

HM3 FROG X

MB&F

THE TEN-YEAR LEAP





SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,

PLEASE CONTACT

CHARRIS YADIGAROGLOU

CY@MBANDF.COM

ARNAUD LÉGERET

ARL@MBANDF.COM

MB&F SA, RUE VERDAINE 11,

CH-1204 GENÈVE, SWITZERLAND

PHONE: +41 22 508 10 38

HM3 FROG X

SUMMARY

In 2009, MB&F was four years into its creative expression of mechanical art. Horological Machines N°1 and N°2 had established the guiding principles of the Maximilian Büsser & Friends collective: audacious design, transformative micromechanics, untrammelled imagination. Then came Horological Machine N°3; HM3 had everything that HM1 and HM2 had before — the design, the micromechanics, the imagination — but its defiant three-dimensional construction shot MB&F into hyperspace.

One year later, in 2010, the vehicle that transported MB&F into a new universe proved its versatility and cemented its place in the hearts of MB&F lovers everywhere, by morphing into the Tribe's first (and best-loved) mascot: the HM3 "Frog".

Two globular "eyes" that rotated to give the hours and minutes. A widely grinning "mouth" revealing the occasional bright flicker of the signature MB&F battle-axe rotor as it swept past a date scale. A glistening "skin" of titanium, red gold or exotic zirconium. HM3 Frog may have been small as a specimen of amphibious pondlife, but it was mighty on the wrist as it leapt to iconic status at the crossroads of kinetic art and horology.

Now, 10 years after its debut, HM3 Frog makes its comeback, radiantly exposed in a sapphire crystal case, yet still with a hidden message to be discovered. Presenting Horological Machine N°3 "FrogX".

For the first time, the HM3 engine is showcased in all its glory, used here in its MegaWind iteration that trades the date display for an expanded rotor. Two paper-thin domes, milled out of aluminium to be as light as possible, indicate the hours and minutes, rotating under markers designed to resemble the lateral pupils of a frog's eyes. Super-LumiNova accents, like the vivid colours that nature endows upon its feistiest creatures, reveal themselves in fluorescing segments under the rotor and on the time-display domes.

If the first HM3 Frog was an animal of land and lake, FrogX brings us into the arboreal realms of the transparent-skinned glass frogs of Central American cloud forests. The

transparent case of FrogX is entirely of sapphire crystal, one of the hardest known minerals, and must be milled with diamond-tipped tools or special high-tech carbide bits. Despite MB&F's experience with the most advanced sapphire-crystal producers (as demonstrated in earlier MB&F creations such as the HM4 Thunderbolt and HM6 Alien Nation), machining the case of HM3 FrogX still provides a considerable challenge. The separate sapphire domes not only need to be uniform in size, they must also be exactly uniform and consistent in thickness and curve so as not to create any final optical distortions in the reading of the time.

Those looking at the winding and setting crown of HM3 FrogX, expecting to see the usual battle-axe insignia, will be slightly baffled to find a smooth, highly polished disc (although exceptionally observant individuals may notice a slight irregularity in its reflection of light). At just the right angle, with just the right kind of directional light and just the right receiving surface, the final secret of the fully exposed FrogX is revealed. A secret signal, created by sculpting the metal crown at microscopic levels to allow it to reflect light in highly specific ways, is the key to unlocking the MB&F battle-axe.

The HM3 FrogX 10th anniversary limited editions are available in three versions of 10 pieces each with blue, purple or turquoise rotors and matching colours of Super-LumiNova and case gaskets.





HM3 FROG X

SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,
PLEASE CONTACT
CHARRIS YADIGAROGLOU
CY@MBANDF.COM
ARNAUD LÉGERET
ARL@MBANDF.COM
MB&F SA, RUE VERDAINE 11,
CH-1204 GENÈVE, SWITZERLAND
PHONE: +41 22 508 10 38

A HIDDEN CALL SIGN

To create the secret battle-axe signal, MB&F worked with light-sculpting techniques pioneered by Rayform, a Swiss company whose technology has various applications, from design to anti-counterfeiting measures.

