



Wet Blasting extends the tip life while giving them a high added value.

Precise control of the **K value** / adhesion strength **more than doubled** /
cutting edge life increased **by 1.5 to 3 times**

Pretreatment for coating

Coating adhesion strength is more than doubled!!

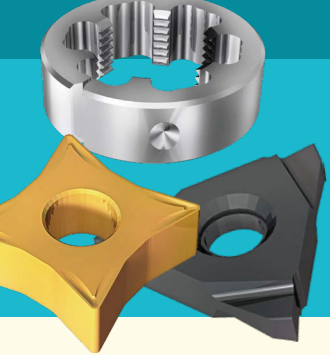
Treatment after coating

"Droplet removal" to prevent peeling-off of the PVD coating and chippings

Tip honing

Corner rounding of tool edges Tool life will increase 1.5 to 3 times

Processing rate control for tips K value control between 1.0 and 2.0



Pretreatment for coating

Coating adhesion strength
more than doubled!!

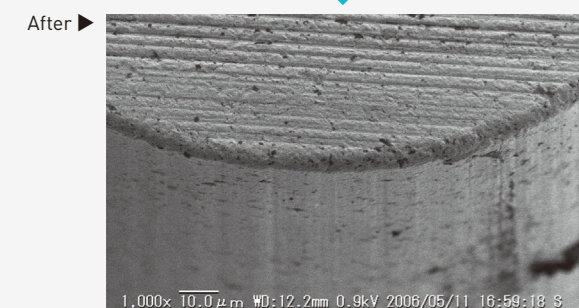
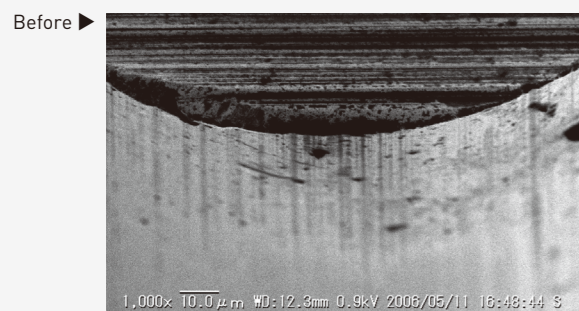
Do you receive the following types of inquiries related to coating pretreatment?

- ▲ Removing factors that prevent the coating from adhering
- ▲ Removing dirt and foreign matter
- ▲ Scraping off the vulnerable surface
- ▲ Making the surface ideal for coating
- ▲ Degreasing and cleaning
- ▲ Removing micro burrs

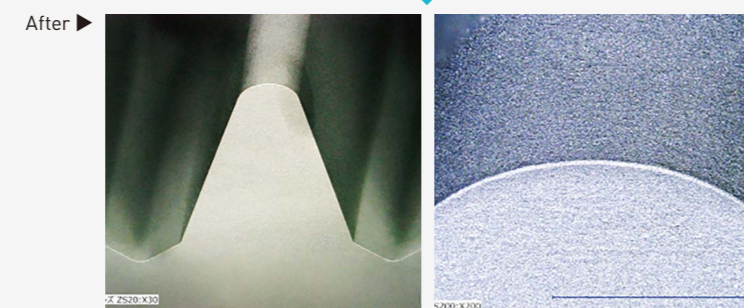
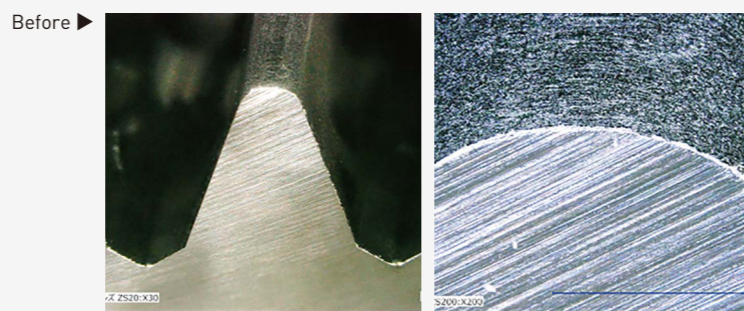
Wet blasting will ...

