

# LEGACY MACHINE SPLIT ESCAPEMENT

MB&F





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## FOR FURTHER INFORMATION

### PLEASE CONTACT:

CHARRIS YADIGAROGLOU,

MB&F SA,

RUE VERDAINE 11,

CH-1204 GENEVA, SWITZERLAND

EMAIL: [CY@MBANDF.COM](mailto:CY@MBANDF.COM)

TEL: +41 22 508 10 33

## SUMMARY

There is one technical constant that defines every single watch in the MB&F Legacy Machine collection. Functions may vary, and different complications come to the fore in each edition, but the suspended balance wheel remains literally and metaphorically above everything else. In Legacy Machine Split Escapement, this feature is not only highlighted, but raised to another level of achievement.

Just below the highest point of the domed dial crystal, the balance of LM SE beats at a sedate, traditional 2.5Hz / 18,000bph. What is rather less traditional is its construction. Unlike most of the other suspended balances in the Legacy Machine collection — indeed, unlike any other balance outside of MB&F — the balance of LM Split Escapement seems to oscillate on its own, without any visible intake of energy. The essential remaining parts of the escapement, which provide the driving impulse – anchor and escape wheel – are concealed on the opposite side of the movement, almost 12 mm below; hence the name 'Split Escapement'.

Under the balance, the triple-dial design of LM SE gives the time at 12 o'clock, the power reserve indication at 4 o'clock and the date at 8 o'clock. The date can be quickly and easily adjusted thanks to a push-button on the side of the case, next to the date dial.

Other design features are natural evolutions of those found in previous Legacy Machines, such as the organically arched balance bridge found in the LM Perpetual. More visibly, LM SE features the micro-textured "frosted" finish that is so closely associated with antique pocket watches of the 18th and 19th century; this traditional technique was presented by MB&F for the first time in the LM 101 'Frost' editions. Since the inspiration of the Legacy Machine collection lies in the era of frosted movements, smooth round watches and glossy white dials, it was only a matter of time before the frosted finish made another appearance at MB&F.

Antique watches featuring a frosted finish used acid baths to achieve this effect, but modern methods of replicating a frosted finish involves manually burnishing a metal surface with a wire brush. LM Split Escapement is a celebration of this technique, which is executed completely by hand for all 72 pieces of the launch editions.

The full beauty of frosting is brought out in Legacy Machine Split Escapement, with four launch editions in white gold. Each edition, limited to 18 pieces, is distinguished by frosting and movement finish of a different shade, which allows LM SE to embody varying aspects of its personality:

- Blue frosted finish paired with rhodium-plated movement for the most classically elegant version;
- Ruthenium frosting with similarly darkened movement evoking new-millennial functionality and putting the focus on the white lacquer dials;
- Red gold frosting and movement conveying warmth and accessibility, its subtle roseate sheen emphasising the intense hue of the blued hands;
- Yellow-gold frosting and movement finish: the strongest aesthetic affinity with the era inspiring the Legacy Machine collection, an era that defined the precepts of modern watchmaking.





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The first Legacy Machine drew on the atmosphere of wonder and optimism that characterised the World's Fair expositions of the late 19th and early 20th centuries. The suspended balance was designed to channel this heady mix of emotions, an effect achieved by its sharp departure from established watchmaking tradition. By transporting the impulse jewel, anchor and escape wheel to the opposite end of the engine, Legacy Machine Split Escapement magnifies the visual impact of its balance, akin to an illusionist meticulously hiding all traces of the mechanisms that drive his latest show-stopping opus. And just like any other enigmatic feat of visual wonder, it's achieved by bending some old rules and writing some new ones.

The sensitivity of the balance and the paramount role that it plays in chronometric precision are usually reason enough for watchmakers to avoid straying too far from convention when it comes to escapements. However, the outstanding horological mind of Stephen McDonnell, the watchmaker behind the award-winning Legacy Machine Perpetual, was able to circumvent the real and perceived hindrances to creating a new configuration of mechanical regulator.

Legacy Machine Perpetual was the first MB&F creation to utilise the split escapement in 2015, although the attention then was rightfully focused on the groundbreaking new perpetual calendar. Now, with Legacy Machine Split Escapement, the time for its eponymous feature has arrived.

Despite the technical hurdles faced in creating the split escapement, the LM SE engine is still designed with aesthetics and classicism in mind — beautifully symmetrical, with bridges that frame their underlying components and curve smoothly around gold chatons and countersunk jewels.

