

Special Solution for

CAMSHAFT & CRANKSHAFT



EHWA

WHEEL CHECK LIST

General Information				
Customer			End_user	
Workpiece	Application Part	Material / Hardness	Roughness	Cylindricity
Machine	<input type="checkbox"/> NTC <input type="checkbox"/> TOYODA <input type="checkbox"/> LANDIS <input type="checkbox"/> MIKROSA <input type="checkbox"/> JUNKER <input type="checkbox"/> SCHAUDT <input type="checkbox"/> EMAG <input type="checkbox"/> ETC.			

Grinding Condition		Dressing Condition	
Wheel dimension		Dresser dimension	
Wheel speed (Vs) / Work speed (Vw)		Dressing amount	
Cycle Time (CT)		Dressing interval	
Stock removal (Wa)		Coolant	

EHWA WHEEL SPECIFICATION

VB-14A1

Wheel & Bond type

450D-45T-5X-22.5U

Wheel Dimension

B126L200VEW

Specification

■ BONDING STRENGTH

SOFT ← → HARD
J-K-L-M-N-P-Q-R-S-X

■ CONCENTRATION OF CBN GRITS

LOW ← → HIGH
100-125-150-180-200

■ SPECIFICATION

B126L200VEW

Grit type Bond name
Grit size Concentration
Bonding strength

■ VITRIFIED BOND FOR GRINDING CAMSHAFT & CRANKSHAFT

	Characteristics	Grinding performance	Life time	Surface roughness
VB	General	★★★★☆	★★★★☆	★★★★☆
VBT	High feedrate	★★★★★	★★★☆☆	★★★★☆
VE	Long tool life	★★★★☆	★★★★★	★★★★★



EHWA | WORLDWIDE COMPETENCE

As an innovator in technology, EHWA leads the global market by leading the way in applying the most advanced technology for manufacturing industrial diamond tools. For nearly half a century, EHWA has been dedicated to offering a variety of competent, tailor-made products and cost-effective solutions for customers with its global sales network and teams of experienced professionals. Technological solutions developed by EHWA have contributed to our customers in diverse industries around the globe, maximizing productivity and saving production cost. These global partners enjoy the benefits of EHWA's innovative products, engineered solutions and customer focused services.

EHWA VITRIFIED BONDED WHEELS

The Optimum Choice for Grinding Automotive Components

EHWA has supplied tailor-made wheels and services for camshafts and crankshafts around the world. We have developed specialized specifications for cam and crankshafts through years of experience and advanced technologies.

Benefits of EHWA vitrified CBN wheels for camshafts and crankshafts

- Longer tool life
- Excellent profile accuracy
- Highest productivity

Special Solution for

Camshaft grinding wheel



Benefits of EHWA vitrified CBN wheels for Camshafts

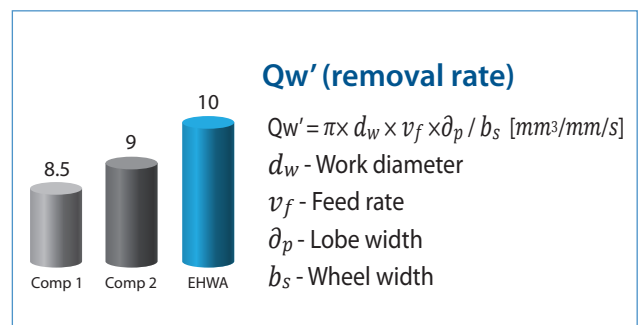
- High removal rate & low grinding force
- Excellent surface finish and profile stability
- Increased dressing intervals = longer wheel life and machine throughput



■ Increased material removal rates

EHWA vitrified wheels enable the removal rate to increase of up to 18% when grinding camshafts, compared to the competitor's.

