



SYLOXI HAIRSPRING

A HIGH-PERFORMANCE SILICON HEART

The Syloxi hairspring is the optimal silicon hairspring according to Rolex. The fruit of many years of research and carrying several patents, this particularly innovative hairspring makes full use of the potential of silicon technology and brings an exceptional level of precision and reliability. It completes Rolex's range of high-performance hairsprings, alongside the blue Parachrom hairspring.



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In a mechanical watch, the oscillator is the guardian of time. Comprising a balance wheel and a hairspring, it determines the precision of the watch by the regularity of its oscillations. Ensuring the oscillator's regularity is one of watchmaking's great challenges. It can only be achieved by minimizing the effects of environmental disturbances that affect the oscillator's performance, notably temperature variations – which cause materials to expand or contract – magnetic fields and shocks.

OPTIMAL PERFORMANCE

Particularly innovative, Rolex's Syloxi hairspring incorporates the best of silicon technology. It counters the shortcomings of ferromagnetic hairsprings and therefore significantly improves the regularity of the oscillator (balance wheel-hairspring assembly) and consequently the precision of the watch. It is insensitive to magnetic fields, offers great stability when exposed to temperature variations and remains up to 10 times more accurate than a traditional hairspring in the face of the thousands of knocks to which a wristwatch is subjected on a daily basis.

INNOVATIONS AND HIGH-TECHNOLOGY MANUFACTURING

The Syloxi hairspring's performance is based on innovative and novel solutions. Starting with the material of which it is made, a silicon and silicon oxide composite – hence the name Syloxi – whose thermo-compensating and paramagnetic properties allow the Syloxi hairspring to maintain its high precision when subjected to temperature fluctuations and magnetic interference.

Rolex has also developed and patented a geometry that guarantees the regularity of the movement in any position. The variable thickness and spacing of the coils along the whole length of the Syloxi hairspring allow it to automatically compensate for the effects of gravity.

Rolex also refined, and patented, the manner of fixing the hairspring to the balance staff and the balance bridge, which enhances its centring and flatness. A flexible collet, also patented, allows it to be attached to the balance staff without the need for glue, so that the inner end of the hairspring remains perfectly perpendicular, flat and is self-centring. The Syloxi hairspring terminates in a more rigid, reinforced arc-shaped part that allows a two-point fixation to the balance bridge. These fixation points are located at opposite sides of the balance staff ensuring that the hairspring is perfectly centred, perfectly flat and free of any residual mechanical stress in its active zone. This type of fixation also allowed Rolex to optimize the beat adjustment using a Paraflex shock absorber that features a fluting for this purpose, and which is also the signature of calibres equipped with the Syloxi hairspring.



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The Syloxi hairspring is entirely manufactured in-house by Rolex via a high-precision manufacturing process known as deep reactive ion etching (DRIE).

CALIBRES 2236 AND 2232

The Syloxi hairspring was introduced in 2014 on calibre 2236, the first of a new generation of Rolex movements. It was subsequently fitted in calibre 2232 (without date function), unveiled in 2020. These two calibres are, additionally, equipped with a paramagnetic nickel-phosphorus escape wheel, which enhances their resistance to magnetic fields, and with a mainspring, developed in-house, that provides a more constant supply of energy to the movement and has increased the power reserve to approximately 55 hours.

HIGH-PERFORMANCE ROLEX HAIRSPRINGS

With the Syloxi hairspring in silicon, Rolex has a second high-performance hairspring, in addition to the blue Parachrom hairspring. Made from an alloy of niobium, zirconium and oxygen, the Parachrom hairspring delivers excellent chronometric performance thanks to its resistance to temperature variations, magnetic fields and shocks. The Syloxi hairspring offers the same level of performance, thanks to Rolex's mastery of a complementary technology.