PATENT PENDING

POLARIS BASIC LW / POLARIS PLUS LW

Electroplated CBN grinding wheel with lightweight core
for external cylindrical grinding

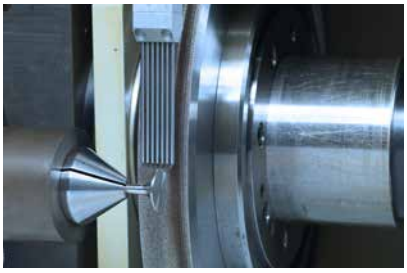
Premium grinding tools since 1919
www.tyrolit.com

TYROLIT

POLARIS BASIC LW / POLARIS PLUS LW

With the POLARIS LW product line, TYROLIT is a pioneer and technology leader in the area of lightweight electroplated grinding tools. Through targeted material reduction, the wheel weight has been significantly reduced. The stock removal rate at the core is not random, but is calculated using a computational FEM analysis (Finite Element Method). This means that deformations and potential performance losses can be excluded. Through use of the lightweight POLARIS LW version, the maintenance intervals at the grinding machines can be reduced and handling significantly simplified for personnel in production.

Application
External cylindrical grinding of engine valves



+ **Weight optimisation:** Through targeted material reduction at the core, weight reductions of up to 50 percent can be achieved. POLARIS LW tools determine less wear on spindles and bearings than comparable reference tools. Moreover, significant advantages arise during transport and fitting of the tools. A patent has been applied for with regard to this innovation.

+ **Replating-compatible:** POLARIS LW tools can be replated problem-free. The slightly higher purchase price is quickly compensated through the replating of existing lightweight cores.

+ **Maximum tool life:** POLARIS LW tools provide the customary top performance of the proven POLARIS product lines. Thanks to the weight reduction, tool life increases are often possible as a side-effect, e.g. due to a reduction in vibration.

+ **Computational FEM simulation:** Each lightweight version is optimally designed for the requirements at hand with the aid of a computational FEM simulation. This allows maximum weight reductions to be achieved without sacrificing on performance.

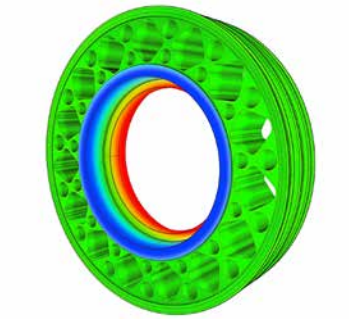
Example application

Flute plunge cut grinding of gear shafts
POLARIS PLUS LW 500 x 80 x 203.2 mm

Weight reduction of 47%

TYROLIT 30 kg

COMPETITION 56 kg



FEM simulation of a grinding wheel

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