



PARAFLEX SHOCK ABSORBER

ENHANCED ROBUSTNESS AND RELIABILITY

To increase the resistance of its movements to shocks – particularly if dropped – Rolex developed and patented an exclusive and highly efficient shock absorber: Paraflex.



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THE PIVOT, A VITAL COMPONENT

The balance staff is one of the parts of a watch movement that takes the most strain from shocks. The balance wheel is a moving component with great inertia that helps guarantee the chronometric performance of the watch. The pivots of the balance staff must be as fine as possible – around seven-hundredths of a millimetre in diameter, the thickness of a human hair – so as to minimize friction. For this reason, they are extremely vulnerable.

MAJOR WATCHMAKING CHALLENGE

Finding a way to effectively protect the pivots on a wristwatch became a major challenge. As it is worn on the wrist, the watch is exposed to all kinds of stresses. The invention of a shock absorber in the early 1930s was a significant step forward. Rolex subsequently fitted its movements with shock absorbers on the balance and the escapement wheels.

Although perfected over the years, this tiny shock absorber has its limits. The spring may be insufficiently resistant and can open in the event of a sudden shock, with immediate consequences for the wearer: the movement simply stops.

RESISTANCE ENHANCED BY 50 PER CENT

In an effort to optimize the reliability of the shock absorber, Rolex redesigned its essential functions. Rolex engineers, working hand in hand with its watchmakers, developed a system that would increase its resistance by 50 per cent while preserving the chronometric properties of the balance wheel. Special attention was given to the spring, a key element that was completely redesigned. Its innovative geometry allows the shock absorber to withstand extremely demanding conditions.

EASIER ASSEMBLY AND MAINTENANCE

In addition to increased shock resistance, the optimized shock absorber introduced by Rolex in 2005 and named Paraflex, presents many other advantages. Its innovative design ensures that the spring remains firmly positioned on the support, under any conditions of wear, with no risk of deformation. The Paraflex also allows watchmakers to determine the amount of lubricant that needs to be applied for pivoting. Furthermore, thanks to its perfectly symmetrical construction, it can be positioned in any direction on installation, without affecting performance.

These parameters not only make manual assembly easier but also facilitate maintenance by after-sales service.



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AN EXCLUSIVE SIGNATURE

The invention of the Paraflex shock absorber by Rolex drew on the great progress made in dynamic 3D modelling. Extensive shock testing and laboratory measurements were necessary to validate this new system's improved performance.

The new geometry of its spring makes the Paraflex shock absorber an exclusive signature component of Rolex movements.