



CERACHROM BEZEL INSERT AND CERACHROM BEZEL

SHINE, STRENGTH AND LEGIBILITY

The bezel is one of the most visible parts of a watch and one of the most exposed to shocks, scratches and ultraviolet rays. With the robustness and durability of its watches in mind, Rolex developed and patented the Cerachrom bezel insert and the Cerachrom bezel. Professional models in the Oyster Perpetual collection that are equipped with one of these high-tech, particularly durable ceramic components retain all of their beauty and functionality in even the most extreme conditions.



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PATENTED HIGH-TECHNOLOGY COMPONENTS

Developed and patented by Rolex, the monobloc Cerachrom bezel insert and monobloc Cerachrom bezel are made of extremely hard, virtually scratchproof ceramics whose colours are unaffected by ultraviolet rays. In addition, thanks to its chemical composition, the high-tech ceramic is inert and cannot corrode. It also gives these components an exceptional, long-lasting lustre when polished.

FROM MONOBLOC BEZEL INSERT TO MONOBLOC BEZEL

The monobloc Cerachrom bezel insert was the first high-technology ceramic component developed by Rolex. Introduced in 2005 on the GMT-Master II, today it also appears on the Yacht-Master and Yacht-Master II, as well as on the divers' watches: the Submariner, Submariner Date, Sea-Dweller and Rolex Deepsea. Depending on the watch, the ceramic bezel insert is black, blue or green.

Rolex then designed a bezel entirely made from ceramic for the Cosmograph Daytona: the monobloc Cerachrom bezel, launched in black in 2011. Extremely robust and with peerless aesthetics, the bezel holds the crystal firmly in place, ensures waterproofness and offers an exceptionally legible tachymetric scale. In 2013, Rolex released a second Cerachrom bezel: this time in chestnut brown ceramic, it is used exclusively on the Cosmograph Daytona in 950 platinum, which was unveiled the same year.

EXCLUSIVE TWO-COLOUR CERAMIC

In 2013, Rolex introduced its first two-colour, single-piece ceramic bezel insert – a world first. Blue on one half and black on the other, it was launched on a GMT-Master II in Oystersteel. In 2014, Rolex released the two-colour Cerachrom insert in red and blue on an 18 ct white gold version. The latest innovation: the two-colour insert in brown and black ceramic, featuring on two GMT-Master II models – one in 18 ct Everose gold, and the other in an Everose Rolesor version (combining Oystersteel and Everose gold) – unveiled in 2018.

IN-HOUSE MANUFACTURE

The manufacturing of Cerachrom bezel inserts and Cerachrom bezels is entirely carried out in-house by Rolex. The brand has installed exclusive equipment to perfectly master the manufacturing process and thereby guarantee the quality of these components.

The basic ceramic material is a very fine zirconium dioxide or aluminium oxide powder, whose particles are less than one micron (one-thousandth of a millimetre) in diameter. It is mixed with organic binding agents that allow it to be moulded and pigments that will give the final colour.



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The raw material, which at this point has very low resistance, is shaped by high-pressure moulding to create a blank. This step gives the piece its shape and moulds the numerals, graduations and inscriptions, whether they are indented or raised. Once the blank is removed from the mould, it undergoes a heat treatment to remove the binding agents. It is then fired at a very high temperature – up to 1,600° C – for more than 24 hours in a process known as sintering, during which the ceramic acquires its definitive hardness and mechanical resistance. Its rigidity after the sintering is akin to that of steel, but its hardness is much greater. During firing and sintering, the piece contracts by approximately 25 to 30 per cent and acquires its final colour or colours. Final precision machining gives each piece its definitive shape and size for assembly. As the material has now acquired its characteristic hardness, this operation requires the use of diamond tools.

THE CHALLENGE OF TWO-COLOUR CERACHROM BEZELS

The innovative process developed by Rolex to obtain the unique two-colour Cerachrom bezel inserts for the GMT-Master II consists in changing the colour of the ceramic on one half of the insert. On the blue and black bezel insert, the blue is changed to black, but on the red and blue version, half of the red bezel is transformed into blue. On the brown and black bezel insert, the brown turns black. The change of colour is achieved by impregnating half of the insert with an aqueous solution containing various chemical compounds. The solution is added before the sintering process. In the course of sintering, the ceramic densifies and the added compounds react with the basic elements of the Cerachrom insert, which alters the initial colour on one half of the piece.

The two-colour Cerachrom bezel inserts obtained present a clear demarcation between the two coloured areas, and as they are manufactured in a single piece, they acquire mechanical resistance properties that meet Rolex's exacting quality and reliability requirements.

GOLD OR PLATINUM DEPOSITION

For optimum legibility, the numerals, graduations and inscriptions are moulded in the ceramic and then coated with a thin layer of metal – yellow or pink gold or platinum, depending on the watch material – approximately one micron thick, using a PVD (Physical Vapour Deposition) process. A final polishing brings out the ceramic's shine and removes the metal from the rest of the bezel's surface. The precious metal coating on the numerals, graduations and inscriptions remains, making them clearly visible.



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QUALITY AND LONGEVITY

Throughout the production process, the components undergo systematic quality controls to check the precision of their geometry, their mechanical properties and their colour or colours. Once they have passed all the tests, the Cerachrom bezel inserts or Cerachrom bezels are ready to flawlessly fulfil their purpose for many years.