Vitrified CBN wheel
For camshaft

Vitrified CBN wheel
For crankshaft

EHWA industrial diamond tools are widely used in this industry, and play a key role in machining main automotive components including the cylinder head and the cylinder block.

Diamond tools for
Automotive

engine · turbochager

Nozzle bore grinding wheel
For fuel injection

Metal honing stones
For cylinder block and connecting rod

Rotary dresser
For turbocharger

Automotive | engine
Camshaft grinding

Vitrified CBN wheel
For camshaft

Camshaft grinding

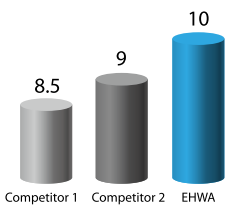
- **Benefits of EHWA vitrified CBN wheels for camshafts**

  · High removal rate & low grinding force
  · Excellent surface finish and profile stability
  · Increased dressing intervals and longer wheel life

- **Increased material removal rate**

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

· **Work material** – chrome molybdenum steel (Sintering)
· **EHWA wheel specification** – 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



Qw' (removal rate)

$Qw' = \pi \times d_w \times v_f \times \partial_p / b_s$ $[mm^3/mm/s]$

d_w - work diameter
v_f - feed rate
∂_p - lobe width
b_s - wheel width

Crankshaft grinding

Vitrified CBN wheel
For crankshaft

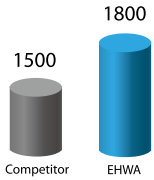
Crankshaft grinding

- **Benefits of EHWA vitrified CBN wheels for crankshafts**

  · Longer dressing intervals and 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 specification** – 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



G-RATIO

G-ratio =
workpiece's removal volume /
CBN wheel wear volume

Automotive | engine
Injector bore grinding

Bore grinding wheel

Seat grinding wheel

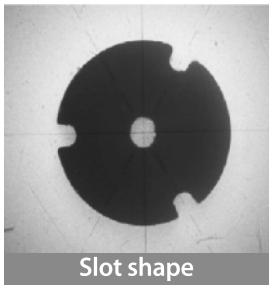
For fuel injection

| Advantages |

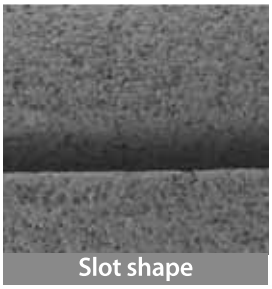
- Free cutting abrasive
- Longer dressing interval & more efficient utilization
- Consistent grinding performance
- Highly precise wheel shape including coolant hole and slots

| Standard Specifications |

Grinding	Bore, Seat
Coolant hole size	H 0.5~1.0mm
Wheel size	D 1.5~20mm
CBN grit size	29μm~76μm
Slot	0.4~1.5mm



Slot shape



Slot shape

Metal honing stones

Metal honing stones
For cylinder block and connecting rod

For cylinder block

| Advantages |

· Longer tool life & cost saving

Type	Stone mesh	Bond modification
Rough	D251~D91	MB,MS,MJ series
Semi-Finish	D76~D30	
Finish	D25~D8	MJ,MH series

For connecting rod

| Double -S |

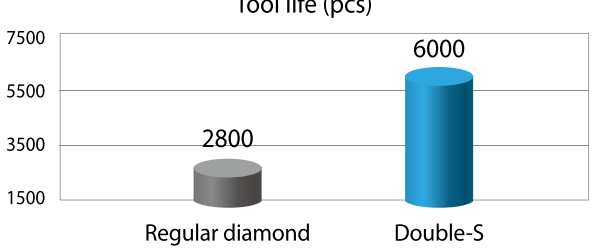
· Newly developed diamond with special coating
· Excellent roundness and surface finish
· Double the tool life

| Advantages |

· Longer tool life & cost saving

Stone Mesh	Bond modification
D151~D25	MJ,MH,MS series

| Performance |



Automotive | engine valve
Rotary dresser

Rotary dresser
For engine valve

| Engine valve |

The valve consists of a head, face and stem. It is installed to control the mixed gas required for power stroke into the combustion chamber and to exhaust the gas generated after combustion.

| Advantages |

- Customized design
- Highly precise dressing with long life
- Able to be designed as either a single product or an assembly

Rotary dresser
Grinding part

01 Face and neck

02 Stem centerless

03 Groove and chamfer

Rotary dresser

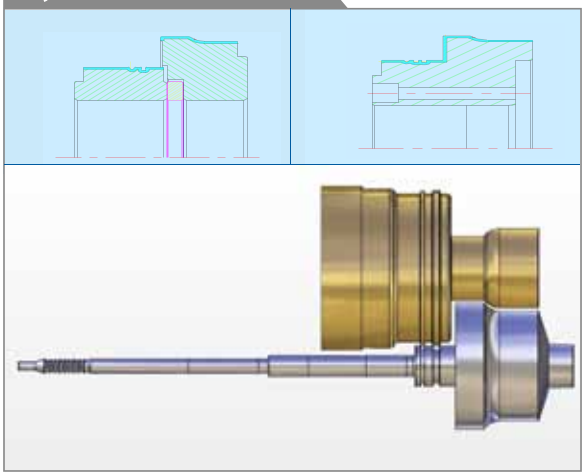
Rotary dresser
For turbocharger

A turbocharger, or colloquially turbo, is a turbine-driven-forced-induction device that increases the efficiency of an internal combustion of engine and output of power by forcing extra air into the combustion chamber.

| Advantages |

- Customized design
- Highly precise dressing with longer life
- Increased tool life with CVD reinforcement in key wear areas

Synchronous



Shaft grinding