



FERDINAND
← 1753 →
BERTHOUD





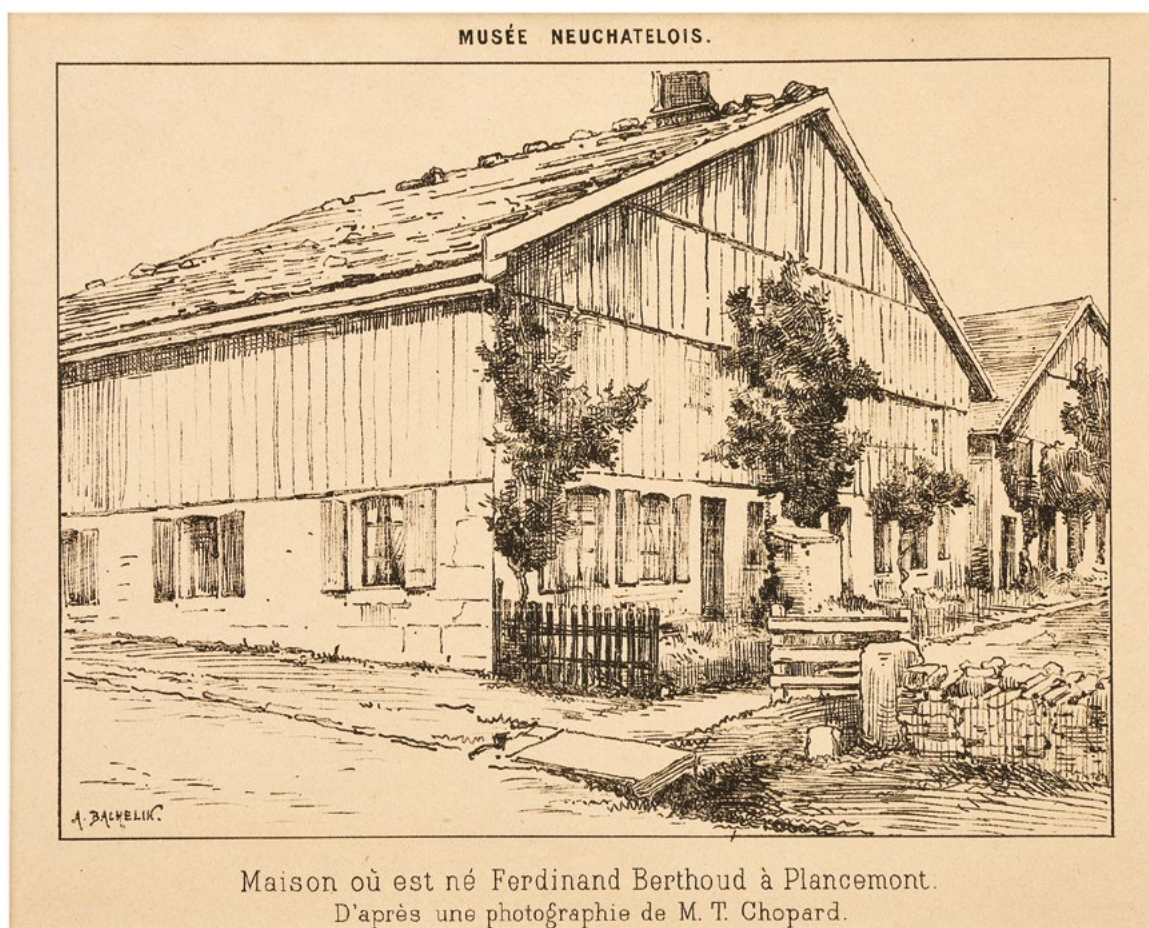
Marine Clock No.4

FERDINAND BERTHOUD

TIME, AND A MEETING OF KNOWLEDGE

THE FLEURIER MANUFACTURE, FOREVER TRUE TO THE ARTISANAL
SPIRIT OF WATCHMAKING TRADITION, DRAWS WOMEN AND MEN
TOGETHER AROUND A SHARED VISION.

