Regrinding Instructions

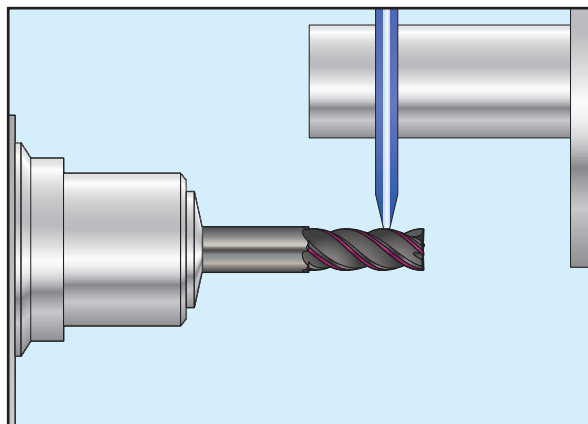SUMITOMO
CARBIDE - CBN - DIAMOND

GSX Anti-vibration Type
[GSXVL4000-2.5D]

⚠ **Cautions for Regrinding**
- To reduce grinding temperature, it is recommended to use coolant.
- Remove wear or damage on the tool as much as possible in each grinding step.
- To improve the performance of reground items, it is recommended to attach round margin on radial cutting edge.
- While some anti-vibration effect will be worked even if round margin are not attached, but it may not be possible to obtain sufficient performance.
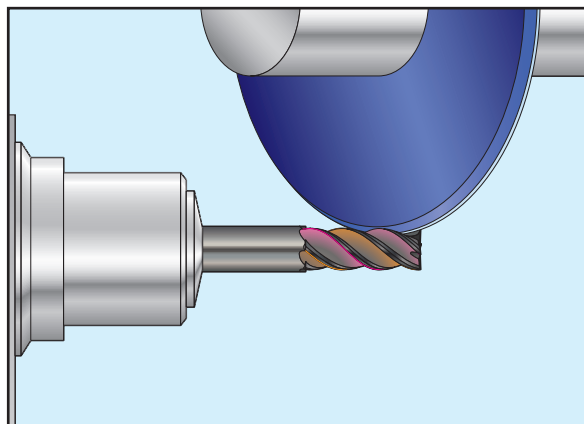
(1) Peripheral Grinding

- Grind the periphery of the endmill.
   *If not creating round lands when regrinding, this step is not required.

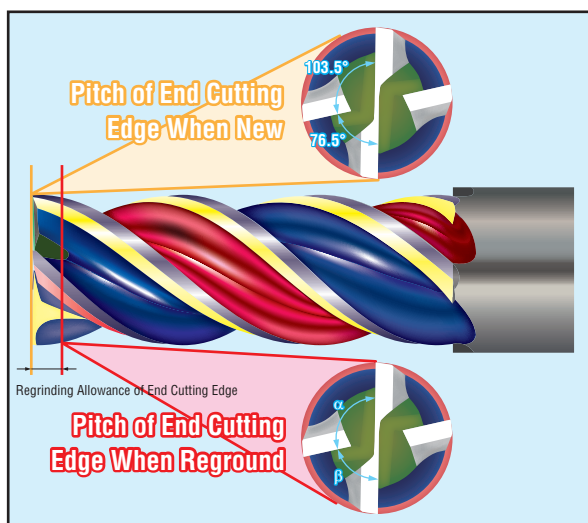## (2) Regrinding Radial Cutting Edge (Rake Face and Relief)

- Next, grind radial cutting edges.
- After grinding two cutting edges with same helix angle, grind the remaining two cutting edges.
- **When grinding the relief, leave round margin with approximately 0.05 mm width.**
   *1 If rake faces are not damaged, they do not need to be ground.
   *2 If not attach round margin, grind the relief as far as the cutting edge, ensuring that no unground areas of the radial cutting edge.

(3) Regrinding Gash and End Cutting Edge

Pitch of End Cutting Edge When New
103.5°
76.5°

Regrinding Allowance of End Cutting Edge

Pitch of End Cutting Edge When Reground
α
β

- Lastly, grind the end cutting edge.
- The pitch angle of the end cutting edge is 103.5°/76.5° for new endmills, but due to the tool's unequally lead, pitch angle changes depending on cutting edge length.
   Consider what the cutting edge length will be after regrinding, measure pitch angles α and β in advance, and then regrind.
- As with regrinding the radial cutting edge in step (2), after grinding two cutting edges with same helix angle, grind the remaining two cutting edges.
   *When regrinding radial cutting edges only, this step is not required.

(4) Recoating

⚠ **Recoating/Before Use**
- Check that there are no wear or damage on the reground tool.
- Check that there are no burrs, etc., on the cutting edge.

- After regrinding, coat cutting edges before use.
   *When using uncoated models, this step is not required.

Design of Tool before regrind

Specifications of tool before regrind
Edge A: Helix Angle of Long End-Cutting-Edge: 40°
Edge B: Helix Angle of Short End-Cutting-Edge: 43°
Pitch Angle of End Cutting Edge: 76.5°/103.5°/76.5°/103.5°

Peripheral Round Margin
Aim For 0.05 mm
Approx. 15°
Peripheral Relief Angle

Cross Section of Radial Cutting Edge

Approx. 103.5°
A
B
Approx. 76.5°
A

A
B
B
A

40°
B
43°

Ingenious Dynamics

住友電工
SUMITOMO ELECTRIC