



*Angular Momentum
of Switzerland*

The Making of a Timepiece



After cutting the contours on the Schäublin lathe, the 1.4435 NcU Staybrite piece is fixed on the Aciere F3 rotating holder



With a milling hjead of the diameter of the radius between case and corns, the left and right side of the case is milled out



Then the space between the corns is roughly milled with a 2.00 mm drill



With a 1.50 mm drill, the „contre corn“ section is finished



On the Schäublin lathe, the inner section is turned



On the working bench, the watch case's outside is finished and satin brushed



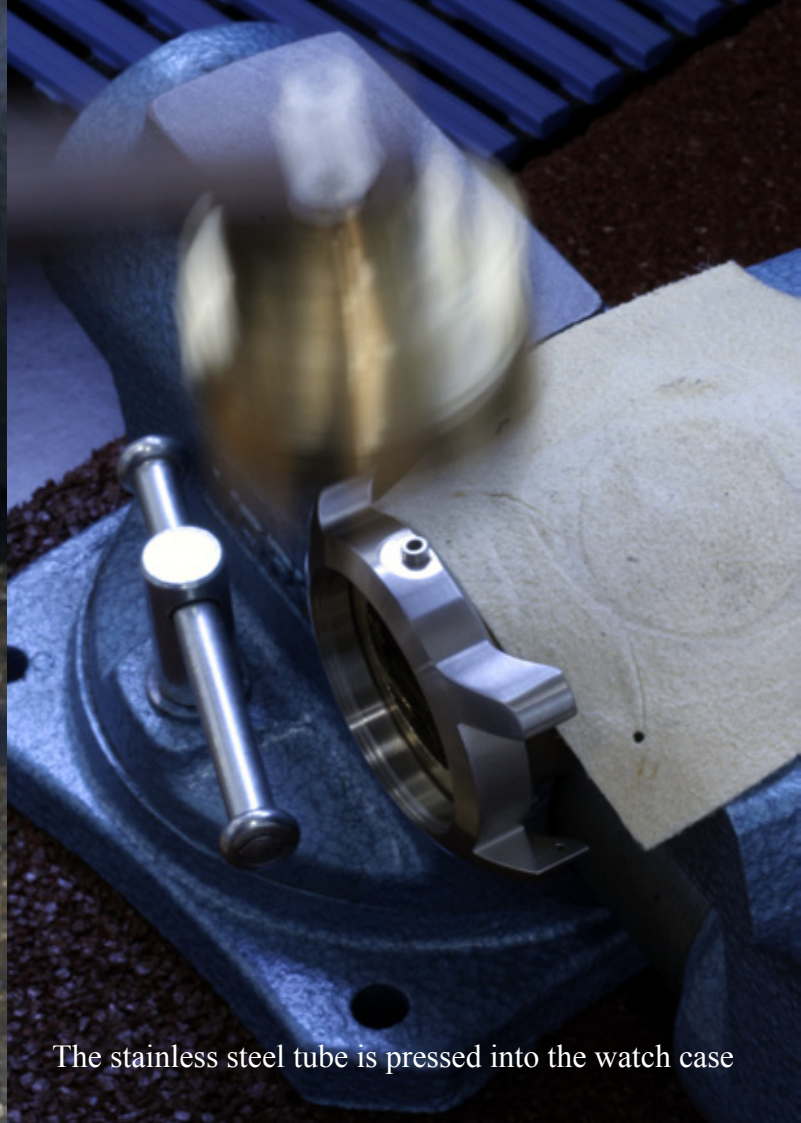
On the working bench, the watch case's outside is finished and satin brushed



The bezel is finished and satin brushed on the lathe with sandpaper



Finish case



The stainless steel tube is pressed into the watch case



The sapphire crystal is pressed into the watch case with a hytrel o-ring



The finished watch case, back and crown



The dial is milled on the Pantograph milling machine



After milling the brass dial, its finished by hand on the working bench, meaning the surface is prepared for „Champlevé“ enameling



After the piece is heavily gold plated, a thin layer of pure white enamel is applied. (Enamel does not hold on brass and has therefore to be gold plated).