Sharmila Bertin



A second too many, a second too early, and everything can change. A second, a microscopic amount of time to take a breath, assess a situation, avoid a crisis. The turn that shouldn't have been taken. The decision that should have been taken. This little second is more precious than a gem. It has the power to turn lives upside down. It may seem impossible as time is a gigantic hourglass that nothing can stop and,

yet, it can be assessed. Two words can express it: chronometric precision.

Chronometry. The science that studies the measurement of time and timekeeping. The knowledge of accuracy. A responsibility for Ferdinand Berthoud (1727-1807), celebrated figure in the world of watchmaking, whose eyes were forever riveted on this second

throughout his 60-year career. His name is mentioned in every specialized manual, his legacy has led many of his counterparts to make significant mechanical breakthroughs that shape modern-day watchmaking, as well as the creation of an eponymous Maison, a decade ago, dedicated to producing outstanding, rare pieces, always in keeping with age-old, artisanal tradition.

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Marine Clock No.4

From Neuchâtel to Paris: fulfilment

Ferdinand Berthoud was born on 18 March 1727 in the district of Val-de-Travers in the canton of Neuchâtel, into a family of watchmakers, clockmakers to be exact. He was introduced to the craft by his brother who took him on as a clockmaking and restoration apprentice in 1741. Four years later, in 1745, he left his native land, at the age of 18, and moved to Paris to hone his technical skills. While there, he encountered a host of watchmakers including Julien Le Roy (1686-1759) and his son Pierre Le Roy (1717-1785), both successively appointed watchmakers for Louis XV (1710-1774). As the years went by, their friendship would turn into rivalry.

"THE MARINE CHRONOMETER WAS A LARGE-SIZED WATCH DESIGNED TO KEEP TIME ON SHIPS"

Dominique Fléchon
Historian

Young Ferdinand very quickly showed a natural flair for science, in particular mathematics, and developed a growing interest for regularity and precision, these parameters that make up the cornerstone of what was not yet known as chronometry. When he was 26, he received the official title of Master Watchmaker and was tasked with writing several articles for the *Encyclopédie*, under the direction of philosopher and writer Denis Diderot

(1713-1784) around 1755. As he loved sharing his knowledge, he went on to write the *Traité des Horloges marines* (Treatise of Marine Clocks) in 1773. And, would help train one of his young compatriots, Abraham-Louis Breguet (1747-1823), as well as his own nephew, Pierre-Louis known as Louis Berthoud (1754-1813).

In 1763, he was commissioned by the French King to travel to London with mathematician Etienne Camus (1699-1768) and astronomer Joseph de Lalande (1732-1807) to inspect the H4, a precision watch that could be used to determine longitude quickly, easily and reliably out on the open sea. During this 18th-century period where geopolitical and geo-economical tension was rife

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between France and England, the object created in 1761 by British clockmaker John Harrison (1693-1776), who had devoted some 31 years of his life to it, would be a major turning point. In short, it was able to keep the time of the port of origin and, as such, made calculations easier. Ferdinand Berthoud would make several round trips to try to unravel the secrets of John Harrison's work.

Back in Paris, he imagined his own instruments, sturdy, reliable tools intended to be taken on-board sailing vessels whose journeys in the high seas were frequently affected by the vagaries of nature. In 1766, he made his Marine Clocks No.6 and No.8, thanks to financing from Louis XV for royal ships. The success of trials carried out at sea led him to receive the title of Horologist-Mechanic by appointment to the French King and the Navy, and then, this Swiss man who had settled in Paris to pursue his career, was made a Knight of the French Legion of Honour by Napoleon Bonaparte (1769-1821).

