

STRUB
SWISS TRIBOLOGY



Neat Cutting and Grinding Oils

QPLC - Technology

What is QPLC-Technology?



QPLC stands for: **Q**uality, **P**erformance, **L**ongevity and **C**ost/Benefit

Quality thanks to strict controls and strict limits in the QM department as well as the consistent implementation of risk management (HACCP)

Performance thanks to the close cooperation with long-standing customers and suppliers, with whom we have optimized the development of the cutting oils and grinding oils together.

Longevity thanks to a synergistic adjustment of the additives which extend the service life of the cutting oil.

Cost / benefit thanks to attractive pricing.



Which products are based on QPLC-Technology?



STRUB Vulcan Futura CF 2900, 2915, 2922, 2932

The STRUB Vulcan Futura CF series is used for all operations, including thread cutting, reaming, grinding of difficult to machine alloys such as stainless steel, implant steel, titanium and aluminum. It is also suitable for non-ferrous metals (copper corrosion test ASTM, D 130 / IP 154 1b).

STRUB Vulcan Futura CF 4000, 4015, 4022, 4032

The STRUB Vulcan Futura CF 4000, 4015, 4022, 4032 series is used for almost all machining operations on high-alloy steels, steels and cast alloys.

STRUB Vulcan Grind CF 5, 10, 14

STRUB Vulcan Grind Series is suitable for round-plan-pendulum-shape-profile grinding of special medical alloys as well as for carbide, HSS, rapid steels with grinding wheels made of diamond, ceramics and CBN components.

QPLC-Technology in the industry



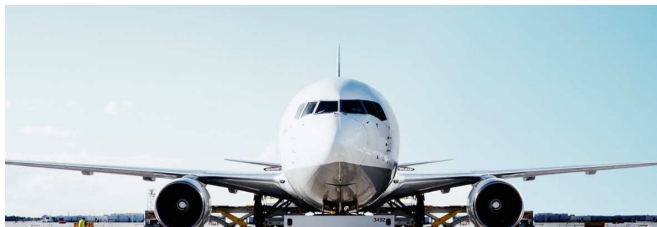
Watches



Automotive



Medical Technology



Aircraft

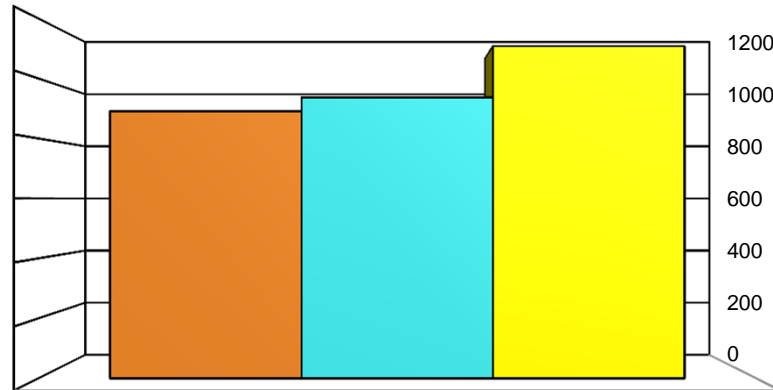


Electronical Components

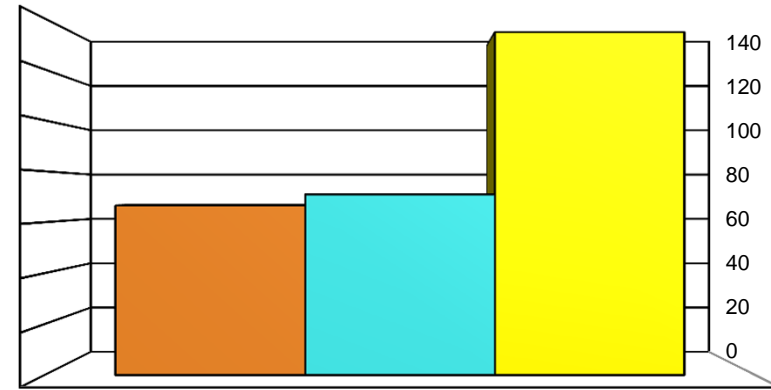
Comparison Reichert



Performance: On stainless steel (100Cr6) the STRUB Vulcan Futura CF 2915 achieves a 15% bearing pressure (load carrying capacity). On steel for implants (X2CrNiMo 18-15-3) the bearing pressure with the STRUB Vulcan Futura CF 2915 is even higher (> 45%).