Dial-side, the balance bridge is the third iteration of a component that has been central in all Legacy Machines thus far. In the first Legacy Machines, the bridge was characterised by an industrialist aesthetic, but progressed to a more rounded form with a wedge-like base in Legacy Machine 101 and in the final edition of Legacy Machine N°1. In LM SE, similar to Legacy Machine Perpetual, the bridge assumes an organically arched line from end to end.

#### TECHNICAL CHALLENGES OF THE SPLIT ESCAPEMENT

In watchmaking parlance, the escapement is the set of components that allows the stored energy of the mainspring to escape in a series of regular controlled impulses instead of unwinding all at once. In its most common configuration, it consists of the balance assembly, anchor and escape wheel, and horological tradition dictates that these components should be as close to each other as possible to minimise external disturbing influences. In this particular area of horology, which is rarely challenged, MB&F is doing a new thing.

Whilst the balance of LM Split Escapement beats just under the dial-side dome of sapphire crystal, its impulse jewel, anchor and escape wheel are on the other side of the movement, visible through the transparent caseback. This necessitates an unusually long balance arbour, which runs through the centre of the movement, a true milestone of micro-mechanical and manufacturing technique.

The distance between the balance wheel and the impulse jewel is a full 11.78 mm, the length of the arbour that traverses the movement and projects through the dial to support the oscillator. A longer arbour increases the likelihood of disrupting influences on the oscillator, as well as the potential distorting effects of a long axle under continuous torsion. The inertia of the balance and the rigidity of the arbour are key factors in this delicate equation, and the LM SE engine is precisely engineered to ensure its chronometric integrity.

In the Split Escapement, stability of construction becomes exponentially more important than it usually is, which significantly restricts the margin of dimensional error during the manufacturing process. In addressing this, the balance arbour is fitted at both ends with anti-shock jewel bearings, and the bridge that holds the anchor and escape wheel is separately fixed for optimal fine adjustment.

Because a longer balance arbour has a higher mass, which potentially detracts from the amount of energy ultimately transmitted to the oscillator, the LM SE engine is driven by two barrels in parallel, which allows up to 72 hours of optimal timekeeping.





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## TRADITIONAL FINISH

The burnished surface finish seen under the stretched lacquer dials of Legacy Machine Split Escapement is known as frosting, and is closely associated with watch movements from the 18th and 19th century. It was originally functional as well as decorative, providing an oxidised matte surface that resisted tarnish and gave off a subtle and even sheen, which is prized by antique collectors and enthusiasts.

Traditional methods of creating the frosted finish are no longer practicable, due to its hazardous nature (the procedure involved heating metal over an open flame before dipping it in concentrated nitric acid). To achieve the same effect, MB&F works with specialist craftsmen to recreate the texture and sheen of frosting without the use of chemicals.

The surface to be frosted is hand-worked with a wire brush, creating minute indentations one small area at a time. Each time, the wire brush must meet the metal surface with exactly the same angle and the same amount of pressure, and the indentations have to be evenly distributed over the entire surface in order to create the desired finish.

For Legacy Machine Split Escapement, a wider, more diffuse frosted finish was used, to accommodate the larger area and to draw attention to the hand-worked process. The surfaces were then PVD treated to colour them — blue, ruthenium, red gold or yellow gold.

## THE LEGACY MACHINE COLLECTION

MB&F debuted the Legacy Machine collection in 2011, the result of a radical thought experiment by founder Maximilian Büsser: "What would have happened if I had been born in 1867 instead of 1967? In the early 1900s the first wristwatches appear and I would want to create three-dimensional machines for the wrist. There are no Grendizers, Star Wars or fighter jets for my inspiration, but I do have pocket watches, the Eiffel Tower and Jules Verne. So what might my early 20th-century machines look like? They had to be round (tradition) and three-dimensional (MB&F Machine): Legacy Machines are the answer."

Legacy Machine N°1 simultaneously marked a sharp departure from the Horological Machines for which MB&F was already known, and also established the aesthetic codes for a new family of MB&F creations. Round cases, white lacquer dials, movements classically finished with Geneva stripes and polished chamfers, and the one disruptive element — the suspended balance — all the more arresting because of its wholly traditional setting.

The six years since the double time-display LM1 was released have seen another four distinct series of Legacy Machine emerge, making five in total. Legacy Machine N°2, with its two regulators, premiered in 2013. Legacy Machine 101, the distillation of the aesthetics of the Legacy Machine collection and MB&F's first in-house movement, came a year later, and the high-complication Legacy Machine Perpetual arrived in 2015.

The emphasis on technical creativity that characterised LM Perpetual also defines LM Split Escapement, whose engine is derived from LM Perpetual but has shed its complication to reveal the innovation at its heart.