From Paris to the far reaches of the sea: exploration

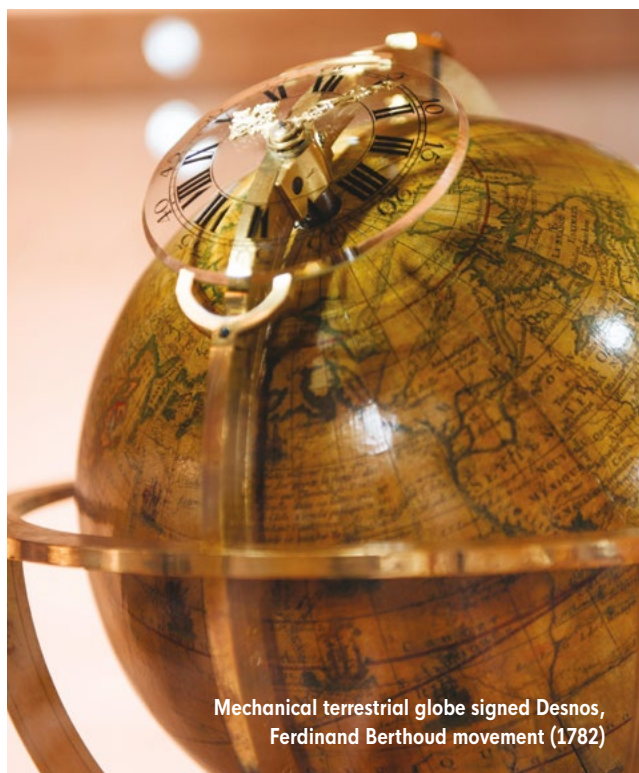
The century that saw the emergence

of the great watchmaker Ferdinand Berthoud was also a flourishing period for the French Navy, which renewed its ageing vessels, innovated, equipped itself with cannons to counter the English Navy that dominated the oceans and Dutch ships that were also striving to open up sea routes. These fleets, which were indispensable, irrespective of whether they were military or merchant, provided a means to explore and tap into new regions on the far reaches of the world, to increase the surface area of colonies, as well as to ward off attacks from enemy nations. The instruments that were specially-developed for the naval forces, in particular marine clocks and future marine chronometers, a designation that didn't yet exist at the time, played a role in this momentum.

"Historically-speaking, the marine chronometer was a large-sized watch designed to keep time on ships", states Dominique Fléchon, author of The Mastery of Time: A history of timekeeping, from the sundial to the wristwatch: discoveries, inventions, and advances in master watchmaking, published by Flammarion in French and in English in 2011. "From the last years of the 18th century, a marine

chronometer has been referred to as a timepiece that almost always features a detent escapement, whose direct drive-hand jumps every half-second, mounted on a gimbal suspension, usually equipped with a power reserve indicator, protected from dampness and shocks by a wooden case generally made from mahogany", pursues the historian.

Timekeeper. A kind of neologism that was used to describe the craft of Ferdinand Berthoud, who made his own, his first ever, in 1754. This quest for precision was much more than just a craft and would become the very essence of his existence, fuel that would motivate him to work relentlessly on this tool. *"Etymologically-speaking, a chronometer is a device that measures time. Use turned it into a high-precision watch that would display the second, and whose movement would be tested for several days in various positions and at various temperatures by an independent official body", continues Dominique Fléchon. Although watchmaking has considerably evolved over more than two and a half centuries, the second, the element that has the power to change a destiny, has always remained true to itself.*



Mechanical terrestrial globe signed Desnos, Ferdinand Berthoud movement (1782)



Ferdinand Berthoud Astronomical Pocket Watch No.3, executed by Jean Martin (1806)

