www.wendtindia.com

WENDT

Precision

Stationary Diamond Dressers, PCD/PCBN Tools & Wear Parts

Wendt provides the comprehensive range of dressing solutions for truing and dressing applications. It manufactures a full line of custom built Stationary Diamond Dressers and Truing/Dressing Devices to meet all specific applications in General Engineering, Steel and other Industries.

Drawing from decades of grinding experience and closely interacting with its customers, Wendt developed a range of precision Diamond Dressers, PCD/PCBN Tools and Wear Parts to help industries keep pace with higher quality requirements for grinding and dressing.

Stationary Diamond Dressing Tools

Conventional grinding wheels have to be dressed regularly to maintain their true form along with free cutting. Industries follow different techniques that range from manual dressing on a bench grinder to profile truing on an automatic grinder. In all the techniques, the principle is the same - dull grains to be removed and new, sharp grains to be exposed.

Natural Diamond Point Dresser being the hardest, is ideal for such applications.

Types of Stationary Dressing Tools

There are varieties of dressers available based on the application, such as…

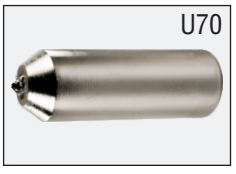
Single Point Dressers (U70)- for dressing straight grinding wheels and simple profiles

Chisel and Cone Profile Dressers (U71) - for angle, radius and intricate profile dressing

Multi Point and Impregnated/ Cluster Dressers (U72) - for dressing of large cylindrical OD wheels, surface grinding wheels and center less grinding wheels - can take high traverse feed rate

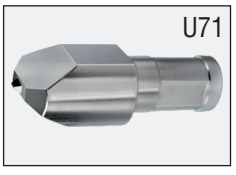
Blade Type Dressers (U74)- for dressing of straight and profile dressing

Single Point Dressers (U70)



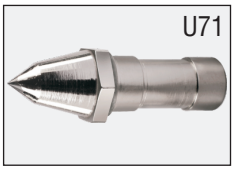
These dressers are used for OD and/or Side Dressing of conventional wheels. They can be used on Cylindrical Grinders, Bore Grinders, Surface Grinders, Tool & Cutters and Large Profile Wheels. They help in generating Male or Female profiles on Wheels and removing existing profiles (Random Dressing). They also prepare the wheel for a fresh form.

Chisel Type Dressers (U71)



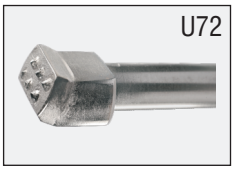
These dressers are manufactured using special shaped diamonds, with included angles ranging from 35º to 70º and a minimum radius of 0.08mm to 1.0mm. They can be used on conventional wheels for profile generation (male or female), step forming, and retaining sharp corners (female on wheel) with a programming system or with template (copying). They are suitable for use on Thread Grinders, Special Purpose Grinders, Internal Grinders, Optical Profile Grinders, Angular Grinders and Cylindrical Grinders.

Cone Type Dressers (U71)



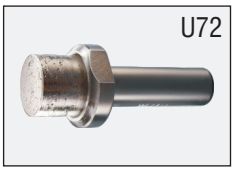
These dressers are manufactured from special shaped diamonds with included cone angle ranging from 60º to 85º and nose radius ranging from 0.1mm to 2.0mm. They are ideal for consistent dressing because of their cone shape. They can also be used for OD, side and angle dressing applications.

Multi Point Diamond Dressers (U72)



These are used to dress large diameter conventional wheels. These can also be used for lengthy, straight, side and angle dressing applications. They are ideal for applications that require good, consistent, surface finish and frequent dressing cycles.

Impregnated Dressers (U72)



These are produced from special diamond grits. Bonding system holds the grit firm. They are offered in Cylindrical, Cube and Rectangular shapes with different grit sizes and concentrations. These can be used in applications that require longer life, frequent dressing cycles and consistent surface finish. They are ideal for use on large diameter Center Less Grinders that require lengthy dressing cycles.

Blade Type Dressers (U74)

These dressers are produced from Special Needle Diamonds held firm by a bonding system that is arranged in a pattern. They are ideal for applications that require consistent surface finish and longer life. These can also be used for Profile Generation (male or female), Side, Angular and OD Straight dressing.