By micro-forming a metal surface at levels nearly imperceptible to the human eye, Rayform technology is able to direct incident light beams to be reflected in customised ways, creating a light-encoded message or design that can be viewed on any relatively uniform surface.

Among the global Tribe of MB&F, certain elements constitute an insiders' understanding of a shared passion, the battle-axe insignia being the first and foremost identifier of this exclusive community. With the secret message hidden via Rayform technology in the crown of HM3 FrogX, the code goes further undercover... even in a creation that exposes its innermost workings to the world.

A CLEAR CHALLENGE

Corundum, commonly known in its gem-quality form as sapphire, is one of the hardest minerals known to man. It is surpassed in hardness only by a few other materials, notably diamond (crystalline carbon), which rates a 10 on Moh's scale of hardness, while corundum is rated at 9. This exceptional hardness means that sapphire watch crystals are virtually scratch-proof, providing unparalleled legibility and material integrity over the long term, not to mention imparting a level of prestige that is not associated with regular silicate glass or transparent polycarbonate — the two most common alternatives to sapphire watch crystals.

Concurrently, this also means that sapphire is extremely challenging to machine in complex three-dimensional shapes, a challenge that is compounded by the small machining tolerances required in watchmaking. Since its very first creations, MB&F has worked with ever-increasingly complicated sapphire crystal components; the HM2 "Sapphire Vision" editions, the double-arched crystals of the HM4 Thunderbolt and the hallucinatory body of the HM6 Alien Nation being prime examples.

The very first MB&F HM3 Frog from 2010 already presented a significant advance in its time, with the twin domes in sapphire crystal over the indications of the hours and minutes. Not only did the curvature of the domed "eyes" of HM3 Frog have to be exactly right, the thickness of the crystal was strictly controlled throughout so as not to distort the time display. In FrogX, the two sapphire domes are fused to the upper case body, itself also in sapphire crystal, creating an additional level of difficulty. Something we take for granted in biology — the formation of perfectly shaped pairs of optical lenses — proves a daunting task to replicate by mechanical means.

Machining and polishing each case of HM3 FrogX requires weeks of intensive and meticulous work, a number that would be multiplied greatly if not for MB&F's 15 years of experience in boundary-pushing sapphire crystal design since 2005.





SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,
PLEASE CONTACT
CHARRIS YADIGAROGLOU
CY@MBANDF.COM
ARNAUD LÉGERET
ARL@MBANDF.COM
MB&F SA, RUE VERDAINE 11,
CH-1204 GENÈVE, SWITZERLAND
PHONE: +41 22 508 10 38

HM3 FROG X

MORE ABOUT HOROLOGICAL MACHINE N°3

Horological Machine N°3 was first presented in 2009, and in its six years of production became MB&F's most popular model. Before FrogX, the case and movement architecture gave rise to 19 previous variations: HM3 Starcruiser in red and white gold, HM3 Sidewinder in red and white gold, HM3 ReBel, JWLRYMACHINE in purple and pink versions, HM3 Frog Ti, HM3 Chocolate Frog, HM3 Black Frog (green rotor), HM3 Frog Zr (purple rotor), HM3 Fire Frog, HM3 Poison Dart Frog, MoonMachine in titanium, black and red gold variations, MegaWind in red and white gold and the 2015 MegaWind Final Edition. Apart from its straightforward success as an MB&F creation, HM3 (and particularly HM3 Frog) is also the emotional touchstone of the MB&F Tribe, the global community of owners and aficionados that constitute an essential part of the universe of Maximilian Büsser & Friends. Now, with HM3 FrogX and its hidden battle-axe call sign, members of the MB&F Tribe have in common not only an open passion, but a secret code.