Then the dial is fired in the furnace

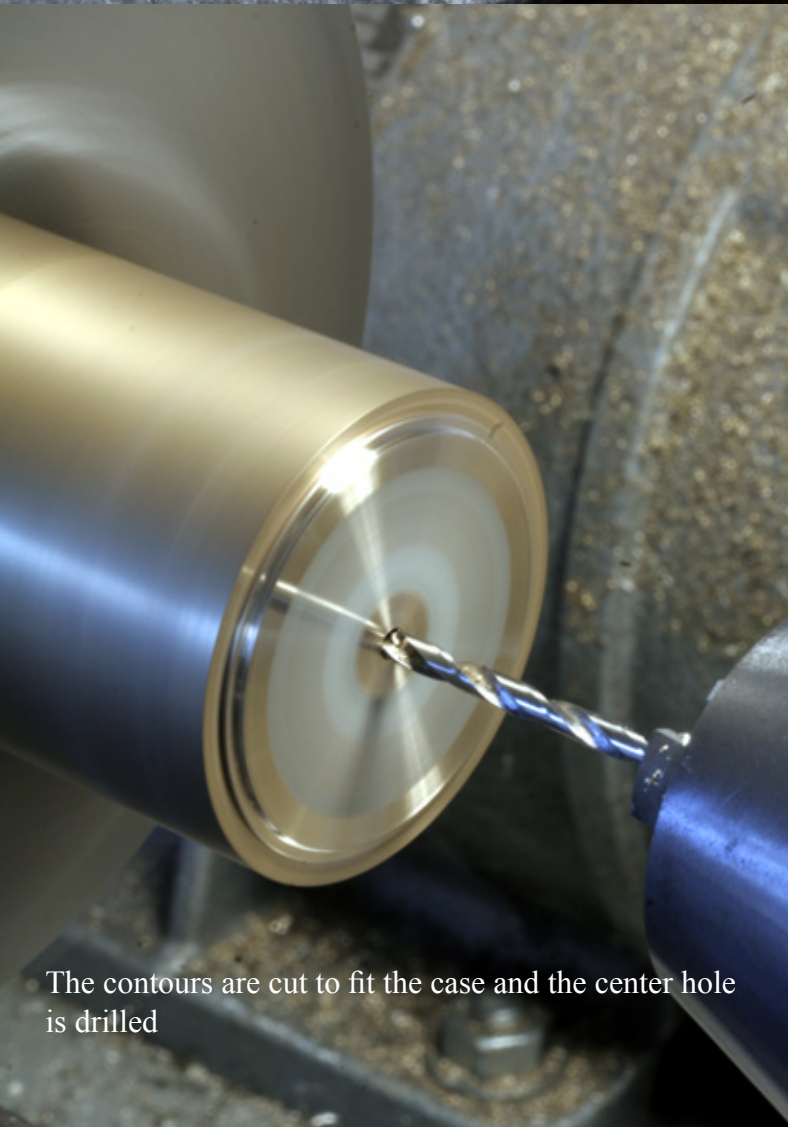
Hörsi Utig KG
Type U 16,
220V, 1000 W



In a second step the „Email Lumineuse“ is fired upon the white enamel



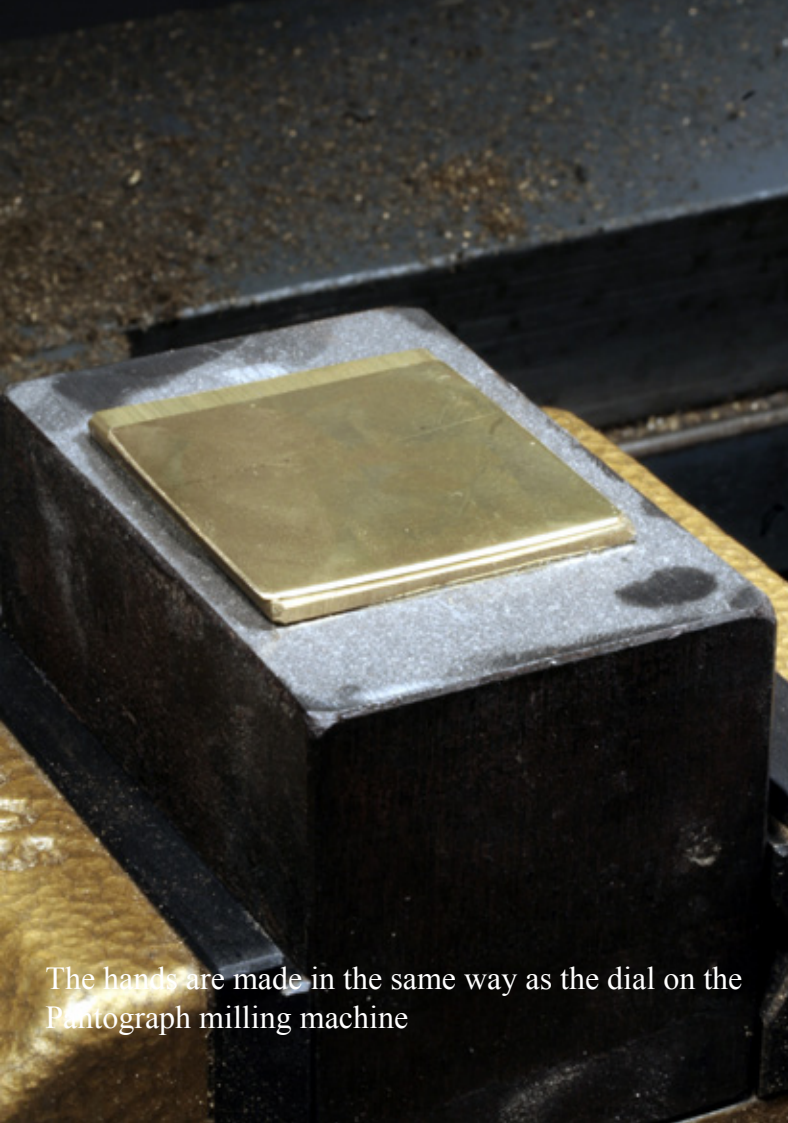
The dial is glued on a brass holder and fixed on the lathe and ground with different stones up to 1000 grains



The contours are cut to fit the case and the center hole is drilled



In a final step, the entire dial is plated, first with Palladium first and Rhodium afterwards.