- Work material – Chrome molybdenum steel (Sintering)
- EHWA wheel spec. – B126L200VEW
- v_s (Wheel speed) – 120m/s
- v_f (Feed rate) – 0.08mm/s
- ∂_e (Stock removal) – 0.8mm
- d_w (Work diameter) – 30-50mm CamLobe
- d_s (Wheel diameter) – 450mm



EHWA vitrified wheels guarantee the high removal rate by using the most qualified raw materials from reputable sources and developing the specification specialized for camshaft. The high removal rate realized by EHWA vitrified wheels leads to the highest productivity in customers.

■ Grinding condition

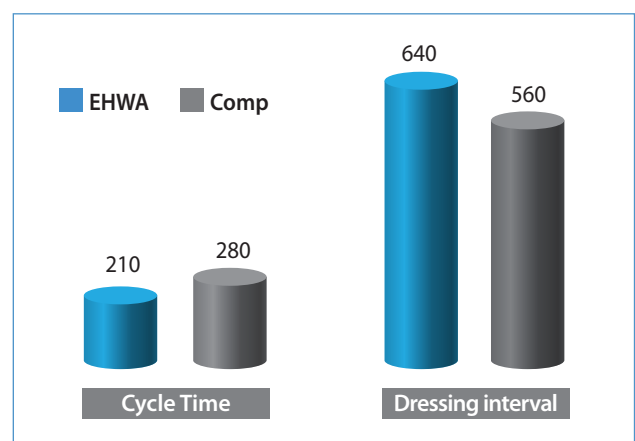
EHWA Wheel : 450D-20U-5X, B120L200VEW

- Machine : Landis CNC grinder
- Workpiece : Cam Lobe (X8)
- Material : Hardened steel (SCM440H, HRC 55~65, Forging)
- Coolant : Emulsion, KSS Quaker 6%
- Removal amount : 1.3mm
- Vs : 125m/s
- Dressing : 5 μ m x 3 Pass
- Dressing ratio : 0.45

■ Grinding result

Cycle time reduced by 33%, Dressing interval increased by 14%

- Max Removal rate : 11 $mm^3/mm/s$
- Cycle Time : 210 sec (1shaft)
- Dressing interval : 640 Lobes
- Rz : 2.4~2.8
- Lobe profile deviation : < 5 μ m



