



1. Regrinding of Solid Carbide Tools

Regrinding restores the cutting edges of the tool to their original geometry, improving performance and enabling reuse.

Steps Involved:

1. Inspection:

- Assess the tool's condition to determine if it is suitable for regrinding. Tools with severe wear, chipping, or breakage may not be salvageable.

2. Preparation:

- Clean the tool to remove any cutting fluid, debris, or material buildup.

3. Precision Grinding:

- Use CNC tool grinding machines equipped with diamond grinding wheels to restore the tool's geometry, cutting edges, and dimensions.
- Follow the original tool design specifications for proper geometry and tolerances.

4. Quality Check:

- Inspect the reground tool for accuracy, concentricity, and sharpness. High precision is crucial for maintaining machining performance.



Benefits of Regrinding:

- Cost savings compared to purchasing new tools.
- Reduced waste and environmental impact.
- Consistent machining quality and performance.



2. Recoating of Solid Carbide Tools

Recoating restores the protective layer on the tool, which is critical for improving wear resistance, reducing friction, and enhancing tool life.

Steps Involved:

1. Surface Preparation:

- **Stripping:** Remove the worn coating using chemical or mechanical methods without damaging the tool substrate.
- **Cleaning:** Thoroughly clean the tool to eliminate contaminants, ensuring proper adhesion of the new coating.

2. Recoating:

- Apply a new coating layer using advanced techniques such as **PVD (Physical Vapor Deposition)** or **CVD (Chemical Vapor Deposition)**.
- Common coatings include Titanium Nitride (TiN), Titanium Aluminum Nitride (TiAlN), and Diamond-like Carbon (DLC), depending on the application and material being machined.

3. Post-Coating Treatment:

- Perform finishing processes like polishing or edge honing if necessary to ensure smoothness and sharpness.

4. Final Inspection:

- Check the coating's thickness, adhesion, and uniformity. Ensure that the tool meets the required performance standards.

Benefits of Recoating:

- Enhanced wear resistance and thermal stability.
- Lower friction, reducing heat and tool wear during machining.