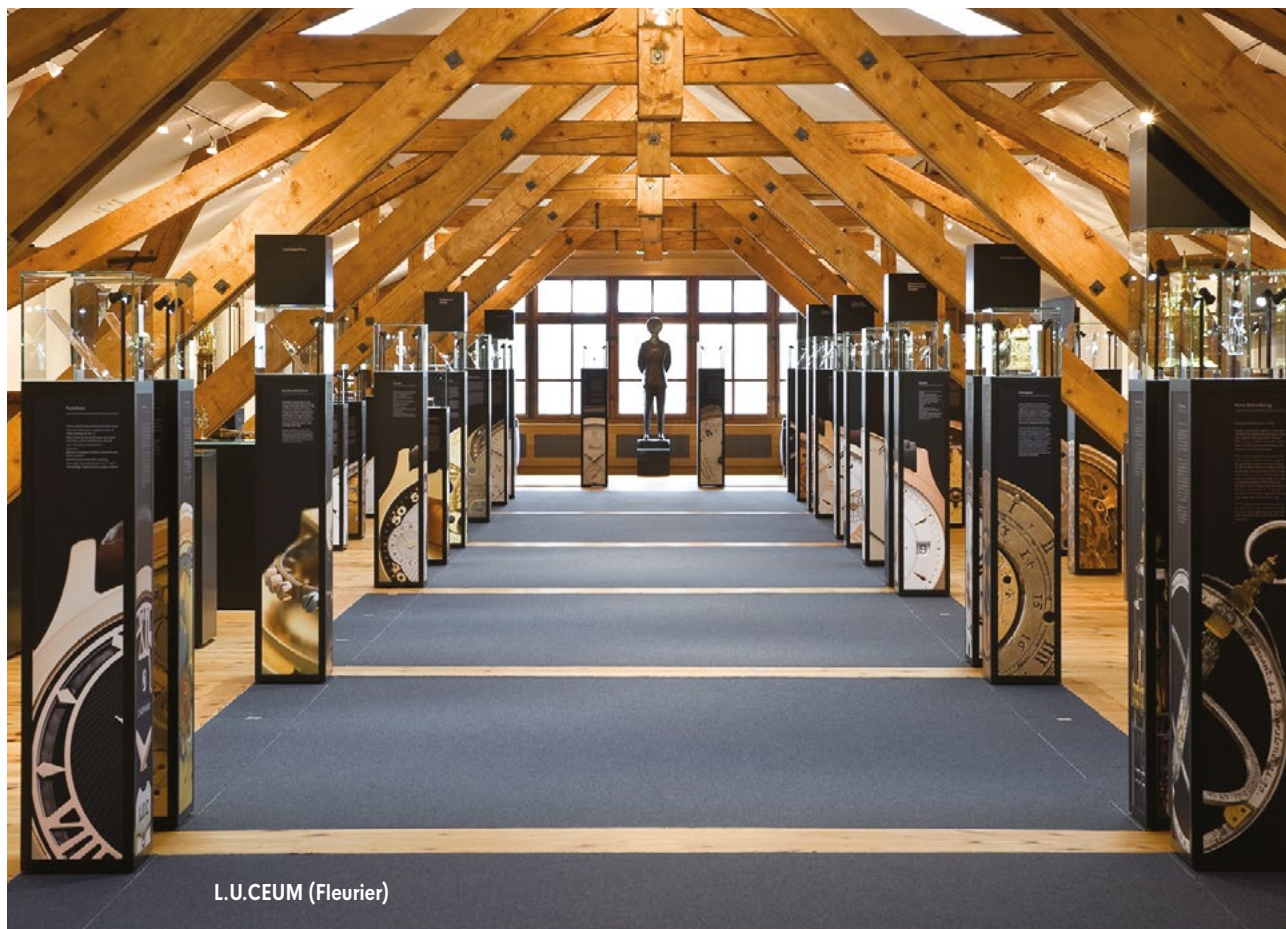
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Karl-Friedrich Scheufele
Chronométrerie Ferdinand Berthoud President

FROM THE FAR REACHES OF THE SEA TO FLEURIER: RENAISSANCE

Sharmila Bertin



L.U.CEUM (Fleurier)

Even though his surname equates to rich heritage consigned in the industry's history, in the form of technical engineering and written works, even though it's mentioned in a biography alongside that of well-known counterparts who he mingled with and occasionally trained, his name remained discreet, even somewhat neglected until the beginning of the 2000s when Karl-Friedrich Scheufele "acquired" it.

