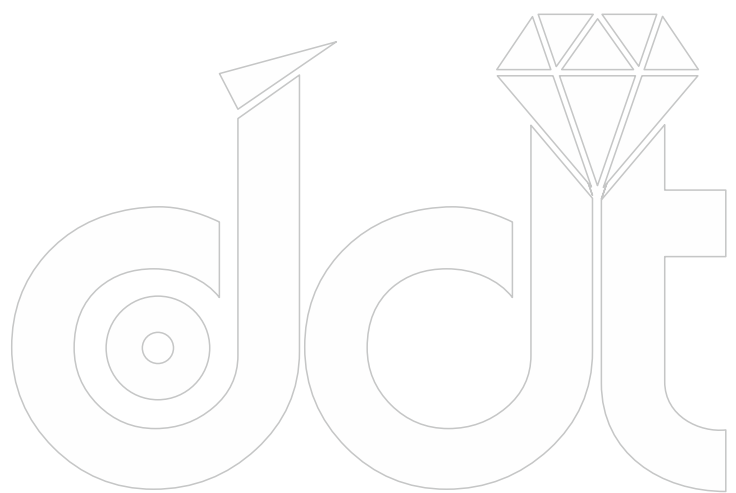


Precision that defines perfection



Diamond tools that redefine  
performance and accuracy



## About DDT

Founded with a vision to redefine precision and excellence, Drishti Industrial Diamond Tools has established itself as a premier manufacturer of high-quality diamond dressers and precision tools. With a strong foundation built on years of expertise, innovation, and a commitment to superior craftsmanship, we cater to a diverse range of industries, helping them enhance efficiency, accuracy, and performance in their operations.

Our cutting-edge manufacturing processes, combined with stringent quality control measures, ensure that every tool we produce meets the highest industry standards. From automotive and aerospace to heavy engineering and beyond, we provide customized solutions that empower businesses to achieve optimal results.

Headquartered in Chhatrapati Sambhajnagar (Aurangabad), Maharashtra, India, Drishti Industrial Diamond Tools remains dedicated to advancing technology and exceeding customer expectations through continuous research, development, and excellence in diamond tool manufacturing.



### MISSION

To provide state-of-the-art diamond dressers and tools that empower industries to enhance efficiency, precision, and durability in their processes.



### VISION

To be a globally recognized leader in diamond dresser and tool manufacturing, driving innovation and setting benchmarks in quality and customer satisfaction.



### VALUES

**Quality:** Delivering superior products that exceed expectations.

**Innovation:** Constantly evolving to stay ahead.

**Integrity:** Built on transparency and honesty.

**Customer Focus:** Tailoring solutions to client needs.



## Single point Diamond Dresser

A single point diamond dresser is a tool used in the process of dressing grinding wheels. Dressing is a technique used to restore the shape of a grinding wheel, remove built-up material, and expose fresh abrasive particles, ensuring optimal grinding performance.

The single point diamond dresser consists of a single, sharp diamond point that is mounted onto a holder. The diamond point is used to touch the surface of the grinding wheel, gradually breaking down the worn surface and exposing fresh abrasives. This ensures that the grinding wheel maintains its cutting ability and shape, leading to more precise and efficient grinding.

### Key Features

- ◀ **Diamond Tip:** A high-quality natural or synthetic diamond is used because of its exceptional hardness and wear resistance.
- ◀ **Steel Shank :** Provides a sturdy base for the diamond and facilitates easy mounting onto dressing equipment.
- ◀ **Precision :** Suitable for precise dressing tasks and maintaining the form accuracy of the grinding wheel.
- ◀ **Versatility :** Can be used with a wide variety of grinding wheels, including aluminium oxide, silicon carbide, and CBN wheels.

### Applications

- ◀ It is commonly used in precision grinding applications where high accuracy and surface finish are essential.
- ◀ It is typically used for precision dressing of fine grinding wheels for tasks like sharpening tools, polishing surfaces, and creating specific profiles on the workpiece.



## Chisel Diamond Dresser

A Chisel Diamond Dresser is a type of diamond tool used for dressing or truing grinding wheels. It features a diamond tip shaped like a chisel, which allows it to precisely reshape and condition the surface of abrasive grinding wheels. Here's an overview of its key aspects:

### Key Features

- ◀ **Diamond Tip** : The chisel-shaped diamond is highly durable and can withstand high temperatures and pressures.
- ◀ **Precision** : It is designed for intricate dressing tasks, especially when creating specific profiles or contours on the grinding wheel.
- ◀ **High Efficiency** : Provides a clean and sharp cutting edge, enhancing the grinding wheel's performance.
- ◀ **Applications** : Suitable for both rough and fine dressing operations.

