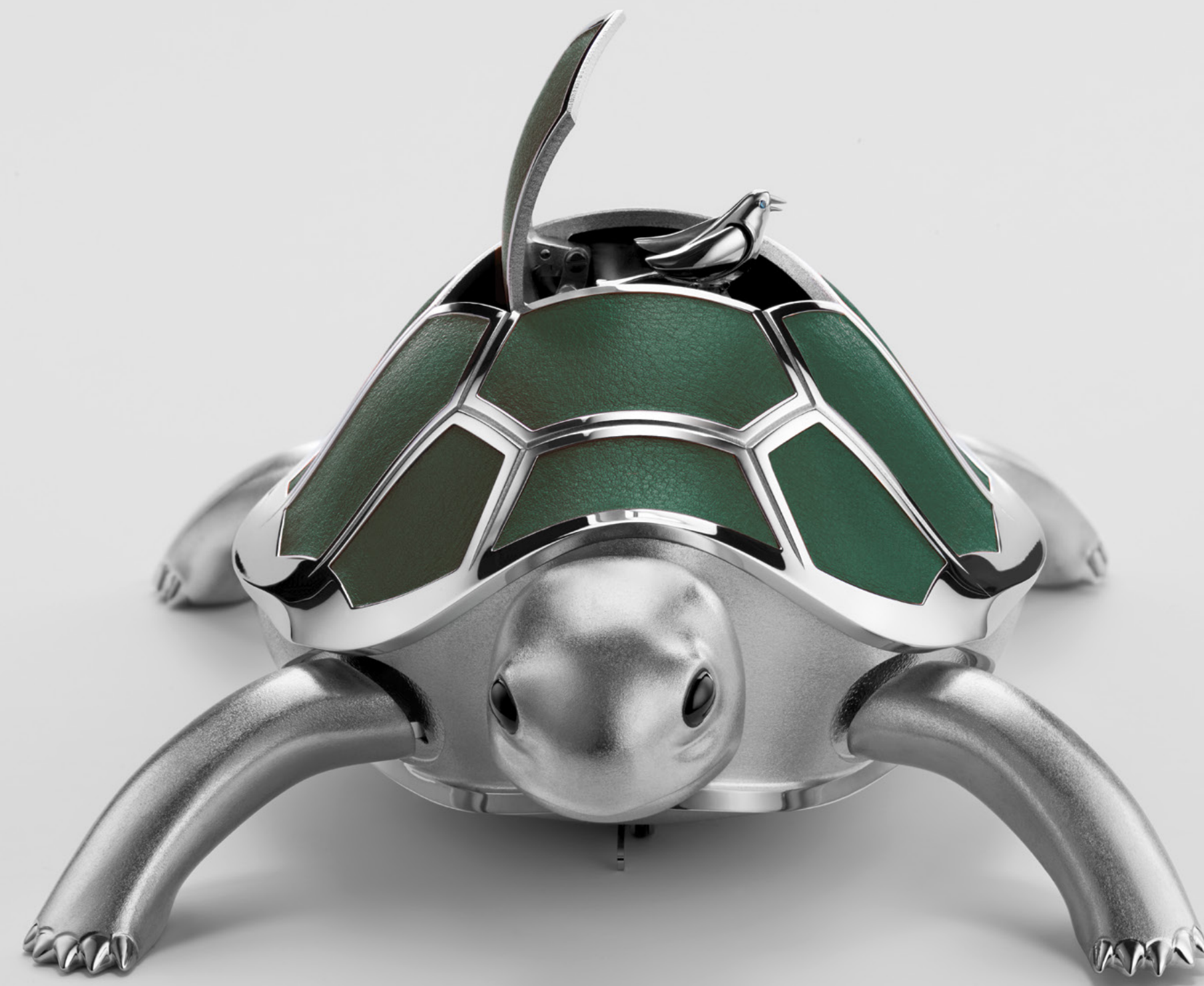
Chirp's birdsong sounds amazing, both due to the accuracy of the song and for the fact that such a relatively loud sound emits from such a small object. This is thanks to a 230-year-old invention, generally credited to Pierre Jaquet-Droz (1721–1790), who came up with the idea of the modern Singing Bird complication. By 1785, Droz had both miniaturized the mechanically-controlled bird and developed a compact movement: his secret was in recreating a realistic birdsong using just one bellow of variable pitch rather than multiple single-pitch bellows. The quality of the bird's song and how well it carries always astonishes the first time it is heard.