General Recommendations

Tool Type		U70	U71	U72	U74
Machine Operation					
External grinding	- straight	X		XX	XXX
External grinding	- profile (angular)		X		XX
Internal grinding		X	XX		
Center-less grinding	- profile (plunging)		XXX		
	grinding wheel		X		XX
	regulating wheel		X		XX
Center-less grinding	- through feed			XXX	
	grinding wheel	X		XX	XXX
	regulating wheel			XX	
Tool room grinding		X			
Special grinding machines		X	XX	XX	
Surface grinding		X		X	XX

X - First preference XX - Second preference XXX - Third preference

Recommendation for users

Mount the tool with minimum overhang to avoid vibrations

Mount the diamond with 10º - 15º drag angle pointing towards direction of wheel travel

If used during grinding cycle, dress with generous coolant (diamonds are sensitive to thermal shocks)

Never traverse grinding wheel without any diamond in-feed. Avoid giving any in-feed during return stroke.

For high surface finishes, use fine in-feeds and slower traverse speeds

Dressing Parameters

Dresser Type	U70	U71	U72	U74
In-feed (mm)	0.01 to 0.03	0.01 to 0.05	0.01 to 0.03	0.01 to 0.03
Traverse (mm / rev)	0.03 to 0.15	0.30 to 0.50	0.10 to 0.50	0.05 to 0.50

Selection of Diamond

Tool Type	Diamond Carat
Single Point	0.1, 0.15, 0.35, 0.5, 0.75, 1.0, 1.25, 1.5, 2.0 …up to 6
Chisel & Conical Type	0.5, 0.75, 1.0 and 1.5
Blade/Multi Point/	Wendt recommends suitable application specific diamond carats

Mono-crystalline Diamond (MCD) Dressers

Wendt offers Single Point and Blade Type MCD Dressers (in 2, 3, 4 and 5 needles) for superior, quality dressing processes. These can be used on following machines for OD (Plain) dressing, angular dressing and wheel corner profile dressing.

Crankshaft grinders

Center-less grinders

Double Disc grinders

Internal grinders

Surface grinders

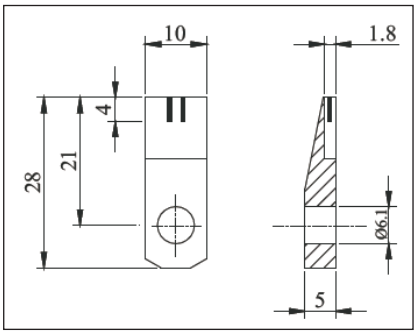
Tools & Cutter grinders

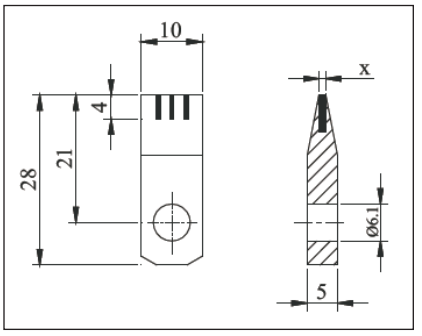
Advantages of MCD Dressers

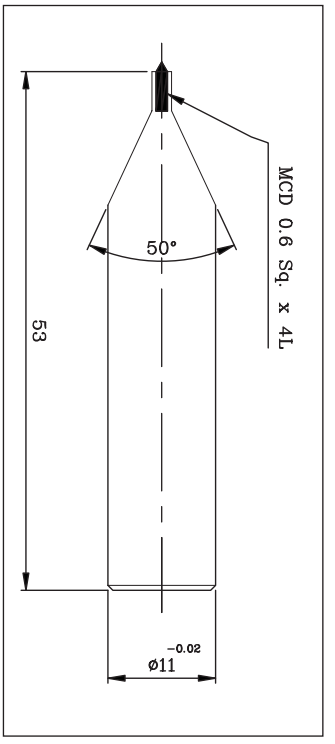
Consistent performance with uniform dressing quality

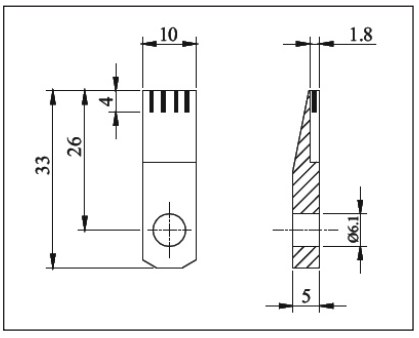
Higher Tool Life with consistent wear pattern

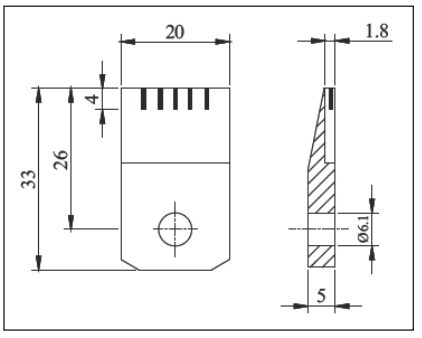
MCD Dressers Standard Design (U74)