### Applications

- ◀ **Tool Manufacturing** : For producing cutting tools like drills, end mills, and reamers.
- ◀ **Automotive and Aerospace** : Ensures high-precision components like engine parts and turbine blades meet specifications.
- ◀ **Medical Equipment** : Used for manufacturing surgical instruments and implants.
- ◀ **General Engineering** : Any application requiring precision grinding of components.





## Impregnated Diamond Dresser

An impregnated diamond dresser is a specialized tool used in machining processes, particularly in grinding operations, to dress (restore or reshape) the surface of a grinding wheel. These dressers are made by embedding fine diamond particles into a matrix, typically of metal or another durable material, which acts as a binder.

### Key Features

- ◀ **Composition:**
  - Diamond Particles :** Provide cutting and dressing action.
  - Matrix Material :** Holds diamonds and wears uniformly to expose fresh particles.
- ◀ **Function:**
  - True and dress grinding wheels for optimal performance.
  - Effective on resin, vitrified, and metal-bonded wheels.
- ◀ **Advantages:**
  - Durable :** High wear resistance.
  - Consistent :** Fresh diamonds continuously exposed.
  - Precise :** Maintains fine profiles and tight tolerances.

### Applications

- ◀ **Grinding Wheel Maintenance :** Precision grinding for metals, ceramics, and composites.
- ◀ **Tool & Die Industry :** Essential for molds and dies.
- ◀ **Aerospace & Automotive :** Ensures accuracy for hard materials.



## Multipoint Diamond Dresser

A Multipoint Diamond Dresser is a tool used to dress and sharpen grinding wheels, ensuring optimal performance. It features multiple diamond points embedded in a base, providing several contact points for efficient dressing. This design helps expose fresh abrasive grains, maintain wheel shape, and enhance grinding precision. Ideal for high-material removal applications, it offers superior durability and longevity. Widely used in industries requiring frequent wheel dressing for precision grinding.

### Key Features

- ◀ **Even Wear Distribution** : The multiple diamond points ensure that wear is distributed evenly, extending the life of the dressing tool.
- ◀ **High Efficiency** : It can dress a larger surface area in a shorter time compared to single-point dressers.
- ◀ **Better Wheel Profile Maintenance** : The multiple contact points help to maintain the proper profile of the grinding wheel, improving the consistency of the grinding process.
- ◀ **Durability** : Diamond is one of the hardest materials, so a multipoint diamond dresser has excellent longevity and can withstand heavy-duty use.

### Applications

- ◀ **Precision Grinding** : Used in industries where grinding operations require a high degree of precision, such as in tool making, cylinder grinding, and high-speed grinding.
- ◀ **CNC Grinding** : In Computer Numerical Control (CNC) grinding machines, multipoint diamond dressers are often used to automate the dressing process, ensuring consistent wheel profiles during production.
- ◀ **Hard Materials** : Multipoint diamond dressers are especially useful for grinding wheels that are used for hard materials like high-speed steel, tungsten carbide, or ceramics.



## Needle Blade Dresser

A Needle Blade Dresser is a type of diamond dressing tool used in the grinding and machining industry. It is designed to dress (or shape) the surface of grinding wheels, especially those used in precision grinding operations. The tool has a thin, needle-like blade made of industrial diamonds, which are known for their hardness and durability.

The Needle Blade Dresser is used to maintain the grinding wheel's surface integrity by removing built-up material or debris that can affect the grinding process. It helps in restoring the grinding wheel's cutting ability, ensuring smoother and more precise grinding operations. These dressers are typically used in applications where high precision and fine surface finishes are required.

### Key Features

- ◀ **Precision** : Helps in maintaining the accuracy of the grinding wheel surface.
- ◀ **Efficiency** : Improves the grinding process by ensuring the wheel is sharp and free from material buildup.
- ◀ **Durability** : The diamond blade offers excellent wear resistance and longevity, making it suitable for high-performance applications.