While Kelys & Chirp may look relatively simple compared to a complicated watch, its 480 components (enough for a minute repeater) lie testament to the complexity within. This is where Nicolas Court and his team worked their magic: working around the Singing Bird, which is a complete movement itself, they faced significant challenges when developing the turtle automaton mechanism. These included moving the relatively heavy (1.4 kg) turtle with the little power available from the small mainspring of the Singing Bird movement, while ensuring that the turtle moved realistically. The first was solved by finding the optimal low ratio gearing, the latter by the use of elliptical gearing in the power train, along with cams dictating the movement of the legs.

Court and his team added a friction clutch security system, which detects surface edges and immediately stops the turtle moving forward over the abyss... They also reintroduced a Reuge security system for the bird movement: if Chirp or her cover are accidentally pushed down while she is singing, she stops and instantly retreats to her nest.

The scales (turtles are reptiles) on Kelys' shell are individually hand made from high quality leather in 4 different colours, creating a warmer and more natural feel than bare metal.

–
Kelys & Chirp is available in 4 limited editions of 18 pieces each in blue, green, yellow or ochre.





KELYS & CHIRP

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When the idea first came up of a turtle automaton with a singing bird on its back, Reuge – which had expanded from music boxes to also offering singing birds and who had developed MB&F's MusicMachines – was the natural partnership choice. In turn, Reuge partnered with automaton specialist Nicolas Court to develop the mechanism that moves the turtle so realistically.

TECHNICAL DETAILS

The movement of Kelys & Chirp is actually in two parts: the Singing Bird, which is a complete movement itself, and the turtle automaton module, which is powered by the Singing Bird movement. Nicolas Court and his team developed the automaton mechanism around the Singing Bird movement and unsurprisingly faced significant challenges. These included how to move the relatively heavy (1.4 kg) turtle with only little power available from the small mainspring of the Singing Bird movement, while ensuring that the turtle moved with a realistic non-regular gait. The first was solved by finding the optimal low ratio gearing, the latter by the use of elliptical gearing in the power train.

Rather than move their paired legs alternatively like most animals, tortoises push themselves forward with both rear legs, after which the front legs catch up. This creates a very distinct intermittent start/stop gait that the Nicolas Court team eventually replicated by using elliptical gearing and cams, the shapes of the cams dictating the movement of the legs.

The turtle's movements are synchronised with the bird's own movements and singing. A friction clutch security system integrated into the automaton mechanism detects surface edges and immediately stops the turtle moving forward over the abyss.

Court also reintroduced a Reuge security system for the bird movement: if the bird is pushed down while singing (something to generally avoid), a lever system safely pivots the bird and it returns to nest.

The invention of the modern Singing Bird complication is generally credited to Pierre Jaquet-Droz (1721–1790). By 1785, Droz had both miniaturized the mechanically-controlled bird and developed a compact movement: his secret was in recreating a realistic birdsong using just one bellow of variable pitch rather than multiple single-pitch bellows.

TORTOISE OR TURTLE, WHAT'S IN A NAME?

While in many languages, the equivalent of the word "turtle" encompasses land-based tortoises and the same word is used for both, English on the other hand seems crystal clear. The term tortoise is used if it lives on land and turtle if it lives in the sea. But is it? Herpetologists (scientists that study amphibians) use the word turtle to describe all species of the order Testudines (turtles, tortoises, and terrapins). So yes, "Ninja Turtles" was correct. Kelys comes from the Greek chelone or chelys (turtle, tortoise).

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ANIMATION

The tortoise walks, the bird opens from back, moves and sings.
For 10-12 seconds, the bird flaps its wings, moves its tail, opens its beak in time to the bird song, then as if magically disappears.
The tortoise moves its legs in a realistically intermittent gait, its head moves.
Average tortoise speed: 0.03 m/s (0.06 mph).

MATERIALS

Generally rhodium plated brass, stainless steel and 18K white gold for the bird.
Tortoise scales: handmade leathering with coloured calfskin.