The hands are made in the same way as the dial on the Pantograph milling machine



The Pantograph is a reduction milling machine, invented by Leschot in 1840, used by Vacheron Constantin to produce high precision inter-changable movement parts.



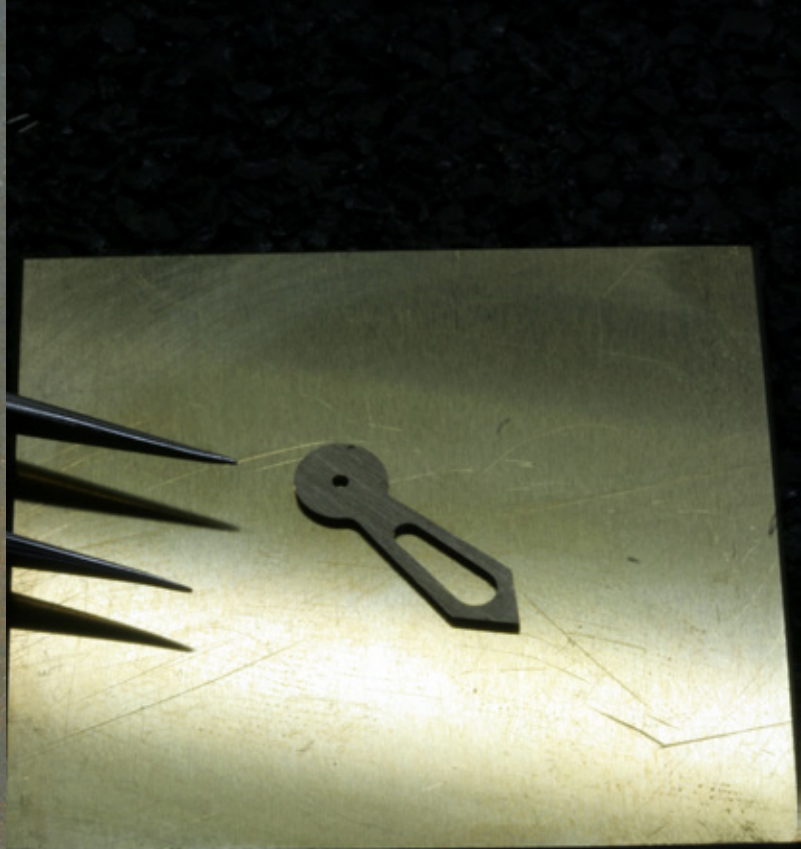
The function is that a 10 times larger model of the „hand“ is fixed on the table, which the „stylo“ follows and thus the cutter, via the pantograph, reproduces the ‚copy‘ at a ratio which the pantograph arms have been set.



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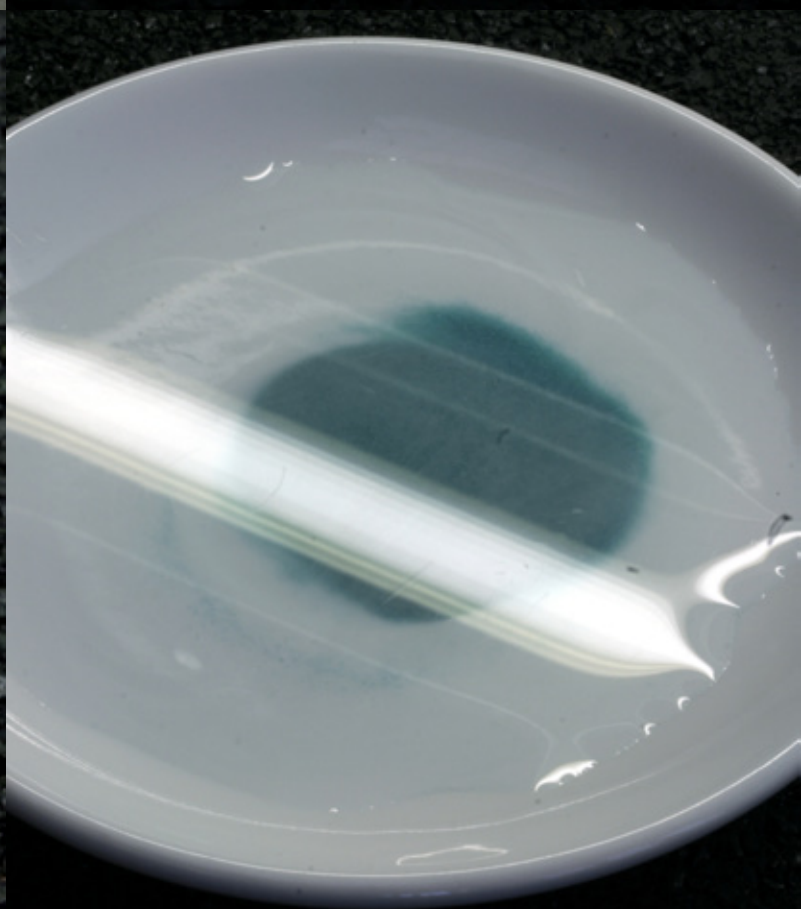
Then the rough hand is flattened on sand paper and gold plated



