

10 YEARS FOR THE CHRONOMETRE A RESONANCE

Celebration of the emblematic F.P.Journe Timekeeper

2010 commemorates the 10 year Anniversary of the renowned Chronomètre à Résonance with a new edition now featuring a 24 hour indicator.

An emblematic timepiece that will significantly mark the research on precision made by master watchmaker François-Paul Journe. This unique watch represents one of the wildest challenges ever in the field of the mechanical watch! Utilising the natural resonance phenomenon, this exceptional mechanism revolutionized the classic standards of watch-making by offering an unequalled precision for a wristwatch.

The first applications of the resonance phenomenon in horological science date back to the 18th century, by French master watchmaker Antide Janvier (†1840). He observed the negative effects of these waves on clocks and then conducted his own research on ways of using this phenomenon in the operating of regulators.

In 2004, F.P.Journe introduced a second version for the Chronomètre à Résonance with the introduction of the first movement ever made in 18K rose gold, a specification that would from then on apply to all the precision chronometers of the brand.

2010 – F.P.Journe offers a new face to the renowned Chronomètre a Résonance, acclaimed by collectors and professionals of the brand worldwide. In an ultimate quest for precision, the dial at 9h now offers a time indication of 24 hours, defining precisely the hours of day and those of night. The dial at 3h in silver guilloche indicates the local time but can also be used for the same time zone.

Hardly a small modification for the subtle 18K rose gold mechanism with its two perfectly synchronised beating mechanical hearts that are revealed through a sapphire crystal case-back: there is now a different gear transmission making the hands turn in 24 hours instead of 12 hours.

The new Chronomètre a Résonance will be, as its predecessor was, available in two versions: one with a platinum case and white gold dial and the other all in red gold. The two dials in silver guilloche indicating the hours, minutes and seconds are secured on the 18K gold dial by polished steel rings, a patent by F.P.Journe.

The New Chronomètre a Résonance is imbued with a profoundly poetic depth, and remains, 10 years later, the most precise mechanical watch of contemporary watch making.

What is actually the resonance phenomenon?

Two frequencies which harmonise!

Any animate body transmits a vibration to its environment. When another body picks up this vibration, it absorbs its energy and begins to vibrate at the same frequency. The first is called the "exciter" and the second the "resonator". This physical phenomenon known as "resonance" is an integral part of our daily life and yet we hardly even notice it.

When we are looking for a program on the radio, it crackles until the chosen wavelengths meet those of the transmitter: only then do they harmonise to begin resonating together!

Resonance concerns all fields including those related to mechanical engineering, music and human beings, as confirmed by musician Keith Jarrett in our first catalogue: "This is particularly obvious in music, since lutes and sitars, for example, have strings whose only reason for existence is to vibrate by resonance; the musician never touches them, despite their proximity to the strings that are plucked."

Research on resonance

Two centuries later, François-Paul Journe took up the challenge with a first creation in the form of a pocket-watch, which did not yet perform according to his expectations. It would take fifteen more years of work for the watchmaker to gain the maturity and the experience to meet the demands of actual wear on the wrist and provide chronometric performance driven to extremes to present as a world premiere, the very first resonance wristwatch, pushing the limits of chronometry to its extremes.

Each of the two balances alternately serves as exciter and resonator. When the two balances are in motion, they enter into sympathy due to the effect of resonance and begin naturally beating in opposition. The two balances thus rest against each other, giving more inertia to their movement.

Nonetheless, this harmony is possible only if the difference in frequency between them does not exceed five seconds per day of cumulated difference in six situations. Adjusting them is an extremely delicate task.

Whereas an external disturbing movement affects the running of a traditional mechanical watch, this same disturbance, in the case of a resonance watches, produces an effect that accelerates one of the balances as much as it slows the other down. Little by little, the two balances come back towards each other to find their point of harmony, thus eliminating the disturbance. This innovative chronometer offers a level of precision that is unequalled in the field of the mechanical watch.

CHRONOMETRE A RESONANCE

Technical Specifications

Movement:	Calibre 1499.3 Manual winding Movement in 18K rose gold 36 jewels
Dimensions:	Overall diameter: 32.60mm Casing-up diameter: 32.00mm Overall height: 4.20mm Height of winding stem: 2.59mm Diameter of stem thread: S1.00mm Diameter of reset to zero stem : S1.20mm
Characteristics:	2 x linear escapements, 15 teeth 2 x balances with 4 inertia weight 2 x flat microflamed Anachron balance Spring 2 x mobile stud carriers 2 x free sprung balance springs 2x spring laser pinned to Nivatronic collets Pinned GE studs 2 position winding crown Reset to zero button for seconds Frequency: 21,600v/h (3Hz) Balance: Inertia 10.10 mg/cm ² Angle of lift: 52° Amplitude: 0h dial up: > 320° 24h dial up: > 270°
Main feature:	Manual winding, 27 turns of crown Time adjustment at 12h for left dial by winding crown on position 2 in one direction, and in the opposite direction for right dial Reset both seconds to zero by pulling button at 4h00
Power Reserve:	40 hours + 2
Indications:	Double display: Left dial –digital- indicating 24 hours Right dial –analogic- indicating 12 hours 2 small seconds at 6h00 Power reserve at 11h00
Finishing:	High quality Partial circular graining on baseplate Screw heads polished and bevelled, with chamfered slots Pegs with polished rounded ends
Case:	Platinum or 18K red gold Diameter: 38.00 or 40.00mm Total height: 9.00mm
Number of Parts:	Movement without dial 299 Cased up with strap 336