



Is it okay if your toolings get rusty ?



# Machining ECO

## ECO Black Tooling

It is the new standard in the era of automation that protect toolings in a magazine from rust.

Ideal for horizontal M/C

# ECO BLACK TOOLING



The need for labor-saving due to the decline in the working population is increasing. Horizontal machining centers are attracting attention as machine tools with large-capacity tool magazines that can perform continuous machining for automation and process integration purposes in the field of small-lot production of various shapes of workpieces. NIKKEN proposes "ECO BLACK TOOLING" as a maintenance-free rust-proof tool that supports horizontal machining centers that realize automation and labor-saving by process integration.

# ECO BLACK Treatment

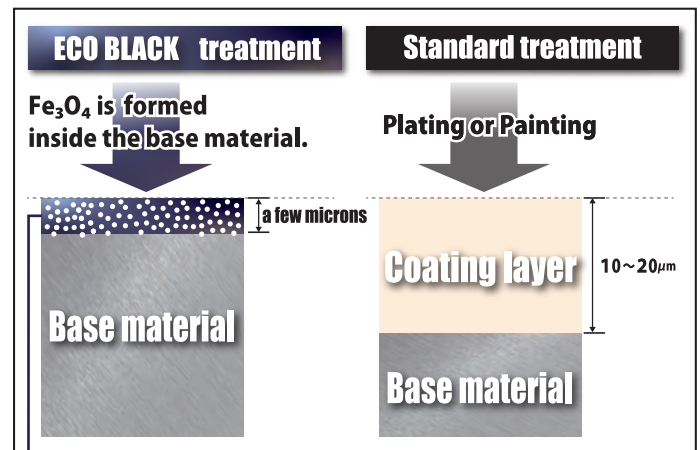
- ECO BLACK : "The black rust prevents the red rust from forming." It is not a plating process.
- It creates a fine film and penetrates into the tooling material a few microns deep.
- It does not have a significant effect on the quenching hardness or the mechanical properties of the base material.
- It protects the spindle accuracy and shows a effect of preventing wear caused by sliding and scuffing.
- It prevents rust on all metal surfaces, not only on the outside, but also on the inside of the holder.

## What is the ECO BLACK ?

ECO BLACK TOOLING is a product that has been treated with excellent anti-rust and anti-corrosion treatment.

It forms a fine film of the contents ( $\text{Fe}_2\text{O}_4$ ), and penetrates into the tooling material and exhibits a powerful anti-rust and anti-corrosion effect. In the United States, it is specified by the MIL standard (MIL-C-13924), and has established a high

reputation and track record as an anti-rust and anti-corrosion coating treatment.



• The surface part that has become a porous structure by the black rust is treated with a water displacer by plant-based rust preventive oil, which replaces the moisture and oil in the pores. As a result, a more advanced rust prevention treatment is achieved.

## Comparison with standard products

Even if you use the tooling for many years, it will not let red rust get close to the shank part.



Standard Tooling 8 years used



ECO BLACK Tooling 18 years used



Please note that rust may occur on the outer periphery of the tooling if the oil is completely removed, such as by degreasing, in an environment where the oil is completely removed.

It also has a tremendous effect on dry machining of brittle materials such as ceramics and quartz.



# Extensive Product lines

ECO BLACK TOOLING can be selected from various types of collet chucks, milling chucks, face mill arbors, and boring bars, in any lineup of Nikken products. You can also choose from different machine spindle standards, such as BT, HSK, polygon taper, NBT (BT 2-face Contact), MBT (BT 3-face Contact), and NC5\*. You can choose according to a wide range of machine tools.

**BT**

BT 2-face Contact  
**NBT**

BT 3-face Contact  
**MBT**

**HSK**

**NC5**

Ideal for Multi-tasking  
**POLYGON TAPER**

\*NC5 is standard with ECO BLACK specification. (Except for the taper cone part)

THE  
ORIGIN

## MILLING CHUCK

"THE ORIGIN" milling chuck, which combines a powerful gripping force by Multi-lock system and a compact tip that excels in high-speed rotation.

NBT40	Clamping Range : $\phi 12-32$ Length from the gageline : 65-135	NBT50	Clamping Range : $\phi 12-42$ Length from the gageline : 105-500
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NBT50-C32-250-RP

VERSATILE

## SLIM CHUCK

The versatile holder that is the core of the machining site, demonstrating its power in various applications such as end mill machining, drill machining, reamer machining, etc.

NBT40	Clamping Range : $\phi 0.7-25.4$ Length from the gageline : 60-250	NBT50	Clamping Range : $\phi 0.7-25.4$ Length from the gageline : 105-300
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NBT50-SK13C-250-RP

HIGH  
SPEED

## MINI-MINI CHUCK ADVANCED $\alpha$

A professional of small-diameter machining that achieves excellent mouth tightening, high runout accuracy, and high-speed specification of MAX. 30,000 rpm.

NBT40	Clamping Range : $\phi 1-12$ Length from the gageline : 90-180	NBT50	Clamping Range : $\phi 1-12$ Length from the gageline : 90-195
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NBT40-MMC12C-180-AA-RP

STRONGEST

## ZMAC ADVANCED BORING BAR

High rigidity with unique shoulder support and mouth lock. The strongest boring bar with improved accuracy, ease of use and durability.

NBT40	Boring Range : $\phi 15.9-100.2$ Boring Depth : 38-225	NBT50	Boring Range : $\phi 15.9-180.5$ Boring Depth : 38-290
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26-ZMAC55-70AAV, SP26-26-90-RP, NBT50-Q26-170N-RP

GENERIC

## FACE MILL ARBOR

The generic face mill arbor for oil hole and high feed cutter, available in millimeter series and inch series.

NBT40	Cutter DIA. : $\phi 50-160$ Length from the gageline : 45-60	NBT50	Cutter DIA. : $\phi 50-160$ Length from the gageline : 60-350
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NBT50-FMH22.225-60-250-RP

In addition to the above, we have a variety of tooling options to suit your machining needs. For more information, please contact our sales staff.



- If the detection of tool existing at tool magazine by optical method on your M/C, the tool with RP treatment may be judged "no tool existing". Please check your M/C specification.
- The taper connection of the tool shank with RP treatment is more stuck than the taper connection of the tool shank without RP treatment. Then, the unclamping force for the tool with RPT is required 20% stronger than the unclamping force for the tool without RPT. Please be careful to check the unclamping force of your M/C, when the tool with RPT treatment is chosen.
- Therefore, the taper cone of tool and NC5 tool is changed to without RP treatment as standard. And the special anti-rust treatment is applied to the taper cone.

★ Products with '-RP' at the end of the code number are "ECO BLACK TOOLING".

# The master of rust prevention ECO BLACK TOOLING



Protect the spindle and maintain its accuracy

Prevent wear caused by sliding and scuffing

Does not significantly affect the quenching hardness and the accuracy



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