The hand is ready for enameling and glued on a brass plate



The enamel is a fine glass powder, in this case mixed with luminous sulfate „Email Lumineuse“



In a first step the powder is cleaned in distilled water to remove dust and particles who are not glass



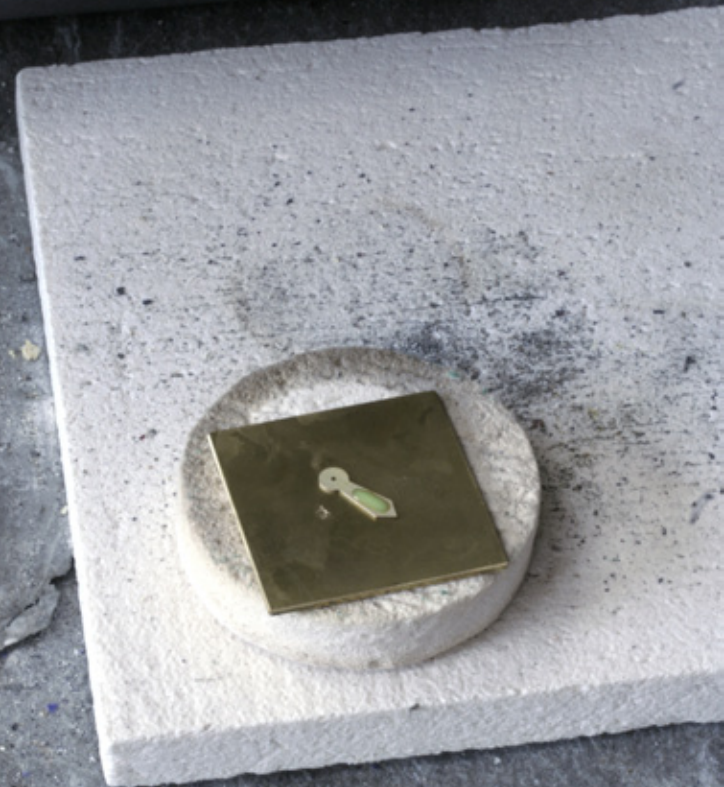
The excess water is removed



And pure glass and sulfate remain



With a stick or tooth pick, some of the moisty enamel is set into the center hole



After enamel has properly dried, its fired in the furnace



The hand has been etched and brushed in Acit sulphure



Then the hand and enamel is gounit



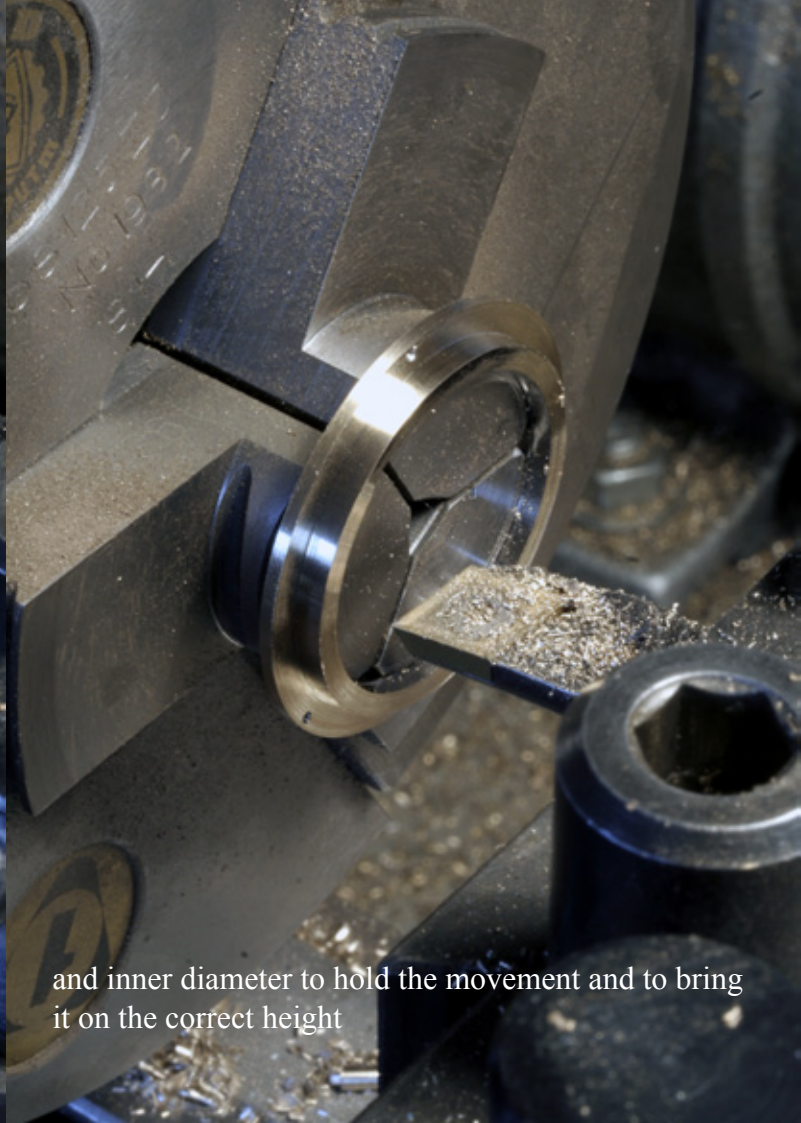
In a next step the edges of the hands are polished with a steel needle