MOVEMENT

Number of components: 480
100% hand assembled

CHIRP THE SINGING BIRD

Materials: 18K polished white gold, eyes in sapphire
Number of components (bird alone): 30
Number of components (bellows): 90
Mainspring: twin-cam spring barrel
Power reserve: 3 cycles of turtle walking and bird singing
Bellows: double bellows system (bi-directional air pushing)
Security mechanism: if the bird or cover are pushed down while the bird is singing, the bird automatically retreats

KELYS THE AUTOMATON TORTOISE

Material: grained, satin and polish finishing, rhodium-plated brass, eyes in black onyx gems
Shell: 12 leather scales with individual polished edges
Mechanism for turtle automaton is driven by the Singing Bird movement
Number of components: 100, all rhodium or satin finished
Gear train: elliptical gearing with max/min 1.3/0.8 ratio enables the turtle to advance with a realistically non-regular gait.
Table/desk edge detector: turtle automatically stops when reaching the edge of the surface.
Tail switch: world first tail indication; with the turtle's tail up it rests in place while the bird sings; with the turtle's tail down it walks and the bird sings.
Security friction clutch
Circular stainless steel winding key located on tortoise's belly.

DIMENSIONS AND WEIGHT

Weight: approx. 1.4 kg
Dimensions: 24 cm (length) × 16 cm (width) × 8 cm (height without bird open)

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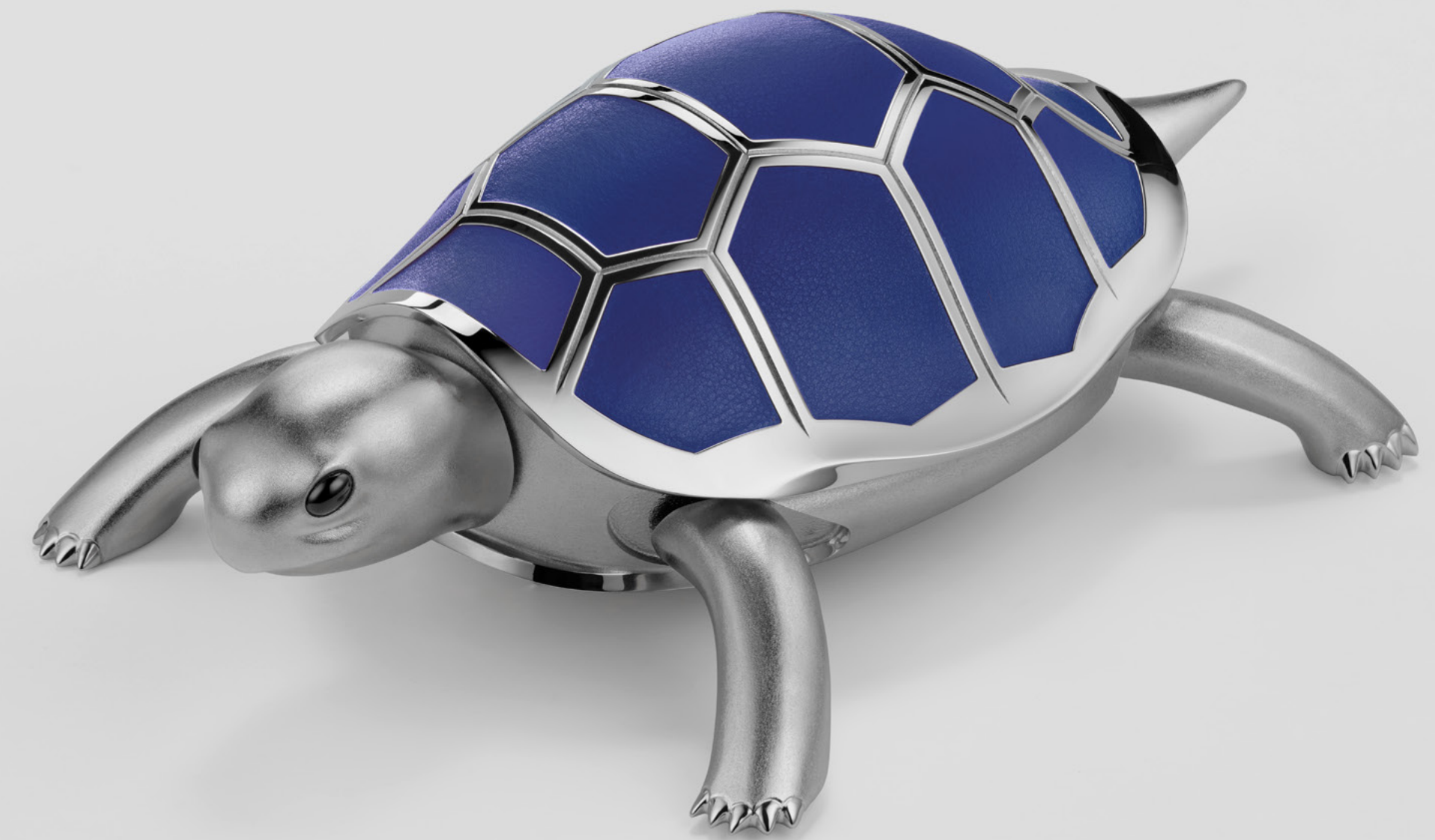
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KELYS & CHIRP