- 1 not scrape the surface too much
- 2 minimize damage to carbide tips
- 3 be compatible with complex shapes

Application Cemented carbide tip | Tip honing



Application Hob cutter | Deburring



Treatment after coating

“Droplet removal”
to prevent peeling-off of
the PVD coating and chippings

Do you receive the following types of inquiries related to coating pretreatment?

- ▲ Preventing partial peeling-off of the coating
- ▲ Preventing the galling and seizure of the tool

Wet blasting will ...

- 1 remove droplets without damage to the coating film
- 2 reduce surface roughness simultaneously
- 3 be compatible with complex shapes

Application Droplet removal

Laser microscope

Before ▶ | Surface roughness | Ra 0.24µm Rz 1.60µm

After ▶ | Surface roughness | Ra 0.16µm Rz 0.95µm

50.00µm 50.00µm

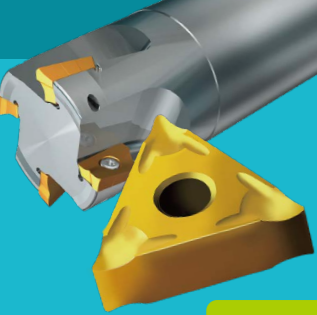
SEM

Before ▶

1,000x 10.0µm WD: 8.8mm 5kV S

After ▶

1,000x 10.0µm 5kV S



Tip honing

Corner rounding of tool edges

Tool life will increase **1.5~3.0** times

Processing rate control for tips

K value control between **1.0** and **2.0**

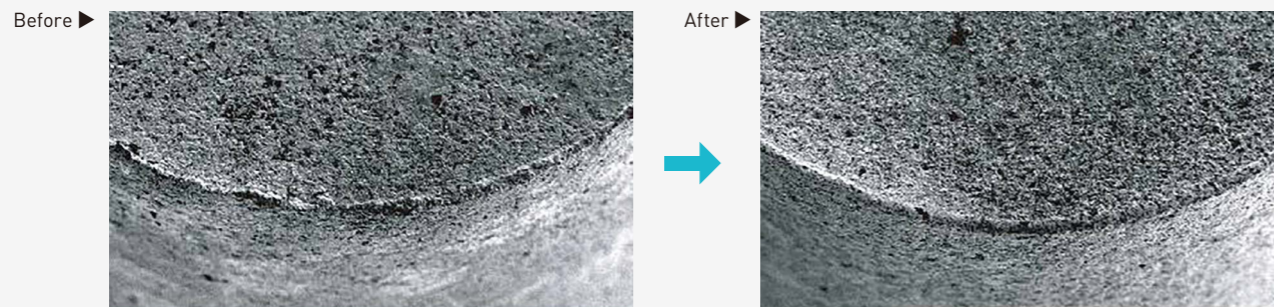
Do you receive the following types of inquiries related to coating pretreatment?

- ▲ Reducing the variation in rounded edge corners after honing
- ▲ Preventing the coating from peeling off from the tip
- ▲ Increasing tool lives

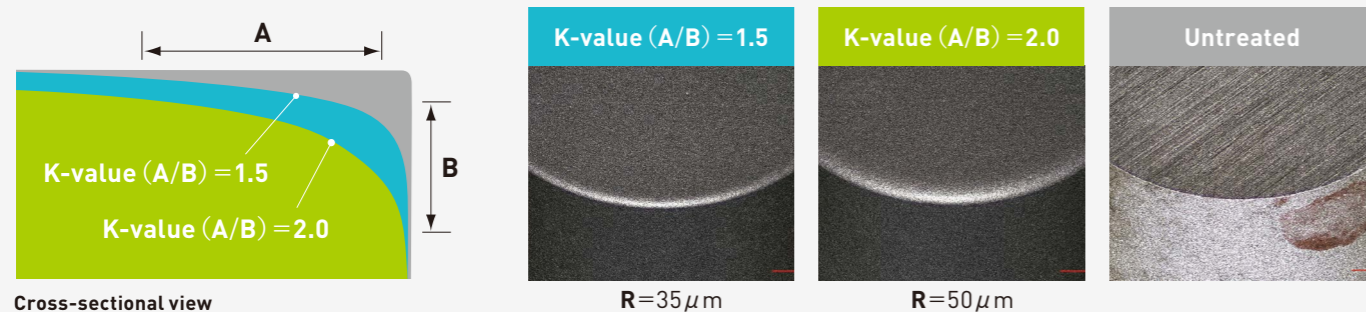
Wet blasting will ...