Zylinder: Stahl 100Cr6
Ring: Stahl 100Cr6



Zylinder: Stahl X2CrNiMo 18-15-3
Ring: Stahl 100Cr6

■ Mitbewerberprodukt 1 ■ Mitbewerberprodukt 2 ■ STRUB Vulcan Futura CF 2915

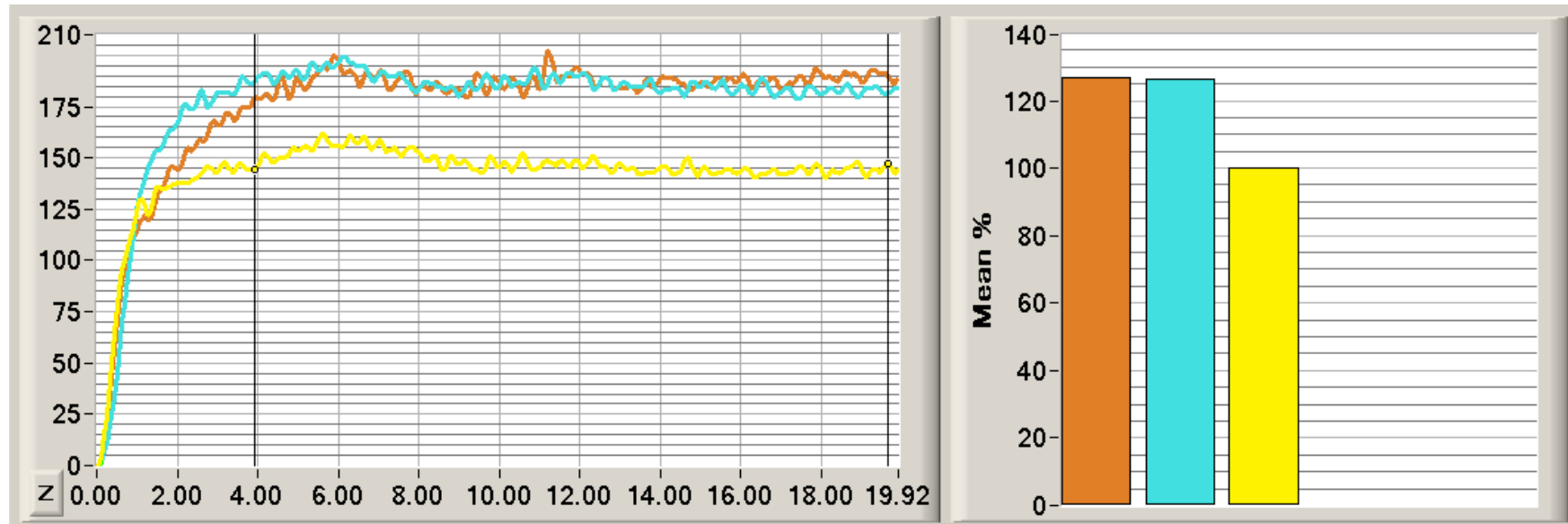
■ Mitbewerberprodukt 1 ■ Mitbewerberprodukt 2 ■ STRUB Vulcan Futura CF 2915

		Zylinder: Stahl 100Cr6 Ring: Stahl 100Cr6	Zylinder: Stahl X2CrNiMo 18-15-3 Ring: Stahl 100Cr6
Mitbewerberprodukt 1	Ellipse area in mm ²	3.37	45.07
Mitbewerberprodukt 2	Ellipse area in mm ²	3.2	42.34
STRUB Vulcan Futura CF 2915	Ellipse area in mm ²	2.71	22.29
Mitbewerberprodukt 1	spez. Flächenpressung in kg/cm ² bei p=1500g	890.8	66.6
Mitbewerberprodukt 2	spez. Flächenpressung in kg/cm ² bei p=1500g	936.7	70.9
STRUB Vulcan Futura CF 2915	spez. Flächenpressung in kg/cm ² bei p=1500g	1107.7	134.6