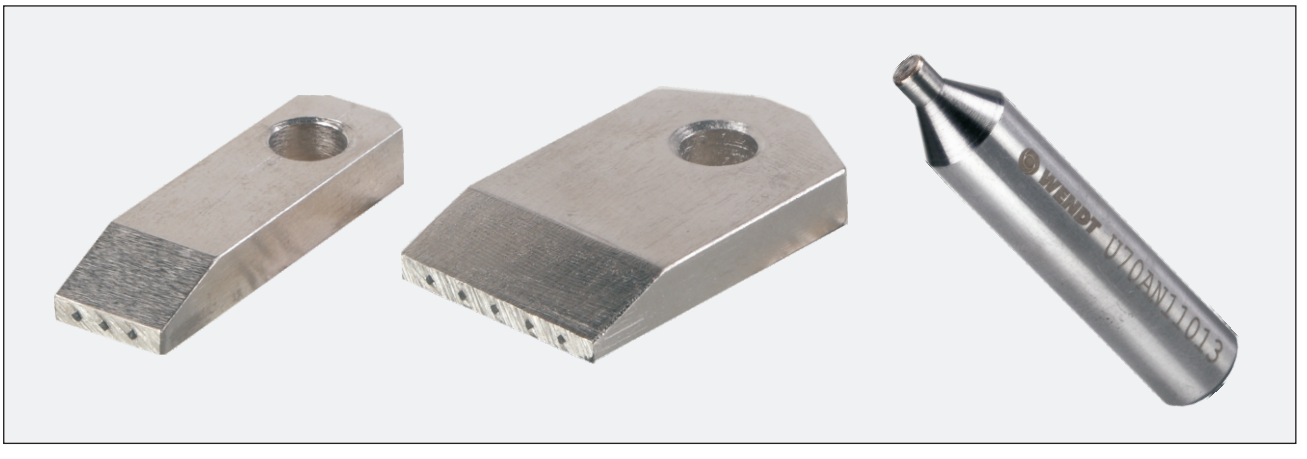












PCD (Poly Crystalline Diamond) Tools

PCD tools are made of super hard materials having high abrasion resistant property next only to natural diamonds and possess highest fracture toughness and strength. Various grades provide the toughest edges for the most difficult machining tasks. PCDs are available in various layers ranging from 0.5 mm to 1.5 mm on a carbide substrate.

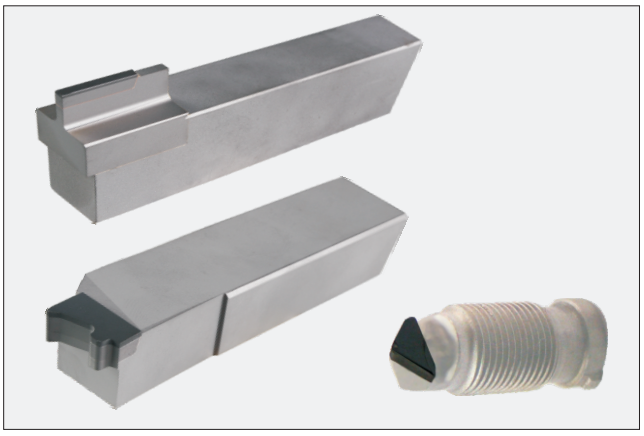
For cutting tool applications we offer PCD tools in fine to medium grain PCDs of 0.5 μm to 5.0 μm.

Operating Parameters for PCD Tools

PCD tools are recommended to machine non-ferrous and very abrasive materials. Life and cutting efficiency of PCD tools is many times more than carbide tools. They can withstand higher cutting speeds and feed rates. Wendt also custom engineers sizes and styles to meet specific applications.

Wendt offers a range of Cutting Tools and Inserts with PCD tipped sections. These are ideal for Turning, Boring and Grooving applications.

PCD Tools are also offered for Groove Notch Milling of Carbide Dies in Steel Plants for Thermo Mechanically Treated (TMT) Reinforced Steel Rrebars of various sizes.



Applications of PCD Tools

Metallic materials: Aluminium, Brass, Bronze, Copper, Magnesium, Zinc Alloys, Cobalt, Sintered Carbide, etc.

Non-metallic materials: Carbon, Graphite, Hard Rubber, Wood Products, Pre-sintered Ceramics etc.

Plastic materials: Poly Carbonates, PVC Composites, Acrylic, Nylon Composites, Teflon Composites, Phenolic, Fiber Glass Epoxy, etc.