MORE ABOUT THE HM3 ENGINE

HM3 FrogX incorporates the distinctive HM3 engine in its MegaWind Final Edition version. Harmoniously crafted bridges, the oscillating balance wheel, gearing and MB&F's iconic battle-axe automatic winding rotor are all open to view on the dial side. This allows the wearer to fully appreciate the art and craft of the HM3 engine by drawing the viewer's gaze inside the highly complex machine; a machine comprising more than 300 fine-finished, high-precision components.

The engine of HM3, built by award-winning master watchmaker Jean-Marc Wiederrecht, is based on a Girard-Perregaux calibre, which has been literally turned upside down to allow for an uninterrupted view of the enlarged 22k gold and titanium winding rotor and the oscillations of the balance wheel.

Time indications are usually located on the top, or dial side, of a movement. As the HM3 engine is inverted to display its operation, an efficient solution was needed to bring power from the bottom of the movement to the time-indication domes at the top. Standard pinions set in jewels would have

required complex, friction-generating gearing, and would require support top and bottom — a factor which would increase the height of the movement, and thus the watch.

Instead of standard jewelled pinions, HM3 features two large-diameter (15mm) high-tech ceramic bearings. Because of their large diameter, these bearings minimise the number of friction inducing gears and, due to the rigidity resulting from their ultra-high precision design and manufacture, they only require support at one end (the base), allowing for a thinner movement.

The two 22K gold blades of the MB&F battle-axe rotor make what is called a "mystery" rotor because, in appearing to be symmetrically balanced instead of having a visibly off-centred mass, they seem to defy the laws of physics. This is achieved by machining the underside of one of the gold blades to a razor-thin edge, so reducing its mass. The enlarged iteration of the MegaWind rotor came about via a suggestion from frequent MB&F collaborator, Finnish watchmaker Stepan Sarpaneva (HM3 MoonMachine, MoonMachine 2) – highlighting once again the foundational values of MB&F as a collective of individual talents, a conjunction of deep-rooted relationships, a confluence of worlds.

MB&F





SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,
PLEASE CONTACT
CHARRIS YADIGAROGLOU
CY@MBANDF.COM
ARNAUD LÉGERET
ARL@MBANDF.COM
MB&F SA, RUE VERDAINE 11,
CH-1204 GENÈVE, SWITZERLAND
PHONE: +41 22 508 10 38

HM3 FROG X

TECHNICAL SPECIFICATIONS

HM3 FrogX 10th anniversary limited editions in sapphire crystal:
3 x 10 pieces in blue, purple or turquoise

MOVEMENT

Three-dimensional horological engine designed by Jean-Marc Wiederrecht / Agenhor, powered by a Girard-Perregaux base.

Balance frequency: 4Hz / 28,800 bph

Battle-axe automatic winding rotor in 22k gold and titanium with blue, purple or turquoise CVD coating matching the case gasket.

Hours and minutes transmitted via ceramic ball bearings to rotating domes.

Number of components: 277

Number of jewels: 36

Super-LumiNova segments under the battle-axe and on the hour and minute domes.

FUNCTIONS

Hours on one dome (aluminium dome rotating in 12 hours).

Minutes on second dome (aluminium dome rotating in 60 minutes).

"Secret message" crown reflects light rays to project the MB&F battle-axe icon (Rayform technology).

CASE

Material: sapphire crystal

Domes, bezel and back with anti-reflective treatment on each face

Gasket in blue, purple or turquoise matching the battle-axe rotor

Dimensions: 48.3 mm x 52.7 mm x 17.5mm

Number of components: 59

Water resistance: 30 m / 90 feet / 3 atm

DIALS

Rotating aluminium domes – 0.58g

STRAP & BUCKLE

Hand-stitched alligator strap with titanium custom designed folding buckle.