During a recent interview, Chopard Co-President and Chronométrie Ferdinand Berthoud President explained why: "It

CHRONOMETRY. THE SCIENCE THAT STUDIES THE MEASUREMENT OF TIME AND TIMEKEEPING. THE KNOWLEDGE OF ACCURACY

was a real discovery. I'd always been fascinated by marine chronometers and precision clocks. We've our own museum in Fleurier [Ed. the L.U.CEUM, on the Group's manufacturing site] that recounts five centuries of watchmaking history, and there's a section devoted

to marine chronometers. I came across an amazing model by Berthoud and I was totally bowled over by its quality. That really got the ball rolling. I immersed myself in Berthoud's work and was fascinated by the extent of his contribution, not just as a clockmaker, but also as a writer and thinker during the Age of Enlightenment".

"What surprised me was that Berthoud had been virtually forgotten about, even though what he had done was incredible. He published an impressive number of works on watchmaking and really wanted to share his knowledge. And, that's

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something rare in this field. I then found out that he'd been born at about ten or fifteen minutes from Fleurier", pursues the business leader. "So, all these things came together. I managed to obtain the rights to the name and I persuaded the owner to sell it to me, without knowing what I was going to do with it. I just knew I wanted to honour Ferdinand Berthoud's legacy in a serious way".

As patience is one of the most important virtues of watchmakers and of anyone working in the realm of time, a decade went by before the first chronometers, two 50-piece editions, named FB 1.1 and FB 1.2, which boasted an extremely-complicated, state-of-

the-art movement and which paid tribute to the great man's knowledge, were unveiled. *"When I acquired the Ferdinand Berthoud name in 2006, I wanted to make sure that, one day, a watch bearing this illustrious surname would be on a par with the man who is considered as the father of marine chronometry, the watchmaker of explorers",* Karl-Friedrich Scheufele declared to the press and collectors who had come along to discover these new references.

Success was on the cards as these pieces, which reinterpret some of the features of historic marine clocks with an up-to-the-minute twist, were an instant

hit and placed Ferdinand Berthoud in the spotlight. The transition between the 18th and 21st centuries was enthusiastically acclaimed. This great commitment to technical development, to research into aesthetic appeal, was moreover acknowledged with the "Aiguille d'Or" award during the Grand Prix d'Horlogerie de Genève (GPHG) in 2016, then with the Chronometry award in 2019 and 2023, as well as a host of other prestigious honours. The Maison embraced excellence as its philosophy, fine workmanship as its primal nature, precision as its signature. Thereinafter, every reference that would be created by the manufacture's Fleurier ateliers earned connoisseurs' admiration.