In a final step the hand is plated with Palladium and Rhodium to meet the appearance of the dial



The movement holder is made on the lathe, outer diameter to be set into the watch case tightly



and inner diameter to hold the movement and to bring it on the correct height



The front side of the movement holder is polished



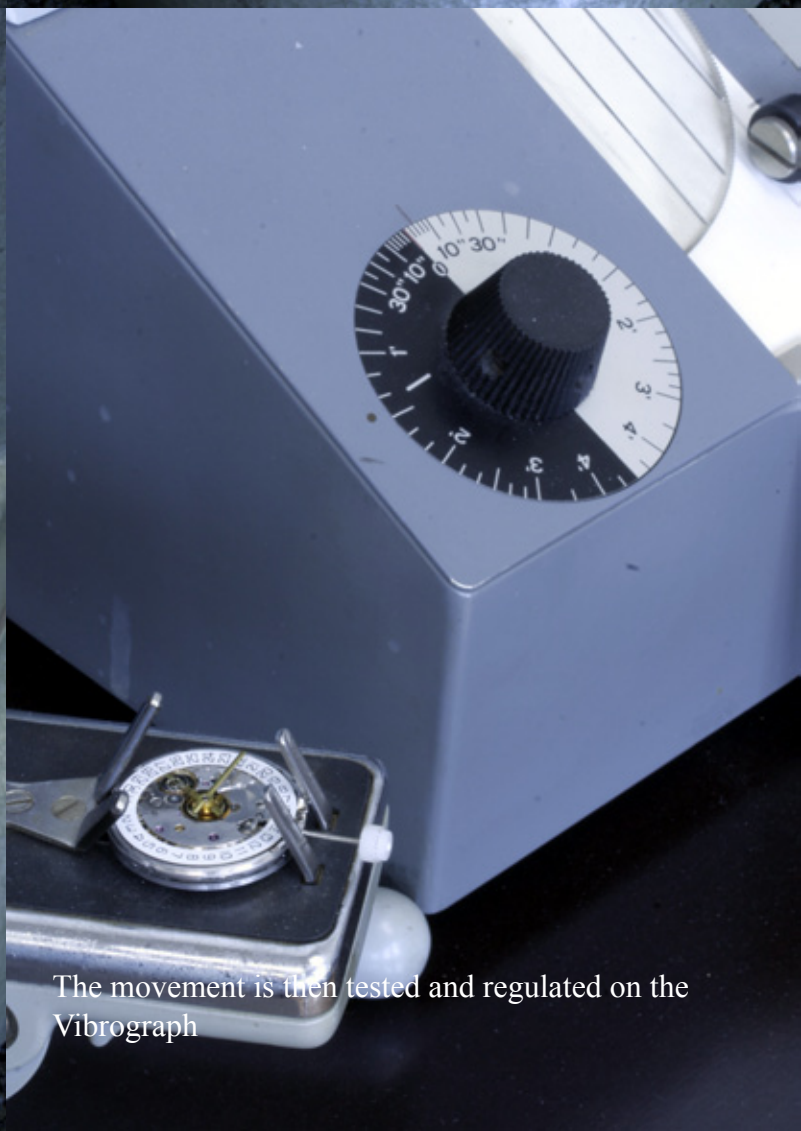
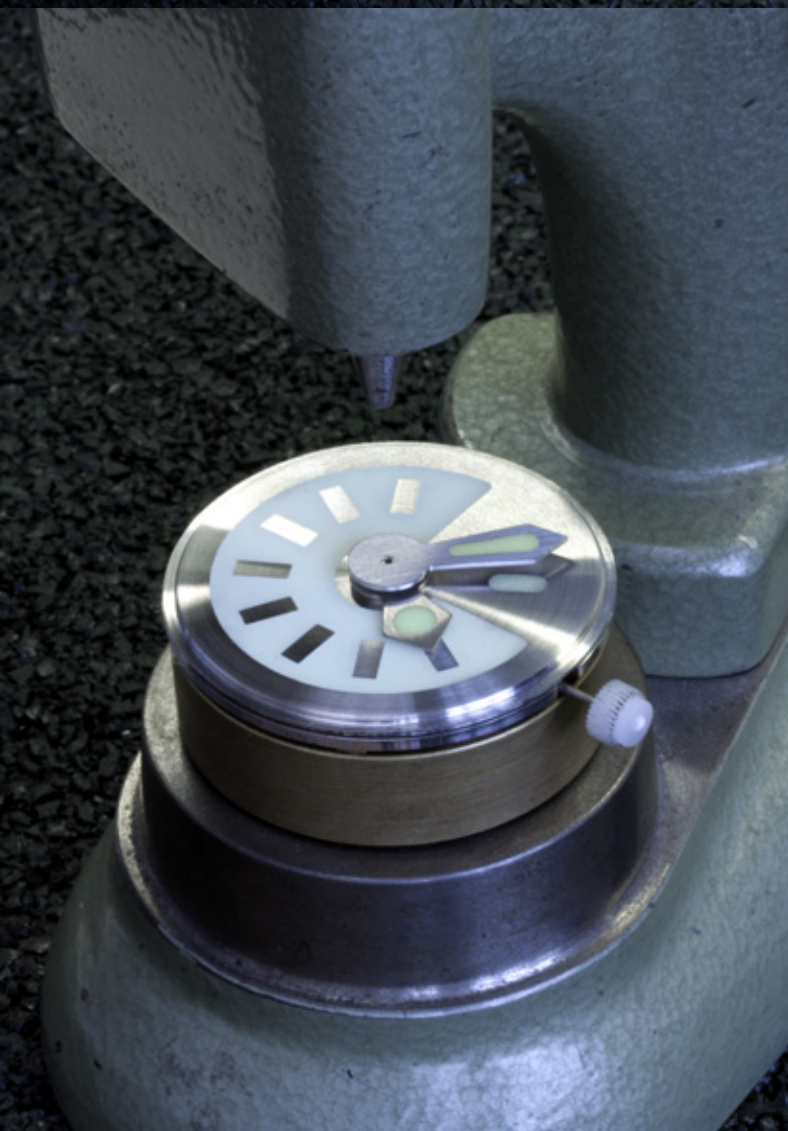
The back side of the movement holder is decorated with „perlage“ pattern, then the movement holder is plated with Palladium and Rhodium.