MB&F





HM3 FROG X

'FRIENDS' RESPONSIBLE FOR FROG X

Concept: Maximilian Büsser / MB&F

Product design: Eric Giroud / Through the Looking Glass

Technical and production management: Serge Kriknoff / MB&F

R&D: Simon Brette, Thomas Lorenzato and Robin Anne / MB&F

Movement: Jean-Marc Wiederrecht / Agenhor on a Girard-Perregaux base

Wheels, bridges, pinions and axis: Paul-André Tendon / Bandi, Jean-Marc Wiederrecht / Agenhor and Le Temps Retrouvé

Hand-finishing of movement components: Jacques-Adrien Rochat and Denis Garcia / C-L Rochat

CVD-treatment: Pierre-Albert Steinmann / Positive Coating

Movement assemblage: Didier Dumas, Georges Veisy, Anne Guiter, Emmanuel Maitre, and Henri Porteboeuf / MB&F

After-Sales service: Thomas Imberti / MB&F

Quality Control: Cyril Fallet / MB&F

Case and movements components: Alain Lemarchand and Jean-Baptiste Prétot / MB&F

Case decoration: Bripoli

Dial: Hassan Chaïba and Virginie Duval / Les Ateliers d'Hermès Horloger and Swissmec

Super-LumiNova: Frédéric Thierry / Monyco

Buckle: G&F Chatelain

Rotor: Marc Bolis / 2B8

Crown and correctors: Cheval Frères

"Secret message" crown: Rayform

Sapphire crystals: SaphirWerk and Createch

Anti-reflection treatment for sapphire crystals: Anthony Schwab / Econorm

Strap: Multicuir

Presentation box: Olivier Berthon / SoixanteetOnze

Production logistics: David Lamy, Isabel Ortega and Ashley Moussier / MB&F

Marketing & Communication: Charris Yadigaroglou, Virginie Toral and Arnaud Légeret / MB&F

M.A.D.Gallery: Hervé Estienne / MB&F

Sales: Thibault Verdonckt, Virginie Marchon, Cédric Roussel and Jean-Marc Bories / MB&F

Graphic design: Sidonie Bays / MB&F, Adrien Schulz and Gilles Bondallaz / Z+Z

Watch photography: Laurent-Xavier Moulin and Alex Teuscher

Portrait photography: Régis Golay / Federal

Webmasters: Stéphane Balet / Nord Magnétique, Victor Rodriguez and Mathias Muntz / Nimeo

Film: Marc-André Deschoux / MAD LUX

Texts: Suzanne Wong / WorldTempus

SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,

PLEASE CONTACT

CHARRIS YADIGAROGLU

CY@MBANDF.COM

ARNAUD LÉGERET

ARL@MBANDF.COM

MB&F SA, RUE VERDAINE 11,

CH-1204 GENÈVE, SWITZERLAND

PHONE: +41 22 508 10 38

MB&F





HM3 FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

Founded in 2005, MB&F is the world's first-ever horological concept laboratory. With almost 20 remarkable calibres forming the base of the critically acclaimed Horological and Legacy Machines, MB&F is continuing to follow Founder and Creative Director Maximilian Büsser's vision of creating 3-D kinetic art by deconstructing traditional watchmaking.

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 – all Machines that tell the time, rather than Machines to tell the time. The Horological Machines have explored space (HM2, HM3, HM6), the sky (HM4, HM9), the road (HM5, HMX, HM8) and the animal kingdom (HM7, HM10).

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. LM Perpetual, LM Split Escapement and LM Thunderdome broadened the collection further. 2019 marked a turning point with the creation of the first MB&F Machine dedicated to women: LM FlyingT. MB&F generally alternates between launching contemporary, resolutely unconventional Horological Machines and historically inspired Legacy Machines.

As the F stands for Friends, it was only natural for MB&F to develop collaborations with artists, watchmakers, designers and manufacturers they admire.