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4 white gold launch editions limited to 18 pieces each, with a frosted dial plate in blue, ruthenium, red gold or yellow gold.

### ENGINE

Movement developed for MB&F by Stephen McDonnell.

Split escapement with the balance wheel suspended above the dial and the anchor under the movement.

Manual winding with double mainspring barrels.

Bespoke 14mm balance wheel with traditional regulating screws visible on top of the movement.

Superlative hand finishing throughout respecting 19th-century style; bevelled internal angles highlighting hand craft; polished bevels; Geneva waves; hand-made frost and engravings.

Power reserve: 72 hours

Balance frequency: 2.5Hz / 18,000bph

Number of components: 314

Number of jewels: 35

### FUNCTIONS & INDICATIONS

Hours, minutes, date and power-reserve indicators.

Push-button next to the date dial for quick adjustment of the date.

### CASE

Material: launch editions in 18K white gold

Dimensions: 44mm x 17.5mm

Number of components: 49

Water resistance: 30m / 90' / 3ATM

### SAPPHIRE CRYSTALS

Sapphire crystals on top and display back treated with anti-reflective coating on both faces.

### STRAP & BUCKLE

Black or brown hand-stitched alligator strap with white-gold folding buckle.

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**Concept:** Maximilian Büsser / MB&F  
**Product design:** Eric Giroud / Through the Looking Glass  
**Technical and production management:** Serge Kriknoff / MB&F  
**Movement design and finish specifications:** Stephen McDonnell and MB&F  
**Movement development:** Stephen McDonnell and Ruben Martinez / MB&F  
**R&D:** Guillaume Thévenin and Ruben Martinez / MB&F

**Wheels, pinions, movement components:** Dominique Guye / DMP  
**Balance wheel bridge and plates:** Benjamin Signoud / AMECAP  
**Balance wheel:** Dominique Lauper / Precision Engineering  
**Balance spring:** Stefan Schwab / Schwab-Feller  
**Bridges:** Rodrigue Baume / Damatec, Georges Auer / Mecawatch  
**Movement components:** Alain Pellet / Elefil  
**Hand-finishing of movement components:** Jacques-Adrien Rochat / C-L Rochat and José Labarga / Labarga  
**PVD-treatment:** Pierre-Albert Steinmann / Positive Coating  
**Movement assembly:** Didier Dumas, Georges Veisy, Anne Guitier, Emmanuel Maître, and Henri Porteboeuf / MB&F  
**After-sales service:** Thomas Imberti / MB&F  
**In-house machining:** Alain Lemarchand and Jean-Baptiste Prétot / MB&F  
**Quality control:** Cyril Fallet / MB&F  
**Case:** Pascal Queloz / Oréade  
**Dial:** Hassan Chaïba and Virginie Duval / Les Ateliers d'Hermès Horloger  
**Buckle:** Dominique Mainier  
**Hands:** Pierre Chillier, Isabelle Chillier and Marcos Zamora / Fiedler  
**Sapphire crystals:** Martin Stettler / Stettler  
**Strap:** Olivier Purnot / Camille Fournet  
**Presentation box:** Olivier Berthon / ATS Atelier Luxe  
**Production logistics:** David Lamy and Isabel Ortega / MB&F

**Marketing & Communication:** Charris Yadigaroglou, Virginie Meylan and Juliette Duru / MB&F  
**M.A.D.Gallery:** Hervé Estienne / MB&F  
**Sales:** Sunita Dharamsey, Rizza Naluz and Philip Ogle / MB&F  
**Graphic design:** Samuel Pasquier / MB&F, Adrien Schulz and Gilles Bondallaz / Z+Z  
**Product photography:** Maarten van der Ende  
**Portrait photography:** Régis Golay / Federal  
**Website:** Stéphane Balet / NORD Magnétique, Victor Rodriguez and Mathias Muntz / NIMEO  
**Film:** Marc-André Deschoux / MAD LUX  
**Texts:** Suzanne Wong / REVOLUTION Switzerland

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## MB&F – GENESIS OF A CONCEPT LABORATORY

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. 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 spider (Arachnophobia) 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 No.1 was awarded the Public Prize (voted for by horology fans) and the Best Men’s Watch Prize

(voted for by the professional jury); and 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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WWW.MBANDF.COM

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### THE MACHINE



LM SE BLUE LM SE BLUE



LM SE RED LM SE RED



LM SE RUTHENIUM LM SE RUTHENIUM



LM SE YELLOW LM SE YELLOW

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