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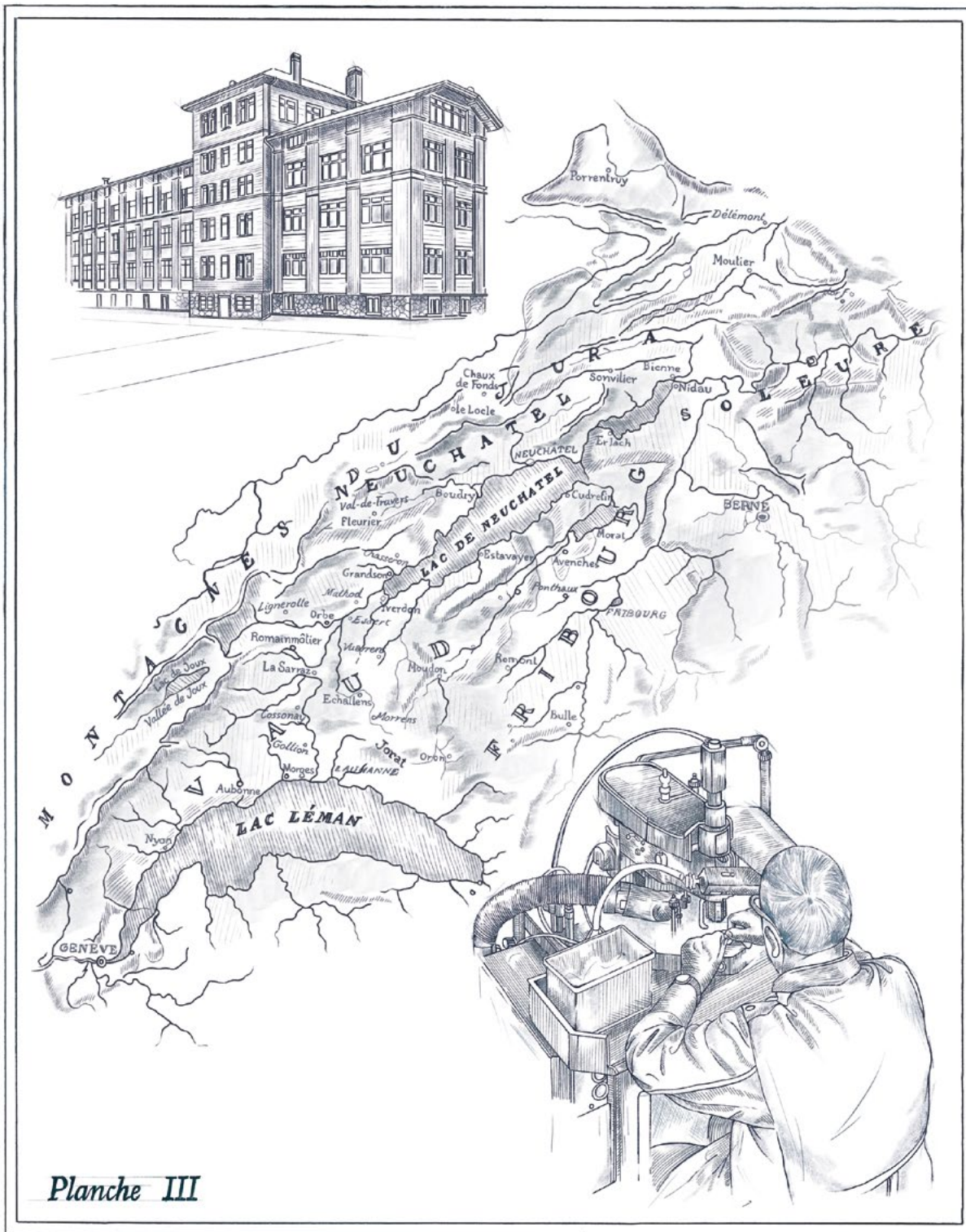
Calibre FB-T.FC



FB 1.1

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Un Projet Fédérateur



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IN FLEURIER: TIME FOR PASSING ON

Sharmila Bertin



Daniel Bolognesi, Karl-Friedrich Scheufele, David Bernard

In 2019, Chronométrie Ferdinand Berthoud set itself a new challenge, a project named Naissance d'une Montre 3, whose development was presented in six acts, teasers to whet the curiosity it sparked, and which was supported by the Musée international d'horlogerie (International watchmaking museum, MIH) in La Chaux-de-Fonds and, above all, which was joined by the Time Æon Foundation, these "Guardians of Knowledge" who, back in 2005, set themselves *"the task to strive to take the art of watchmaking to its pinnacle"*, to keep it well above passing trends. This alliance of custodians

"NAISSANCE D'UNE MONTRE 3 IS A REAL ACCOLADE TO WATCHMAKING KNOW- HOW"

Karl-Friedrich Scheufele
Chronométrie
Ferdinand Berthoud President

of classical work, brings together iconic figures from the sector such as Stephen Forsey, Robert Greubel, Kari Voutilainen, David Bernard, Vianney Halter, Dominique Renaud, Felix Baumgartner and Philippe Dufour.

The idea behind Naissance d'une Montre 3 focuses on passing on horological expertise, working in a "traditional way", by training tomorrow's specialists on the manufacture's premises in Fleurier, a municipality in the district of Val-de-Travers, to follow in Ferdinand Berthoud's footsteps and chart his prolific career. This project is actually much more than just a challenge, it's a real incomparable human, cultural, inspirational adventure that sees some 80 women and men come together to pool their talents and forge new ones.

