



MEDICAL TECHNOLOGY · KNEE PROSTHESES

GRINDING AND DRESSING TOOLS FOR ARTIFICIAL KNEE PROSTHESES

Diamond and CBN solutions for rough grinding, profiling, and finishing of femoral and tibial components.

EHWA Europe GmbH · As of 08.01.2020



AGENDA

Overview

Grinding Solution with CBN Wheels

Specification, dimensions, and grinding parameters

Electroplated and BSL Wheels

Bond types compared directly

Core Body Designs

Steel + Al, Al sintered ring + CFRP, Al

Competitive Advantage and Customer Benefits

Quality, supply security, service

PRODUCT 01

Grinding Solution with CBN Wheels

GRINDING WHEEL AND WORKPIECE

EHWA Specification	B181L100
Wheel Dimensions	VB-14F1, 250D-120T-15.04U-17+3mm-51H
Material	Cr + Mo + Cobalt (HRc 25–35)
Workpiece	Artificial knee joint

GRINDING PARAMETERS

Machine	Wheel Speed	Feed Rate
Haas Multigrind	90 m/s	500 mm/min



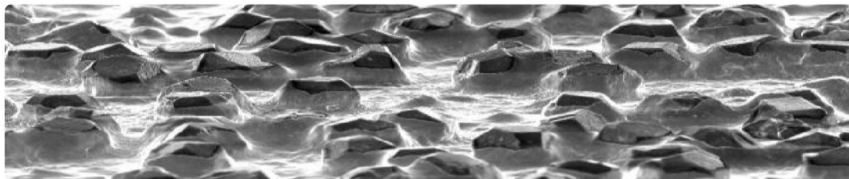
CBN grinding wheel VB-14F1 on CFRP core body

Electroplated and BSL Wheels

Workpiece: Artificial knee joint
Machines: Haas, Schuette, Hoffmann

Electroplated

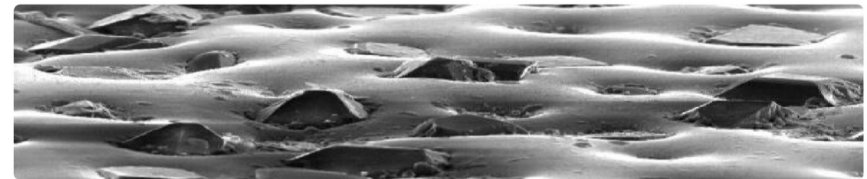
EP = Electroplated



- Set with CBN crystal, electroplated coating
- High stock removal rate
- Tool life strongly depends on grit size

Sintered

BSL = Brazed Single Layer



- Very friable grain, diamond and CBN possible
- Very high stock removal rate possible
- Suitable for rough grinding and profiling
- Drawback: tool life

DESIGNS

Core Body Designs

Workpiece: Artificial knee joint

Machine: Haas



CBN + Steel + Al

Entry-Level Price

- Competitive solution, especially cost-effective



CBN + Al Sintered Ring + CFRP

Dimensionally and Vibration Stable

- Stable against vibration
- No dimensional change at high rotational speed, no thermal expansion
- 30% lighter than the Al + steel combination
- No deformation from coolant
- Price-performance between CFRP and Al



CBN + Al

Light and Well-Balanced

- Competitive solution, especially cost-effective
- Good performance up to max. 80 m/s
- Good balancing

SUMMARY

Competitive Advantage and Customer Benefits

01 Ensuring required product quality and safety

03 Safety stock / consignment stock by arrangement

05 Stable operational infrastructure

07 Information security — NDA

02 Competitive pricing and cost savings

04 Advanced technology and development capability

06 Environmental awareness — ISO 14001 and MSDS

08 Complete tool service — grinding, dressing, cutting



TOOL DESIGN BASED ON YOUR COMPONENT

Send us the material, machine, and drawing — you'll receive a specification recommendation for rough grinding, profiling, and finishing.

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