



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.



SYLOXI HAIRSPRING

In a mechanical watch, the oscillator is the guardian of time. Comprising a hairspring and a balance wheel, this regulating organ 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 interference, gravity and shocks.

OPTIMAL PERFORMANCE

Particularly innovative, Rolex's Syloxi hairspring incorporates the best of silicon technology. It counters the shortcomings of traditional 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 interference, 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 a patented geometry that optimizes the isochronism of the hairspring and the regularity of the oscillations of the balance wheel-hairspring assembly. The variable pitch and thickness of the coils, optimized along the whole length of the hairspring, ensures constant development in all positions, compensating 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 flatness and concentricity. A flexible collet 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 crescent-shaped part that allows a two-point fixation to the traversing 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



SYLOXI HAIRSPRING

features a fluting for this purpose, and which is also the signature of calibres equipped with the Syloxi hairspring.

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

CALIBRE 2236

The Syloxi hairspring was introduced in 2014 on calibre 2236, the first of a new generation of Rolex movements. This calibre is, in addition, equipped with a paramagnetic nickel-phosphorus escape wheel enhancing its resistance to magnetic fields, and with a mainspring, developed in-house, that increases the power reserve to approximately 55 hours, providing the movement with a more constant supply of energy.

HIGH-PERFORMANCE ROLEX HAIRSPRINGS

With the Syloxi hairspring in silicon, Rolex has a second high-performance hairspring in addition to the blue paramagnetic Parachrom hairspring launched in 2000. Made in an exclusive alloy of niobium, zirconium and oxygen, the blue Parachrom hairspring today equips the majority of the brand's large-diameter watches. It offers excellent chronometric performance thanks to its resistance to temperature variations, magnetic fields and shocks. With the Syloxi hairspring, Rolex offers the same level of performance on its small- and medium-diameter watches, thanks to its mastery of a complementary technology.