



Diamond and CBN rotary cutting tools

To ensure safety, be sure to carefully read before using the diamond and CBN rotary cutting tool (below referred to as the 'rotary tool'), the instruction manual of the rotary tool, the instruction manual of the used machine, and the instruction manual of the coolant (cutting oil). After reading the manuals, be sure to sufficiently explain the instructions to operators, and to keep it within their easy reach. Improper handling may result in faults or injuries.

Meaning of warning and caution

The Instruction Manual and Attention in the diamond tool security as follows according to the extent of risk and injury that could be caused by improper handling.

 **Warning** Improper handling may result in death or serious injury.

 **Caution** Improper handling may result in a minor injury or only material damage.

Prohibited action symbols



Prohibited



Do not touch

Instruction action symbols



Follow the instruction



Wear safety glasses



Wear safety shoes



Wear a safety hat



Wear a mask



Wear earplugs



Unplug the machine

1. Work environment, Clothing, Protective outfit



Warning



Be sure to properly install the safety cover specified by the manufacturer of the used machine.

When a rotary tool or material breaks, the resulting dispersed fragments can hit nearby operators and cause serious injury.

In addition, a safety cover prevents an operator from touching the rotary tool.



No person other than authorized personnel is allowed to enter working zone of the used machine. Especially keep away from the rotary tool, a table and other parts of the used machine, and travel range of the machine.





Sparks may be generated by contact between the rotary tool and a material. Do not use the rotary tool in flammable or explosive environments.




Be sure that operators wear dust goggles, safety shoes, hard hats and other protective outfits, as well as work clothing with tight sleeves and trousers furled at the bottom.

Caution






-  Be sure that operators wear dust masks. Provide sufficient ventilation to remove coolant (cutting oil) mist, dust and other particles from the air.
-  Clean the floor around the used machine, and keep things around the machine tidy and in order.

2. Before use

Warning






-  The maximum working circumferential speed of the rotary tool is 40 m/s. Be sure to not exceed the maximum operating peripheral speed.

Caution

-  Check whether dimensions of the rotary tool fit the mounting dimensions of the used machine.
-  Remove the protection materials (seal peel, plastic film, etc.) from the rotary tool. Keep the removed materials in an enclosure.
-  After cleansing rust-preventive compound off the rotary tool, check for blade cracking and chipping, bonding defects, etc.
-  Check for bends and warps of the tool.
-  Clean the tool mounting portion of the main spindle of the used machine. Also, clean the flange if used, and check for blemishes, bends, warps, and imbalance of the rotary tool.


3. Tool set up

Warning

-  Check for blemishes and foreign objects adhered to the tool and fitting portion of the flange. If there are small blemishes, burrs, swells in the bore of the rotary tool, fix them using sandpaper or another means.
-  When mounting the rotary tool on the main spindle of the used machine, make sure that power turns off.
-  Press gently the rotary tool into the flange.
-  Do not press forcibly by hammering etc. It is prohibited to machine the bore of the rotary tool to change its dimensions. Please consult with us if necessary.
-  Tighten the flange screws in a criss-cross pattern.

4. Idling





Warning

-  Check whether the rotary tool is securely fastened, and whether the feed mechanism operates properly.

- ❗ Check whether the material is securely fastened and operates properly. When the tool or the part is broken, dispersed fragments may cause an injury.
- ❗ Check whether the tool is rotated in the proper direction. When the tool loosens and breaks, dispersed fragments may cause an injury.
- ❗ Perform no-load test run for 1 -3 min. before operating, check whether there occurs abnormal sound and vibration.

5. Cutting

Warning


-  Never touch the tool when it is rotating. Touching the rotating tool or getting caught in the machine may result in a serious injury.
- ❗ If abnormal sound or vibration occurs, disengage the rotary tool immediately, and fully stop the operation. If one continues operation in this state, the tool and/or material may break and scatter, causing injury.
-  Never turn the switch of the tool main shaft on or off when the rotary tool is in contact with a material. When the tool or the part is broken, flying fragments may cause a serious injury.
- ❗ Perform cutting operations after the spindle has reached the working speed, and make sure that cutting fluid or cutting oil is supplied sufficiently to the surface of contact with material.
-  After completion of cutting operations, turn the switch of the tool main shaft off.
- ❗ Wait until the rotary tool stops naturally, without touching it by hand or pressing it against any object.
-  When removing the rotary tool from the main spindle of the used machine, make sure that power turn off.

Caution

- ❗ In a cutting test, make sure that feed, cutting depth, cycle time and other settings are implemented properly. Do not use the tool under overload conditions.
- ❗ Please consult with us if there is any problem in the cutting condition or tool specifications in terms of cutting performance, etc.

6. Storage, Handling

Caution

-  Do not touch the blade edge with your bare hands, or you may be injured. Impact to the rotary tool may result in defecting, cracking, and such, and be damaged.
- ❗ Be sure to inspect the working surfaces of the rotary tool, and to check for abnormal wear, cracks, defects, abrasion and other damage.
- ❗ When unpacking and storing the rotary tool, rustproof it, protect the blades (with Seal Peel, plastic, etc.) and keep it in a dry place protected from falls and impacts.

Do not modify the shape of the rotary tool. Please consult with us if necessary.