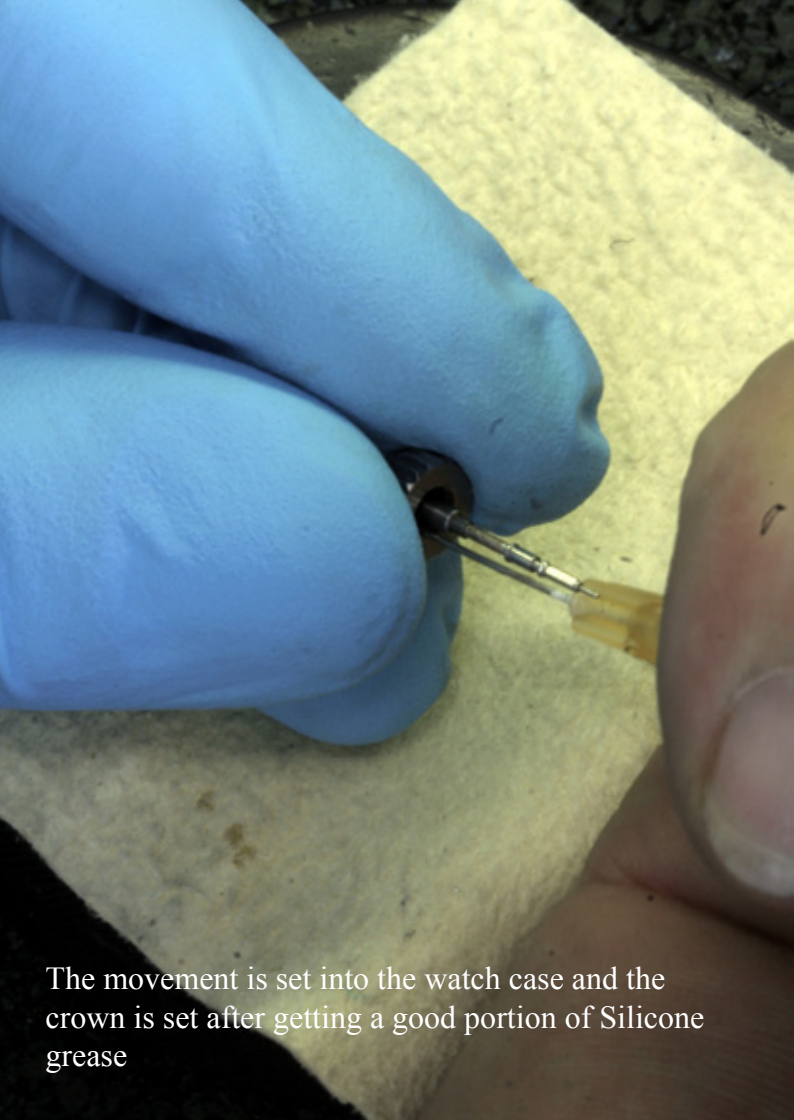
The date - because its not used on this tiomepiece - is taken away and stored. Higher hand fittings are set because the dial is 1.00 mm thick, while normal dials are 0.40 mm