- 1 be Ideal for surface treatment of complicated shape parts
- 2 perform high-precision processing of $\pm 5\%$ using fine abrasives

Application Cemented carbide tip|Tip honing



Application Cemented carbide tip|K-value control



Comparison table of wet-blasting equipment for processing of cemented carbide tips

NEW



[One-by-one workpiece processing type]

VD-W019



[One-by-one workpiece processing type]

RBI-203



[Automated line & Pallet conveying type]

VD-R019



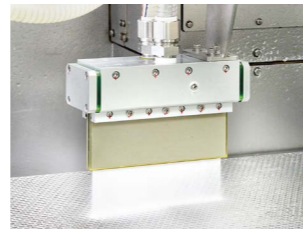
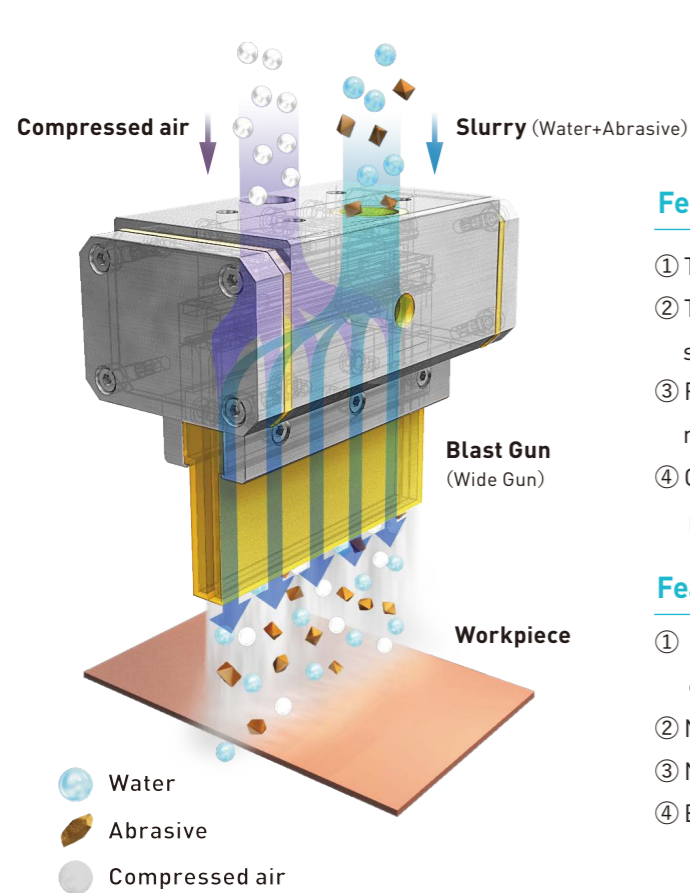
[Automated line & Pallet conveying type]

W3MN-Q010

		Model	VD-W019	RBI-203	VD-R019	W3MN-Q010
Purposes	Tip honing	K value control Auto	○			
		K value control Manual		○	○	○
	Pretreatment for coating		○	○	○	○
	Treatment after coating		○	○	○	○
Method	One-by-one processing		○	○		
	Batch processing (pallet conveying)				○	○
Production capacity			Max 225 /Hr	Max 225 /Hr	Max 6,000 /Hr	Max 12,000 /Hr

What is wet blasting?

Wet blasting is a technique to project a mixture of abrasive and water at high speed with compressed air against a material such as metal, plastic, or ceramic to clean, process, and modify its surfaces.



Features of Technologies

- ① The processing force can be flexibly controlled.
- ② The high reproducibility of the processed surface ensures stable quality.
- ③ Fine particles of several micrometers can be used, resulting in more precise processing.
- ④ Compatible with any material since it is a physical processing method.

Features of Equipment

- ① Easy daily equipment management Slurry concentration control only.
- ② No heat or static electricity is generated.
- ③ No dust is generated.
- ④ Excellent equipment durability.