Comparison Tapping Torque Test (TTT)

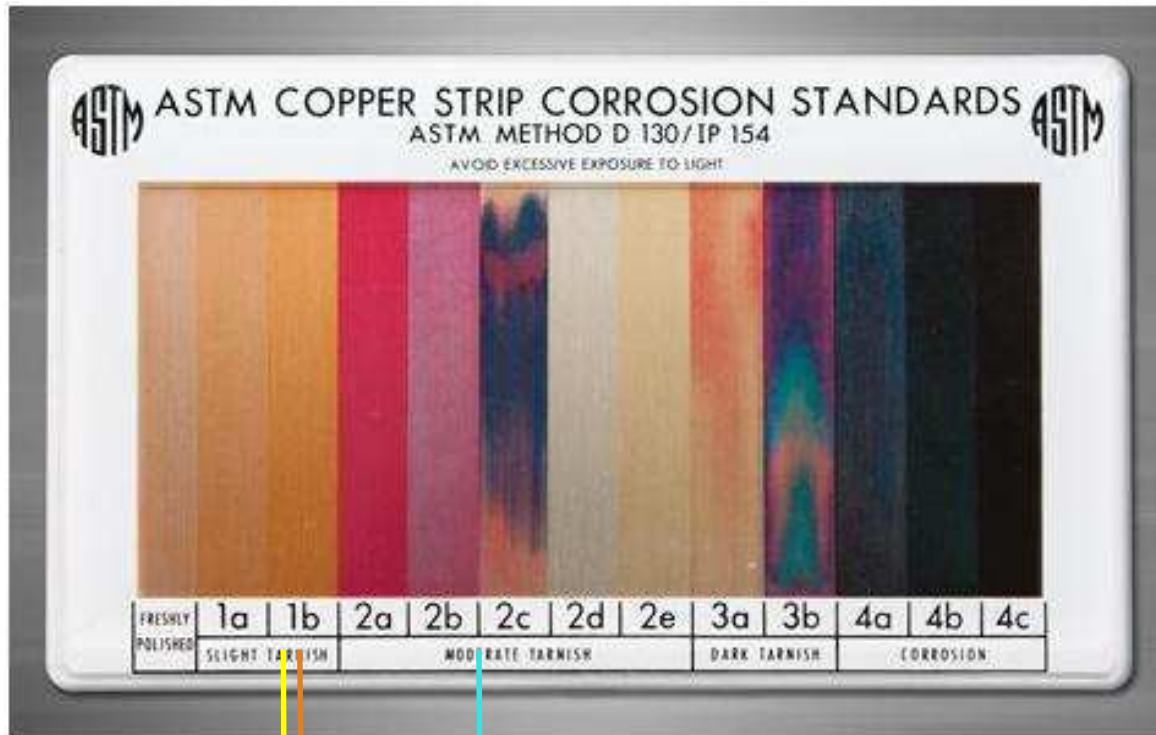


Performance: The synergistic combination of additives in the STRUB Vulcan Futura CF 2915 results in a higher lubrication performance as demonstrated by the 25% smaller torque in the TTT, as well as about 10% less temperature development on the tool during the tapping (M4F) of stainless steel (X6CrNiMoTi17-12- 2) at 800 rpm.

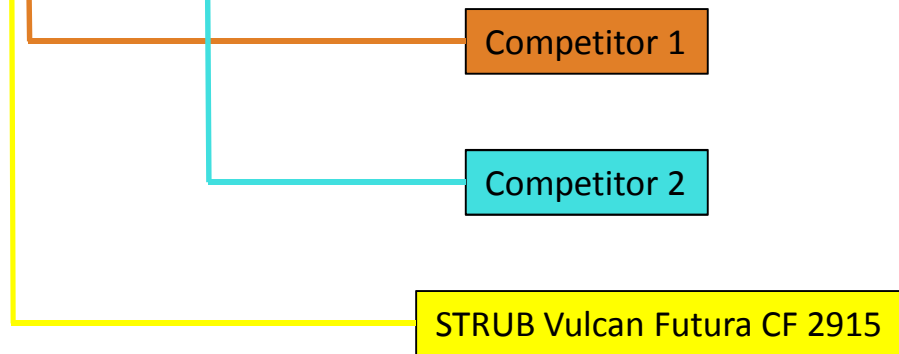


	ΔT [°C]	\vec{M}	\vec{M} [%]
Competitor 1	20.04	187.3	126.8
Competitor 2	20.25	186.7	126.4
Vulcan Futura CF 2915	18.28	147.7	100