REUGE – THE PREMIER MANUFACTURER OF MUSIC BOXES, NOW ALSO THE PREMIER MANUFACTURER OF SINGING BIRDS, STILL GOING STRONG AFTER 152 YEARS!

With more than 150 years of expertise and experience, Reuge is positioned as the only premier producer of music boxes in the world today. While Reuge has a comprehensive collection of both classical and contemporary music boxes, the brand also prides itself on its ability to create bespoke pieces or limited series – like the MusicMachines created with MB&F – for discerning clients.

The Reuge spirit is to respect tradition, but at the same time move forward with beautiful contemporary music boxes for the 21st century.

It was in 1865 that Charles Reuge established his first musical pocket watch shop in Sainte-Croix, Switzerland. Charles Reuge was a pioneer, managing to incorporate a musical cylinder and a miniature comb into a watch movement. His son Albert Reuge converted the family's atelier into a small factory in 1886 and Reuge musical movements began to feature in the most unlikely of objects, including powder compacts and cigarette lighters.

Guido Reuge, who presided over the brand for much of the 20th century, built the current Reuge manufacture in Sainte-Croix in 1930 and expanded the company. In the 1960s and '70s, Reuge diversified, taking over the manufacture and marketing of mechanical singing birds from Bontems and Eschle and also developed the skills and capacity to create or replicate virtually any melody. Since 2006, Kurt Kupper has been the CEO of Reuge, and under his guidance the brand has developed a particular ability to customise and create bespoke music boxes.