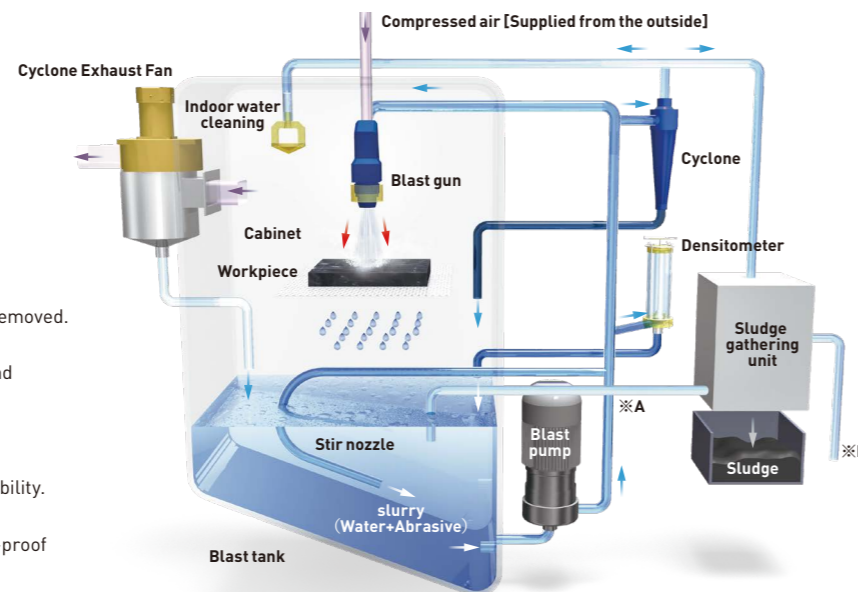
Click here for details →



<https://www.macoho.com/wetblast.html>

Basic system

- ① It can reduce waste and wastewater by recycling slurry and can also operate as a closed system.
- ② Only slurry concentration (abrasive volume) control is required on a daily basis, and automatic control is also available.
- ③ In wastewater treatment, suspended solids (worn particles and shavings) are classified and removed.
- ④ No dust is generated due to the wet processing and equipment structure.
- ⑤ This system uses many urethane rubber parts manufactured by Macohowhich provide high durability.
- ⑥ Secondary treatment is possible by adding a rust-proof agent* or a degreaser.



*Wet blasting using slurry with a rust-proof agent is Macoho's patented technology. [Patent No.: 6917643]

※ Depending on the equipment specifications, after the sludge gathering unit the water goes to either A or B.

SUSTAINABLE DEVELOPMENT GOALS

Environmental improvement through “wet blasting”

Contributes to reduction of environmental impact, energy conservation, and cost reduction.

Since its founding, Macoho has been working to protect the global environment by developing environmentally friendly technologies that reduce waste and wastewater, save labor, and curtail energy consumption. Here, we introduce our achievements in reducing environmental impact and energy conservation that we deliver to our customers.

Equipment processing technologies

- Technology that simultaneously performs blasting with no organic solvents, degreasing, and cleaning
- Single liquid lubricant application without pickling and bonding prior to cold forging
- Non-chemical treatment based on nano-level processing
- Blasting technology without compressed air
- Equipment for drawing in slurry without splashes that can also be used outdoors



Systems and fundamental technologies

- Wet processing ensures dust-free operation
- Slurry is recycled to reduce wastewater and waste
- Automated equipment reduces manual labor
- Cyclone water-classification system ensures effective use of water
- Long-life replacement parts made of highly durable materials
- Coagulant sludge is collected to reduce wastewater
- Macoho's proprietary exhaust system ensures a cleaner exhaust
- Water quality improvement system ... Reduction of water consumption (under development)



Development of abrasives

- Supply of abrasives that can be recycled as valuable resources after blasting
- Reduction of waste by using water-soluble materials (under development)
- Long-life abrasives with extremely high fracture toughness
- Use of plant-derived materials that can be disposed of as general waste (under development)
- Dust prevention by supplying fine abrasive slurry (under development)
- Recycling of used abrasives (under development)





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