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For this third act, the two previous ones were "drafted" by other industry players with the help of the Time Æon Foundation, Karl-Friedrich Scheufele chose to take on a different approach. *"We broadened our scope of action. Instead of just having one apprentice working under a master, we set up a whole team with experienced craftspeople, young watchmakers and even apprentices, who all worked hand-in-hand. This sort of environment triggers energy. It promotes exchanges. It enables knowledge to flow more freely"*, he states during a discussion. *"We also set ourselves a technical challenge.*

For example, we created a bi-metal balance wheel for this watch by hand, something that had never really been done before in modern times. It meant hundreds of hours of trial and error, but the result is so precise that the watch was granted COSC certification. And, that's just one component among many others. Everything, from the movement to the case, was designed and made using restored vintage tools or entirely by hand".

This ambitious goal to fashion eleven pieces of an exceptional timepiece entirely made by hand and made

in-house required, just like any well-crafted object, great patience. Six years in the making. More than half a decade. *"Covid slowed us down, otherwise we could have perhaps completed this project in four years. Overall, we devoted 11,000 hours to this watch. This turned into a company-wide effort that didn't just involve the Ferdinand Berthoud team, but also Chopard's craftspeople. The case, the engraving, the finish: everything was made in-house using recommissioned machines from the 1960s, many of which we had to restore ourselves"*, emphasizes Karl-Friedrich Scheufele.



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Smelting tests carried out to obtain
a perfect Invar-brass combination

FROM FLEURIER TO THE WHOLE WIDE WORLD: EPILOGUE

Sharmila Bertin



Despite the ups and downs that all businesses experience, whether it's a global pandemic or keeping teams motivated over the long term, the watch has (at last) been rolled out: Naissance d'une Montre 3 is a masterpiece of technical wizardry with breathtaking finishes, true to the standards of excellence established in 2015 when the first pieces were launched. It draws its inspiration from Ferdinand Berthoud's original Astronomical Pocket Watch No. 3, which he imagined in 1775 and which was assembled and adjusted, "executed" using the specialized vocabulary term, by Jean Martin (NC),

THE FIRM EMBRACED EXCELLENCE AS ITS PHILOSOPHY, FINE WORKMANSHIP AS ITS PRIMAL NATURE, PRECISION AS ITS SIGNATURE

his apprentice and employee, in 1806, and which is part of the L.U.CEUM's collection.

Prior to the final act, which lifts the veil on this mysterious watch, Ferdinand Berthoud (the brand we know today) kept lovers of its watchmaking in the

loop on a regular basis by narrating every stage of the project like a detective novel where you frantically turn over the pages, your eyes racing over the printed prose, just dying to discover the climax of this intrigue that keeps you hanging on the edge of your chair, thinking that it's never ever going to come to an end.

Act I, like a preface, introduces the project, its players, the marriage of crafts to perpetuate know-how around a watch and describes the mechanical complexity of the fusée-and-chain mechanism that delivers a constant

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force. Act II evokes the tool machines of the 50s and 60s gathered in an atelier and reconditioned so they could be used for this project. *"Our teams began to understand the benefits of this exercise. In some cases, we even discovered finishing techniques that went far beyond what we could do with modern-day equipment. This was a truly powerful eye-opener. We documented everything, so much so that we now have an in-house archive where all these skills are stored"*, states Karl-Friedrich Scheufele.

Act III, on the other hand, focuses on the protagonists and goes into the manufacturing of a prototype, which boosts the excitement in an audience that's already really impatient, whilst Act IV looks at the display. The dial and its hands make up the face of a timepiece, they elucidate its key role, i.e. to deliver time data, whether it's "just" for telling the time or reveals more detailed, more complex displays. It goes without saying that readability and

design are of the utmost importance.