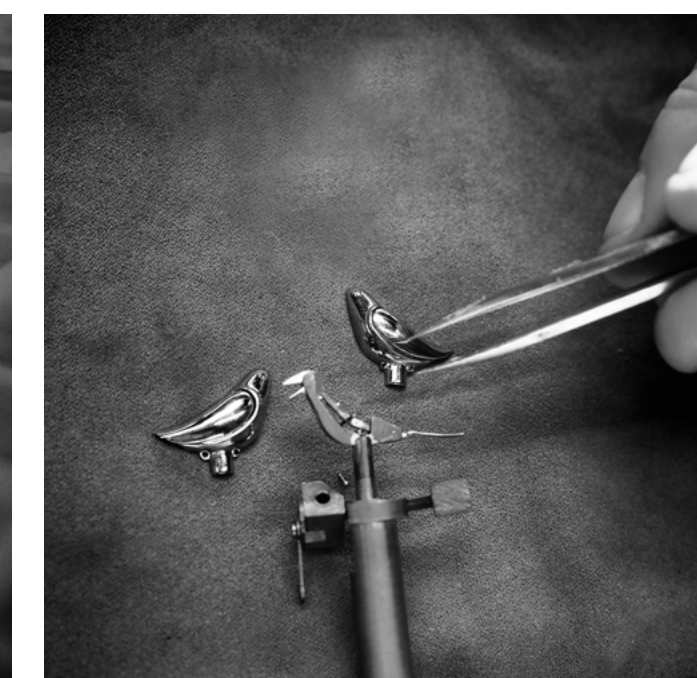
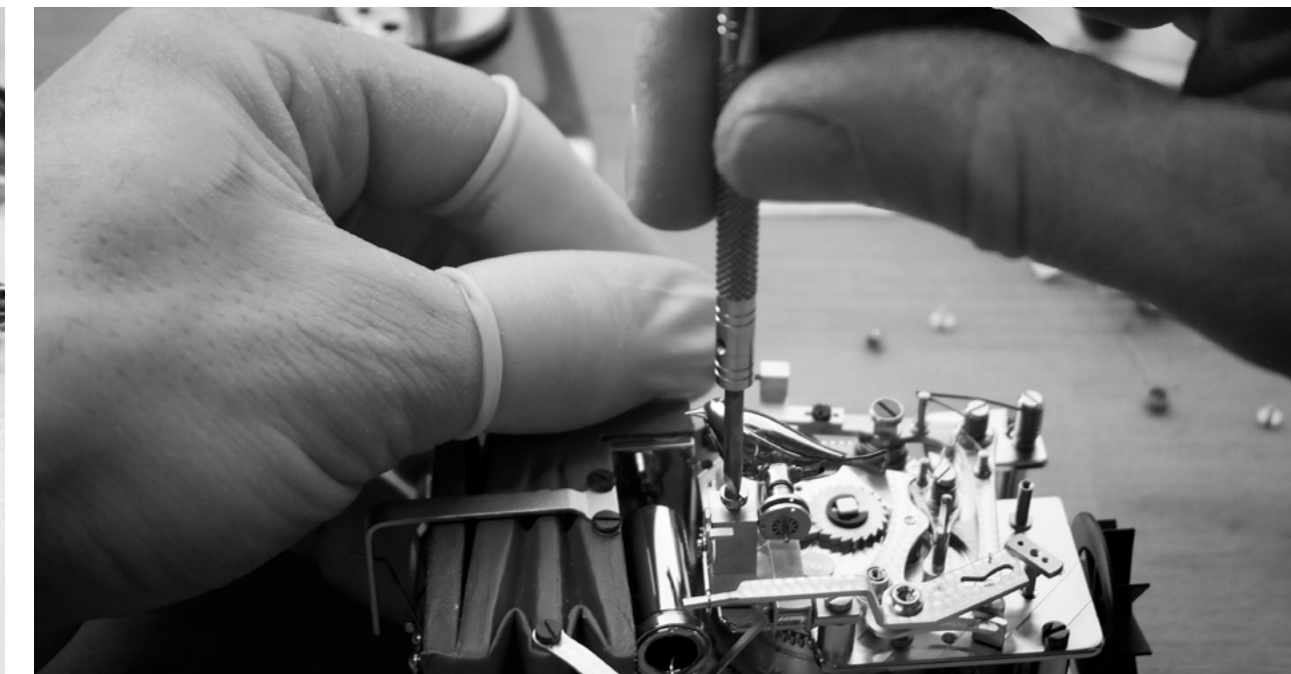
NICOLAS COURT

Nicolas Court was born in 1970 in Moutiers, Switzerland and preciously immersed in the micromechanical and horological aspects of the Jura mountains. After qualifying as a micro-mechanic at the technical college in Saint-Imier, Court worked on Morbier and Comtoise clocks. In 1989 he moved to Sainte-Croix and worked at T.H.A. (Techniques Horlogères Appliquées), where he discovered a passion for haute horlogerie mechanical art pieces, creating Breguet sympathique clocks and developing luxurious objects for well-known watch brands.

Sainte-Croix is not only known for horology, the town is also a cradle of mechanical arts including music boxes, automats, and gramophones. Court met automaton collectors and had the opportunity to restore historic pieces, which led to his now regular trips to China to repair and restore automats. He also collaborates with other automaton makers in the region and develops music box modules for watch brands, working on projects under his own brand "Arts15".

Court describes his work as "creating mechanical objects at the service of dreams."

This devotion for mechanical arts led to several collaborations with Reuge, such as the Chiff Chaff singing bird and the Escalado Horse Race automaton; undertakings that paved the way to the design and engineering of Kelys & Chirp.