### Applications

Needle Blade Dressers are used in a wide variety of industries and applications:

- ◀ **Tool Grinding** : For sharpening or shaping cutting tools such as drills, taps, and dies.
- ◀ **Precision Grinding** : In industries where precision is essential, such as the manufacturing of aerospace components, automotive parts, and medical devices.
- ◀ **Grinding Wheels for Hard Materials** : Used in dressing grinding wheels that are used for hard materials such as carbide, ceramics, and hardened steels.





## MCD Blade Dresser

An MCD Blade Dresser is a precision tool made from monocrystalline diamond, used to dress and reshape grinding wheels. It ensures sharpness, prevents buildup, and maintains cutting performance for high-quality finishes and extended wheel life. Ideal for tool manufacturing, metalworking, and precision engineering.

### Key Features

**High Precision & Longevity** : Ultra-sharp edges ensure precise dressing, superior surface finish, and extended tool life.

**Better Wear Resistance** : Uniform wear provides consistent performance, unlike Needle Blade Dressers, which may wear unevenly.

**Reduced Wheel Wear & Heat** : Low friction minimizes grinding wheel damage and extends its lifespan.

### Applications

#### ◀ Grinding Wheel Maintenance

**Wear and Clogging** : Grinding wheels wear down over time and accumulate debris from the workpiece.

**Dressing with MCD Blade Dresser** : Removes debris, restores sharpness, and ensures a flat, consistent cutting edge for accurate results.

#### ◀ Precision Grinding

**High-Precision Applications** : Essential for tool manufacturing, semiconductor production, and optical components.

**Maintains Integrity** : Ensures a smooth surface finish and dimensional accuracy.

#### ◀ Hard and Superhard Materials

**Durability** : MCD Blade Dressers, made from monocrystalline diamond, can handle extremely hard materials.

**Suitable for** : Grinding wheels used on ceramics, carbide, and hardened steel.



## Conical Diamond Dresser

A Conical Diamond Dresser is a tool used in grinding operations to dress (reshape) and true (correct) the surface of a grinding wheel. It features a conical-shaped diamond tip, which provides precise contact with the grinding wheel. Here's a more detailed explanation:

### Key Features

- ◀ **Shape** : The diamond tip is conical, allowing for precise dressing with minimal contact area.
- ◀ **Material** : The tool uses industrial-grade diamonds, ensuring high durability and wear resistance.
- ◀ **Mounting** : Typically mounted on a holder or shank that can be adjusted to ensure the correct angle and depth of cut.

### Applications

- ◀ **Wheel Dressing** : Removes unwanted material from the grinding wheel surface, exposing fresh abrasive grains.
- ◀ **Wheel Truing** : Corrects the wheel's geometry to restore its original shape and alignment.
- ◀ **Precision Grinding** : Often used in industries requiring high precision, such as automotive, aerospace, and tool manufacturing.



# Hardness Indenters

## ◀ Vickers Hardness Indenter

### **Introduction :**

Diamond pyramid-shaped tool (136° angle) used in the Vickers hardness test. Results are expressed in Vickers Hardness Number (VHN) or HV.

### **Features :**

Ensures precise indentations.  
Test load ranges from 1 gf to 100 kgf.  
Hardness is calculated from indentation area.

**Applications :** Quality control, material selection, coating analysis, thin film testing, and research.

## ◀ Rockwell Hardness Indenter

**Introduction :** Measures indentation depth in the Rockwell test using steel balls (soft materials) or diamond cones (hard materials).

**Features :** Uses Rockwell scales (A, B, C) based on material and indenter type.

**Applications :** Material selection, quality control, heat treatment verification, and engineering research.

## ◀ Ball Indenter

**Introduction :** Steel or carbide ball used in Brinell and other hardness tests, measuring hardness by indentation size.

### **Features :**

Ball diameters range from 1 to 5 mm.  
Hardness is calculated based on impression size under load.

**Applications :** Quality control, material selection, and R&D in manufacturing.



## Burnish Tool

A burnish tool smooths surfaces by applying pressure, enhancing finish without material removal. Diamond burnish tools, with a diamond tip, provide ultra-smooth finishes, increasing hardness and durability. Widely used in aerospace, automotive, and medical industries, they improve wear resistance and eliminate post-machining polishing.