Copper Corrosion Test in comparison



Test: Duration: 3h; T=100 °C



Customer experience with grinding in medicinal technique



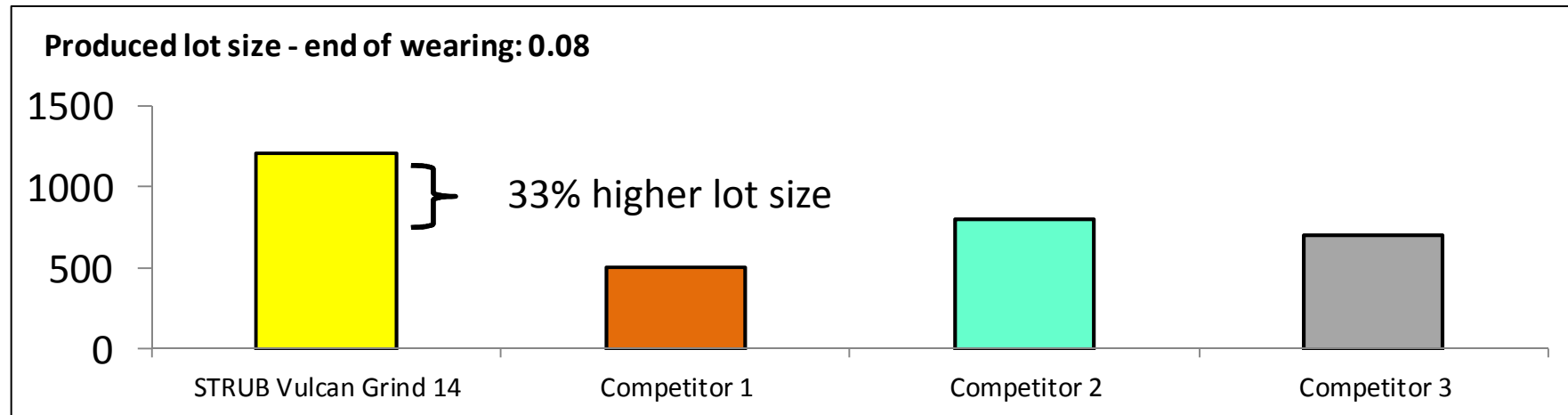
Customer Initial situation:

Grinding of medical tool steel (TiNi alloys).

Solution:

Use of the new technology of our grinding and cutting oils. STRUB Vulcan Grind CF 14, is a low-viscosity, light, chlorine-free, highly additivated, adhesive grinding and cutting oil.

Result:



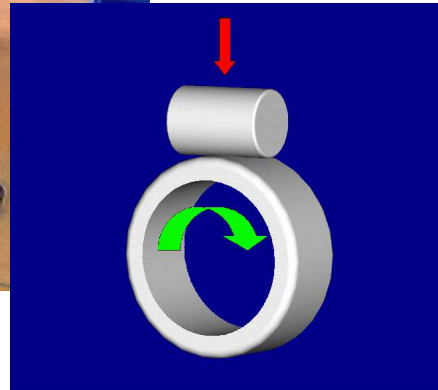
Thank you



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The wear resistance and the load bearing capacity of lubricants are determined using the friction wear scales according to Reichert. The wearing calotte, which is formed over the course of 100 m of sliding travel on the cylinder, is measured. The purpose is to determine the wear-reducing properties of lubricants.



The Tapping Torque test is specialized in torque-controlled thread making. In order to efficiently measure and compare the performance of lubricants, parameters are required which evaluate the lubricating performance, lubricity, cooling, friction, and tool load or wear.