For Naissance d'une Montre 3, the seconds hand, epitomizing precision, takes pride of place in its own right. Its 25 mm-long, svelte, tapered, flame-blued steel body, rhythmically hovers over a structured, hand-engraved 18-carat gold surface, and points to Arabic numerals that run around the satin-brushed white gold flange. The hours and minutes, slightly more in the background yet still highly-present, tick over in a dial whose circular edging extends over the top right-hand corner, between 12 and 3 o'clock. At this stage, no sketches, no photos of the timepiece have been disclosed, everything's preciously hidden from the public eye in the privacy of the ateliers. Only imagination, whose wish will soon be granted, comes into play here.

Penultimate teaser, Act V deals with the casing, i.e. all the parts that make up the watch head apart from its motorization: the case with its case

middle, its lugs, its bezel and its crown. No digital assistance was called on for the conception, only the hands of concentrated humans, who control the tools. Micro-mechanics sculpts the volumes and the shapes, which are then softened, embellished, thanks to the meticulousness of fingers.

Finally, Act VI takes to the stage, the epilogue of this collective work of a group of passionate craftspeople who coordinated synergies between the different crafts at play brilliantly, and the liberation of this piece which, after six intense years, can now take its first steps in the real world, ten years after the presentation of the first FB 1.1 and FB 1.2 series. Photos can finally appear on the scene and disseminate the charm of this object that has been kept under wraps for ever so long. This reference, produced in a finite quantity of just eleven pieces, flaunts an impressive 44 mm-diameter, 13 mm-high, round, domed, ethical white-gold body, set off with a notched winder.



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Calibre FB-BTC.FC that beats inside, unites a combination of traditional achievements, such as the temperature-compensated split bi-metal balance wheel, a constant force fusée-and-chain mechanism, a barrel with a saw-tooth ratchet wheel and click, a stop-balance system and a shock absorber with diamond endstones.

This hand-wound movement, entirely crafted by hand using traditional tools, which measures 37.50 mm in diameter and is 8.35 mm thick, chronometer-certified by the COSC (Official Swiss Chronometer Testing Institute), beats at a frequency of 3 Hz and delivers a 50-hour power reserve, whose indicator features on the baseplate. This beating heart, which is totally visible on the front of the timepiece and gifted with spectacular depth where the central seconds hand appears to float, also invites to be admired on the transparent back held by eight screws.

A citation from Louis Berthoud, Ferdinand Berthoud's nephew and right-hand man, engraved on the caseback, rings out like a sacred formula, "*Au temps qui instruit*" ("To time that enlightens"). This phrase, on its own, sums up the exchanges shared throughout this unprecedented cooperation between all the people whose input and commitment led to engendering this collaborative creation, just like Ferdinand Berthoud would have done in his time. Some talents asserted themselves, some callings came to light, like a nod to this slanted, curved wording, required by the times, that whisks us back to the 18th century and to the marvellous inventions of Louis' uncle, the legendary timekeeper.

"Naissance d'une Montre 3 is a real accolade to watchmaking know-how" declares Karl-Friedrich Scheufele. *"For*

more than six years, all the crafts from the entire Chopard Group embraced a mission and, thanks to sheer perseverance and experience, managed to master the traditional mechanical and watchmaking skills required to breathe life into this extraordinary timepiece. As we celebrate the tenth anniversary of Chronométrie Ferdinand Berthoud, we couldn't have imagined a finer tribute to the Master Watchmaker who devoted his career to developing the most precise timepieces of the times and to sharing his knowledge", he concludes.

The second is decisive, it corresponds to the unit that measures precision, it is the quintessence of events, an ambassador that lasts. Time, on the other hand, draws humanity together in a powerful spirit of eternity. **TWM**

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NAISSANCE D'UNE MONTRE

FB 48TC1

Au750

Aux temps qui instruisent

Ferdinand Berthoud

Chronomètre Val-de-Travers

Suisse

39 Diamètres

PROTOTYPE

1834



T H E Q U E S T F O R P R E C I S I O N

CHRONOMÈTRE FB 35PC.3

The first mechanical movement with a
cylindrical balance-spring, 72h power reserve
and chronometer-certified by the COSC.

Case diameter: 42 mm

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