### Key Features

**Diamond Tip** : Industrial-grade diamond ensures hardness and durability.

**Precision** : Achieves mirror-like finishes (up to 0.05 microns Ra).

**Cold Working** : Compresses rather than removes material, increasing hardness.

**Easy Integration** : Works with CNC lathes, milling, and manual machines.

**Adjustable Force** : Spring-loaded mechanisms allow customized pressure control.

### Applications

**Surface Finish** : Used in aerospace, automotive, and medical industries.

**Hardening** : Enhances durability and reduces wear.

**Friction Reduction** : Improves efficiency in moving parts.

**Cost & Time Efficiency** : Reduces cycle time and eliminates secondary finishing.

**No Extra Operations** : Replaces polishing or honing, saving costs and production time.

An Indexable Burnish Tool is a precision tool used in machining to improve the surface finish and hardness of a workpiece without removing material. Instead of cutting, it compresses and smooths the surface using a highly polished, hard material, such as diamond or carbide.

### Key Features

**Indexable Inserts** :

The burnishing element (often a diamond or carbide insert) can be rotated or replaced when worn, improving tool life and efficiency.

**Material Compatibility** :

Works on metals like steel, aluminum, titanium, and hardened alloys.

**No Material Removal** :

Unlike traditional machining, burnishing only deforms the surface layer, increasing its hardness and reducing roughness.

**Improved Surface Finish** :

Achieves mirror-like finishes (Ra values below 0.1  $\mu\text{m}$ ).

**Increased Productivity** :

Reduces the need for secondary processes like grinding or polishing.



## Diamond Gauging Finger

A Diamond Gauging Finger is a precision tool used in industrial applications for extremely accurate measurement and gauging. It is typically employed in quality control processes where exact measurements are critical, such as in the machining of high-precision components. Here's a breakdown of its key features and uses:

### Key Features

- ◀ **Diamond Tip :**  
The gauging finger is tipped with industrial-grade diamond, ensuring exceptional hardness and wear resistance.  
The diamond provides high precision and maintains accuracy over extended use.
- ◀ **High Durability :**  
Resistant to wear and deformation, even when used on hard materials like metals and ceramics.
- ◀ **Precision Measurement :**  
Ensures extremely accurate gauging for parts where tolerances are minimal.

### Applications

- ◀ **Machine Tool Industry:**  
Used in lathes, milling machines, and grinding setups for alignment and measurement.
- ◀ **Automotive and Aerospace:**  
Ensures precision in the manufacturing of critical components.
- ◀ **Quality Control and Inspection:**  
Integral in processes requiring precise measurements to ensure product conformity to specifications.





# Diamond File

A Diamond File is a precision tool made by embedding small industrial diamond particles onto a metal file. It is used for fine grinding, shaping, and smoothing of hard materials such as:

- ◀ Metals (especially hardened steels)
- ◀ Ceramics    ◀ Glass    ◀ Stone    ◀ Composites

## Key Features

**High Hardness :** Diamond is the hardest naturally occurring material, making it ideal for working on tough surfaces.

**Precision :** Diamond files offer exceptional accuracy for detailed work.

**Durability :** They maintain their sharpness longer than conventional files.

**Versatility :** Available in various shapes (flat, round, half-round, triangular) for different applications.

## Applications

### ◀ Industrial Use :

**Machining and Tooling :** For sharpening and deburring machine tools.

**Automotive and Aerospace :** Refining high-precision components.

### ◀ Jewellery Making:

Polishing intricate designs and refining gemstones.

### ◀ Glass and Ceramics:

Smoothing and shaping edges without causing cracks.

### **Medical Instruments:**

Refining surgical tools and equipment.

### ◀ DIY and Hobbies:

Widely used in model-making, woodworking, and crafts for detailed work.



## Diamond Paste

Diamond paste is a high-precision abrasive compound designed for ultra-smooth polishing. With fine diamond particles suspended in an oil- or water-based medium, it is available in various grit sizes to achieve finishes from coarse to mirror-like.

### Key Features

- ◀ Superior cutting and polishing power
- ◀ Suitable for metals, ceramics, glass, and gemstones
- ◀ Customizable abrasiveness for different applications

### Applications

- ◀ **Tool & Die Making** : Molds & dies polishing
- ◀ **Optics** : Lenses & mirror finishing
- ◀ **Jewelry** : Polishing gemstones & metals
- ◀ **Industrial** : Refining hard surfaces like tungsten carbide

### Why Choose Us?

- ◀ Unmatched Quality & Durability
- ◀ Tailored Solutions for Unique Needs
- ◀ Cutting-edge Technology & Expert Support
- ◀ Commitment to Sustainability



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