This brought about two new categories: Performance Art and Co-creations. While Performance Art pieces are MB&F machines revisited by external creative talent, Co-creations are not wristwatches but other types of machines, engineered and crafted by unique Swiss Manufactures from MB&F ideas and designs. Many of these Co-creations, such as the clocks created with L'Epée 1839, tell the time while collaborations with Reuge and Caran d'Ache generated other forms of mechanical art.

To give all these machines an appropriate platform, Büsser had the idea of placing them in an art gallery alongside various forms of mechanical art created by other artists, rather than in a traditional storefront. This brought about the creation of the first MB&F M.A.D. Gallery (M.A.D. stands for Mechanical Art Devices) in Geneva, which would later be followed by M.A.D. Galleries in Taipei, Dubai and Hong Kong.

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 5 Grand Prix awards from the famous Grand Prix d'Horlogerie de Genève: in 2019, the prize for Best Ladies Complication went to the LM FlyingT, in 2016, LM Perpetual won the Best Calendar Watch award; in 2012, Legacy Machine No.1 was awarded both 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.

SUMMARY

A HIDDEN CALL SIGN

A CLEAR CHALLENGE

MORE ABOUT HOROLOGICAL MACHINE N°3

MORE ABOUT THE HM3 ENGINE

TECHNICAL SPECIFICATIONS

'FRIENDS' RESPONSIBLE FOR FROG X

MB&F – GENESIS OF A CONCEPT LABORATORY

FOR MORE INFORMATION,

PLEASE CONTACT

CHARRIS YADIGAROGLOU

CY@MBANDF.COM

ARNAUD LÉGERET

ARL@MBANDF.COM

MB&F SA, RUE VERDAINE 11,

CH-1204 GENÈVE, SWITZERLAND

PHONE: +41 22 508 10 38

FOLDER CONTENT

[Click here to access the press release in other languages](#)

+ all product images (low and high resolution).

THE MACHINE



HM3 FROG X
FACE BLUE



HM3 FROG X
FACE PURPLE



HM3 FROG X
FACE TURQUOISE



HM3 FROG X
NIGHT BLUE



HM3 FROG X
PROFILE BLUE



HM3 FROG X
FRONT BLUE



HM3 FROG X
FRONT PURPLE



HM3 FROG X
FRONT TURQUOISE



HM3 FROG X
NIGHT TURQUOISE



HM3 FROG X
BLUE



HM3 FROG X
PURPLE



HM3 FROG X
TURQUOISE



HM3 FROG X
NIGHT PURPLE



HM3 FROG X
MOVEMENT PURPLE



HM3 FROG X
COLLECTION WHITE BACKGROUND



HM3 FROG X
COLLECTION BLACK BACKGROUND

LIFESTYLE



HM3 FROG X
WRISTSHOT BLUE



HM3 FROG X
LIFESTYLE PURPLE



HM3 FROG X
WRISTSHOT BLUE



HM3 FROG X
LIFESTYLE TURQUOISE



HM3 FROG X
LIFESTYLE BLUE

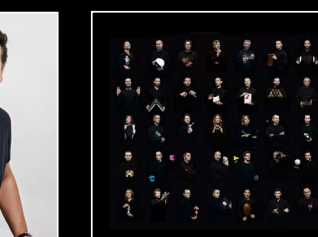


HM3 FROG X
WRISTSHOT BLUE

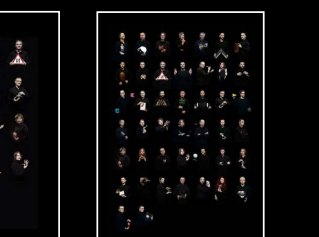
FRIENDS



MAXIMILIAN BÜSSER
PORTRAIT



MAXIMILIAN BÜSSER
PORTRAIT



HM3 FROG X
FRIENDS LANDSCAPE



HM3 FROG X
FRIENDS PORTRAIT

FILM



FOLLOW US ON SOCIAL MEDIA @MBANDF



WECHAT