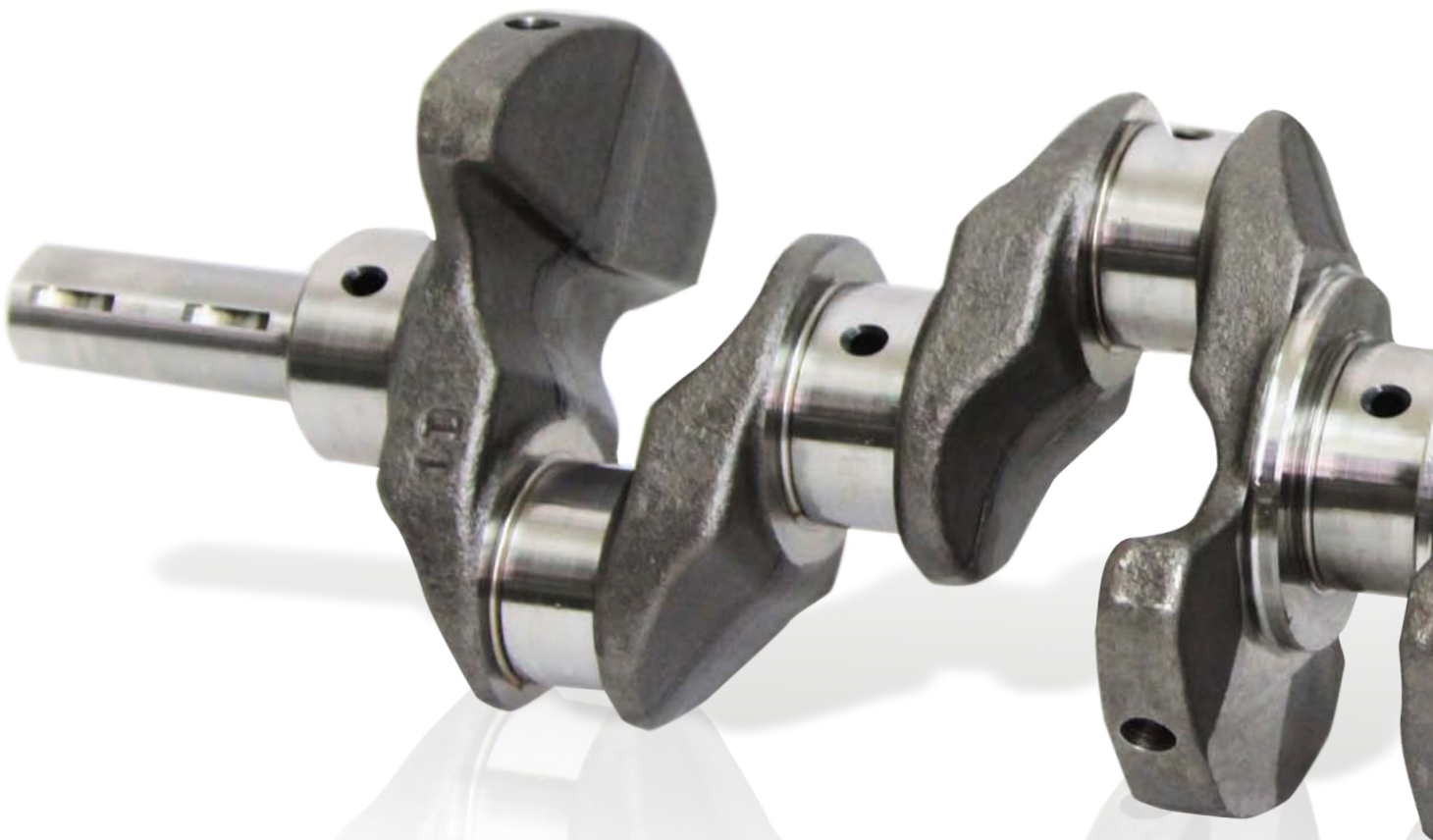
Special Solution for

Crankshaft grinding wheel



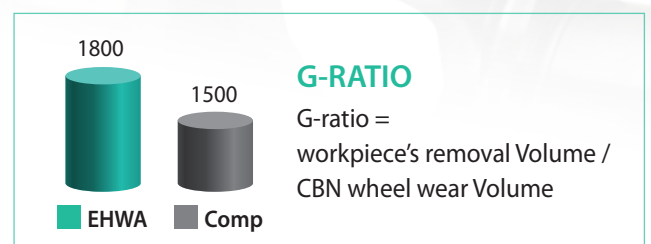
Benefits of EHWA vitrified CBN wheels for Crankshafts

