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Time for precision

The pulse of watch enthusiasts beats faster at the sight of the Meister S Chronoscope Platinum Edition 160 from the watch manufacturer JUNGHANS. After all, only twelve people are allowed to call this noble timepiece their own. The unique edition engraving, including the limitation number, was engraved by an ultrashort pulse laser from TRUMPF.

The suspense in the TRUMPF Laser Applications Center in Ditzingen is almost tangible. In a departure from the usual daily routine, an unusual service for a long-standing customer is on the agenda today. An employee of the traditional watch manufacturer JUNGHANS has just arrived with a valuable cargo. In his briefcase, he is transporting twelve watch backs made of polished PT950 platinum - the most valuable precious metal in the world. At TRUMPF, they are to be given a special edition engraving and limitation numbers from one to twelve with the help of a high-precision laser, and thus receive their unmistakable face.

For Ralf Motz, the sales representative responsible for JUNGHANS, and Matthias Widmer, the machine operator, engraving the Meister S Chronoscope was an exciting affair.

The case, pusher and screw-down crown of the Meister S Chronoscope Platinum Edition 160 are made of polished platinum PT950 - the most precious metal in the world. The edition engraving and the limitation number on the watch back and the hour counter of the stopwatch make each of the only twelve timepieces available unique.

Twelve hours - twelve watches

The watch backs belong to the limited Meister S Chronoscope Platinum Editon 160 of the Schramberg watch manufacturer JUNGHANS. The company is launching the sports watch to mark its 160th anniversary. Matthias Stotz, Managing Director at JUNGHANS, explains, "This is our third limited edition 12, and with a retail price of 16,000 euros, it's a luxury product that collectors and watch lovers worldwide are eagerly awaiting."

May I see the back, please?

Clearly, everything about this timepiece must be perfect down to the smallest detail. The case, pushers and screw-down crown of the Meister S Chronoscope are made of highly polished platinum. The hour counter of the stopwatch, integrated into the cool silvery shimmering dial, bears the limitation number, as does the watch back. "Each watch is absolutely unique," says Stotz with enthusiasm. "The 12 numbering on the dial and the edition engraving with limitation number on the watch back make it unique. To ensure that this unique selling point is also perfect, we turned to our contact Ralf Motz at TRUMPF."

The edition engraving for the Meister S Chronoscope Platinum Edition 160 was created in a TruMark Station 7000 equipped with the new generation TruMicro Mark Series 2000 ultrashort pulse laser.

For the engraving of the platinum watch backs, TRUMPF machine operator Matthias Widmer very carefully approached the desired engraving depth of 17 micrometers.

In the new generation of TruMicro Mark Series 2000 ultrashort pulse lasers, the pulse duration can be variably set between 400 femtoseconds and 20 picoseconds. This enables fast, burr-free engraving of up to 100 micrometers deep in all precious metals that can be reproduced at any time with consistent quality.

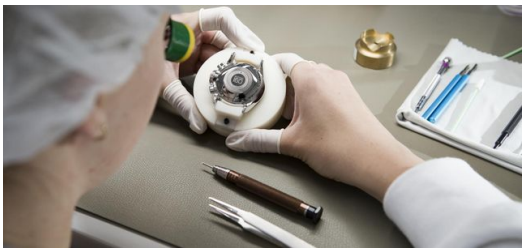
Neighborhood assistance

JUNGHANS has been working with two marking lasers from TRUMPF for more than 20 years. But when Matthias Stotz heard about the new generation of ultrashort pulse lasers from the TruMicro Mark Series 2000, it was clear to him that this laser alone should apply the engraving to his anniversary edition: "Platinum is difficult to process and highly sensitive. There must be no errors in the engraving. Every tiny flaw and every irregularity would be immediately visible on the shiny surface and would be irreparable. Our marking lasers do not offer the high pulse frequency necessary for this. The lasers in the TruMicro Mark Series 2000 do."

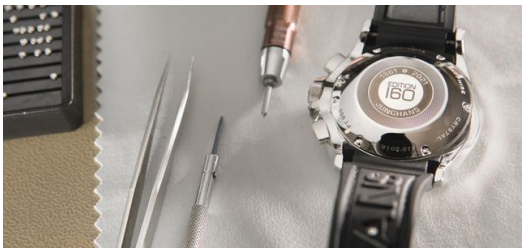
A cautious approach

Back to Ditzingen. Everything is ready. Even for Matthias Widmer, machine operator at TRUMPF, it is exciting to process a metal as valuable as platinum - that doesn't happen every day. In itself, engraving is no big deal for him. He knows the ultrashort pulse lasers of the TruMicro Mark Series 2000 inside out. But for engraving the platinum watch backs, he first has to set all the laser parameters precisely. So Widmer very carefully approaches the engraving depth of 17 micrometers desired by the JUNGHANS designers when engraving the first back. Step by step, he increases the pulse rate. The laser light digs into the metal micrometer by micrometer. When the deep engraving is complete, Widmer changes the processing parameters and uses a lower pulse rate to create a fine melt film within the engraving. This brightens up the typeface, which initially appears dark. Then finally, after about two hours, the edition engraving shines on the first watch back. A critical look through the magnifying glass reveals a flawless engraving in cool white. And now everything becomes easier and faster, as Widmer enthusiastically recounts: "Once the parameters have been set correctly, our laser system produces the same perfect result again and again, regardless of whether we're engraving 12 or 1,200 bases. And the laser works fast. Switching between processing parameters such as pulse duration takes less than 800 milliseconds."

The laser's speed, reproducibility and flexibility also impress Matthias Stotz: "These are the prerequisites for responding quickly to individual customer requests. That's why I can well imagine that we will use the advantages of the new laser from TRUMPF in the future, because after all, time doesn't stand still, even with new technologies."



Nothing was left to chance during the engraving operation. The JUNGHANS employees carefully scrutinize each engraved watch back.



"A watch is simply not finished without the engraving," explains Matthias Stotz. The anniversary engraving is unmistakable with its fine structures, clean lettering and individual limitation number.

Matthias Stotz, a trained watchmaker, has been Managing Director of the JUNGHANS watch factory since 2008.

Wearing emotions on your wrist

A few days later, the engraved watch backs are united with the other parts of the watches in the JUNGHANS assembly. Piece by piece, experienced gloved hands assemble the timepiece before it goes to the customer with a certificate and packed in a fine leather box. Matthias Stotz is proud: "A watch, and such an exclusive one at that, always triggers emotions, regardless of whether it is worn on your wrist or kept in a safe. The design and the engraving make it unique and that simply feels good."

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