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In 2015, MB&F celebrated its 10th anniversary – and what a decade it was for the world’s first ever horological concept laboratory: 10 years of hyper-creativity; 11 remarkable calibres forming the base of the critically acclaimed Horological Machines and Legacy Machines for which MB&F has become renowned.

After 15 years managing prestigious watch brands, Maximilian Büsser resigned from his Managing Director position at Harry Winston in 2005 to create MB&F – Maximilian Büsser & Friends. MB&F is an artistic and micro-engineering laboratory dedicated to designing and crafting small series of radical concept watches by bringing together talented horological professionals that Büsser both respects and enjoys working with.

In 2007, MB&F unveiled its first Horological Machine, HM1. HM1’s sculptured, three-dimensional case and beautifully finished engine (movement) set the standard for the idiosyncratic Horological Machines that have followed: HM2, HM3, HM4, HM5, HM6, HM7, HM8 and HMX – all Machines that tell the time, rather than Machines to tell the time.

In 2011, MB&F launched its round-cased Legacy Machine collection. These more classical pieces – classical for MB&F, that is – pay tribute to nineteenth-century watchmaking excellence by reinterpreting complications from the great horological innovators of yesteryear to create contemporary objets d’art. LM1 and LM2 were followed by LM101, the first MB&F Machine to feature a movement developed entirely in-house. The year 2015 saw the launch of Legacy Machine Perpetual featuring a fully integrated perpetual calendar. LM SE was launched in 2017. MB&F generally alternates between launching contemporary, resolutely unconventional Horological Machines and historically inspired Legacy Machines.

As well as Horological and Legacy Machines, MB&F has created space-age MusicMachines (1, 2 and 3) in collaboration with music box specialist Reuge; and with L’Epée 1839, unusual clocks in the form of a space station (Starfleet Machine), a rocket (Destination Moon), a spider (Arachnophobia), an octopus (Octopod) and three robot clocks (Melchior, Sherman, and Balthazar). In 2016, MB&F and Caran d’Ache created a mechanical rocket-pen called Astrograph.

And there have been distinguished accolades reminding us of the innovative nature of MB&F’s journey so far. To name a few, there have been no less than 4 Grand Prix awards from the famous Grand Prix d’Horlogerie de Genève: in 2016, LM Perpetual won the Grand Prix for Best Calendar Watch; in 2012, Legacy Machine N°1 was awarded the Public Prize (voted for by horology fans) and the Best Men’s Watch Prize (voted for by the professional jury). In 2010, MB&F won Best Concept and Design Watch for the HM4 Thunderbolt. In 2015 MB&F received a Red Dot: Best of the Best award – the top prize at the international Red Dot Awards – for the HM6 Space Pirate.

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THE MACHINE



KELYS & CHIRP BLUE FACE



KELYS & CHIRP GREEN FACE



KELYS & CHIRP OCHRE FACE



KELYS & CHIRP YELLOW FACE



CHIRP



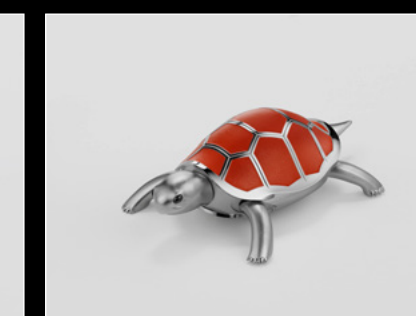
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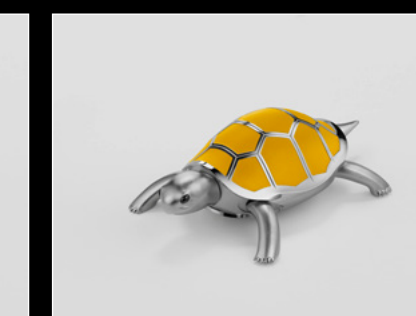
KELYS BLUE FRONT



KELYS GREEN FRONT



KELYS OCHRE FRONT



KELYS YELLOW FRONT



ASSEMBLING



COMPONENTS



MOVEMENT

IN SITU



KELYS&CHIRP IN SITU CLOSED



KELYS&CHIRP IN SITU OPEN

THE FILM



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