Then the two hands are carefully set



The movement is then tested and regulated on the Vibrograph



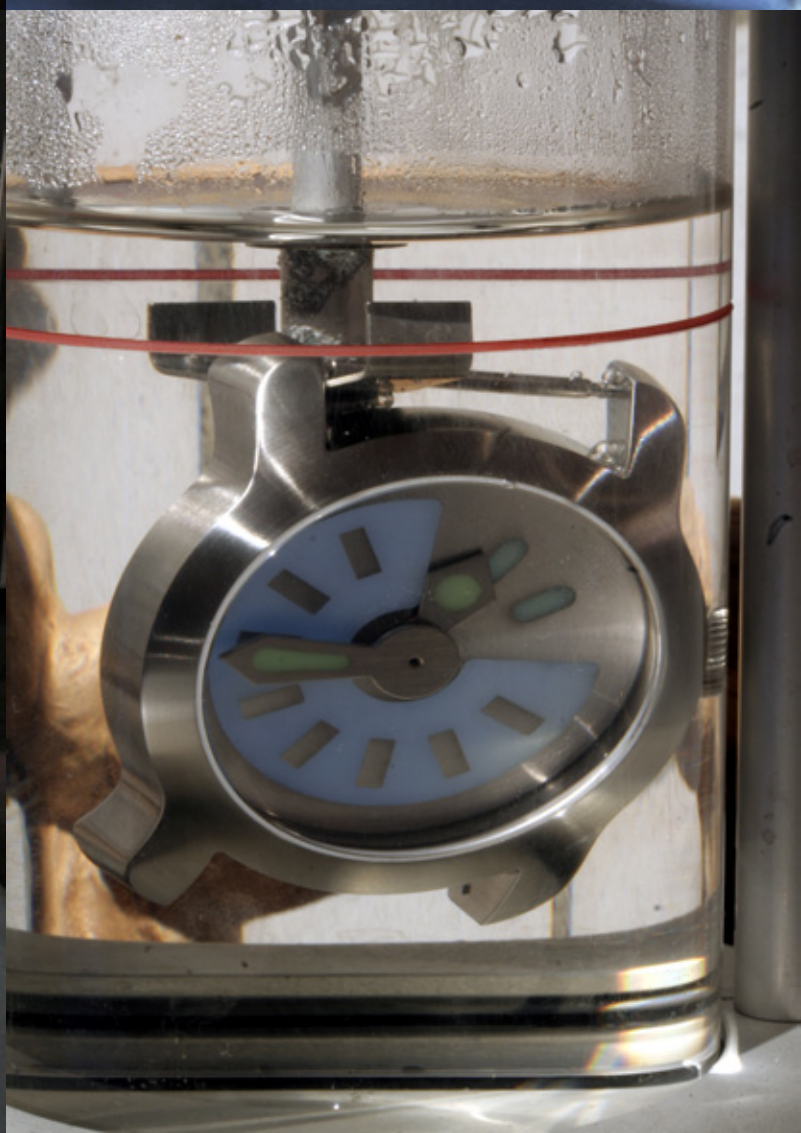
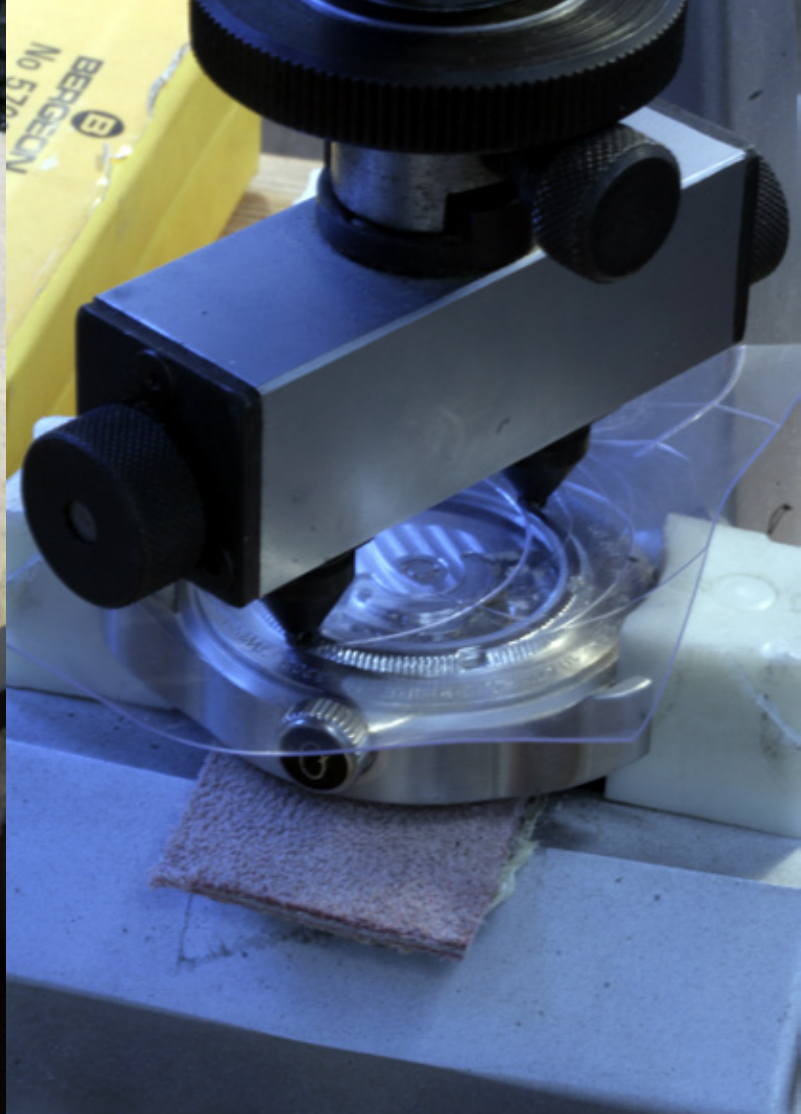
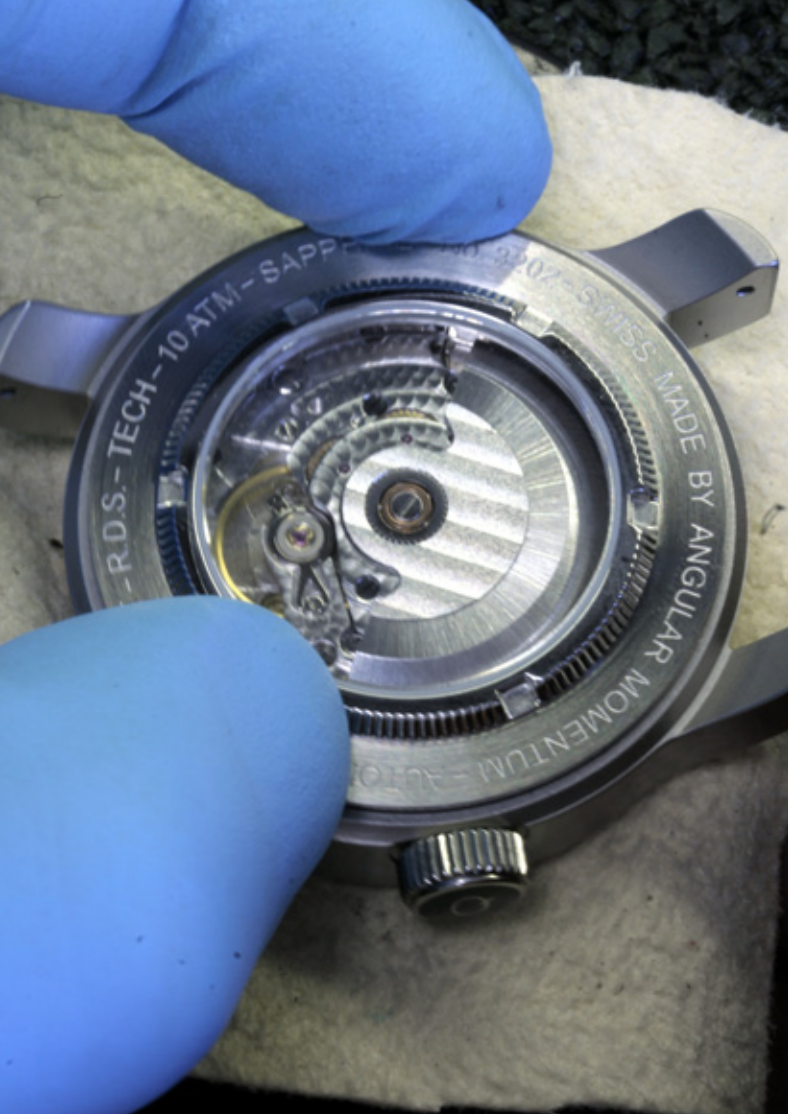
The movement is set into the watch case and the crown is set after getting a good portion of Silicone grease



The O-ring is placed after being rubbed with Silicone grease



Also the tread of the back is slightly greased before screwed on



After the watch has been closed it is tested for water resistance in a Bergeon tester, filled with distilled water



After the water resistance test the timepiece is carefully cleaned with a special cleaning solution