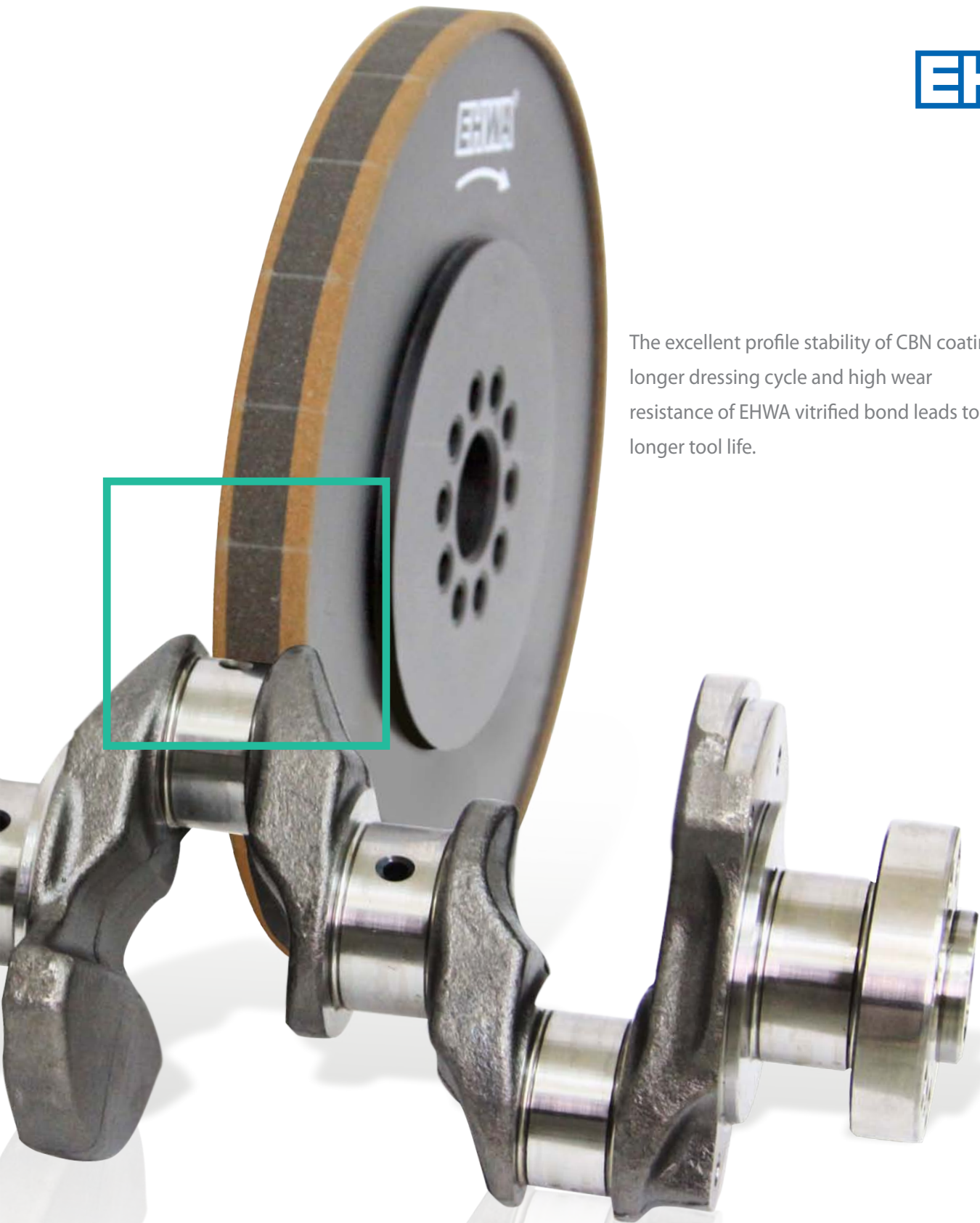
- Long dressing interval = Long tool life
- Consistent surface finish and high profile stability
- Reduced thermal and mechanical damage to workpiece



▪ Wheel life increased by 20%

- Work material - FCD (Casting)
- EHWA wheel spec – B151L200VEWN
- v_s (Wheel speed) – 80m/s
- v_f (Feed rate) – 0.05mm/s
- ∂_e (Stock removal)– 1.2mm
- d_w (Work diameter) – 60mm
- d_s (Wheel diameter) – 650mm





The excellent profile stability of CBN coating guarantees longer dressing cycle and high wear resistance of EHWA vitrified bond leads to longer tool life.

■ Grinding condition

EHWA Wheel : 550D-22.5U-5X, B151M185VEW

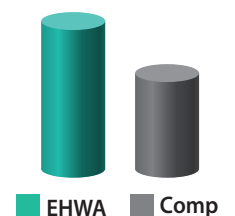
- Machine : NTC CNC grinder
- Workpiece : Journal (X5)
- Material : FCD 70C(Hv 269-328), (Casting)
- Removal amount : 1.5mm
- Vs : 80m/s
- Coolant : Emulsion
- Dressing : 3 μ m x 3 Pass
- Dressing ratio : 0.3

■ Grinding result

Dressing interval increased by 40%

- Max Removal rate : 12 $mm^3/mm/s$
- Cycle time : 92.5 sec (Grinding net time)
- Dressing interval : 350 Journals
- Rz : 2.5~2.8

Dressing interval





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