PCBN (Poly Crystalline Cubic Boron Nitride) Cutting Tools

Hardness of PCBN is lower than natural diamond but much higher than carbide

PCBN is more abrasion resistant than both Carbide and Ceramic Cutting Tools

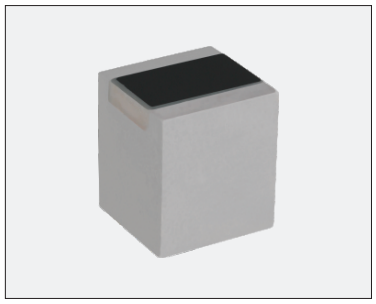
Toughness and hardness properties of PCBN make it ideal for machining ferrous materials such as hardened steel, cast iron and super alloys

Brazed tipped PCBN Tools and Inserts are offered in several grades based on application needs

Solid Inserts with PCBN. They are available in various layers ranging from 0.5mm to 1.5mm on a carbide substrate for Turning, Boring, Grooving, etc.

Operating Parameters for PCBN Tools

Cutting Speed m/min	Feed Rate mm/rev	Depth of cut mm
50 to 1000	0.05 to 0.3	0.015 to 2

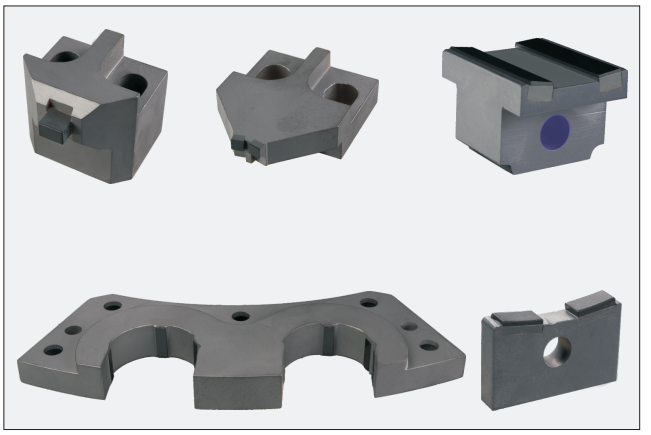


PCD Wear Parts

PCD Wear Parts are known for Low Friction Co-efficiency, Ultra Hardness and Superior Wear Resistance. These properties ensure high component accuracies throughout its life span. The life span of such Wear Parts (Work Rest) is much higher compared to carbide (Depending upon the grade chosen). Wear Parts are offered with medium to coarse grains (ranging from 10μm to 35 μm).

Advantages of PCD Wear Parts (compared to carbide)

- Reduced cost per component
- Reduced down time
- Reduced change over time
- Enhanced component accuracies

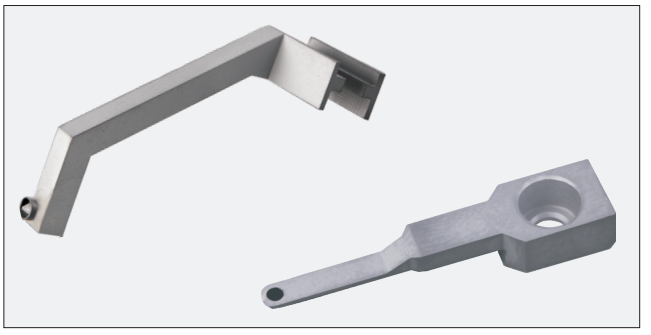


Types of Wear Parts

- Vee supports
- Support pads
- Gauging points and fingers
- Stoppers

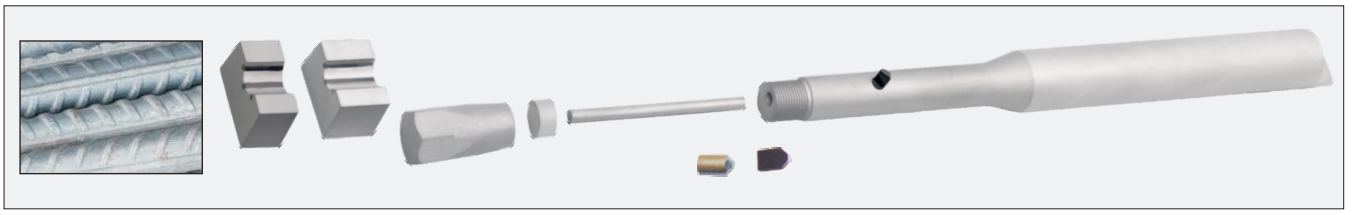
Gauging Points and Fingers

Diamonds tipped gauging fingers are used for measuring diameters on in-process measuring equipment such as Marposs, etc



Notch Milling Tooling

Wendt offers precision Notch Milling Tooling with PCD bits for Notch Milling of tungsten carbide roll rings to manufacture TMT Rrebars of 8mm, 10mm, 12mm, 16mm and 20mm diameters. These tooling can used on various machines like Wencut - 403/405, Automat, Herkules, etc. Customized tooling can also be offered on request.



WENDT (INDIA) LTD.

69/70, Sipcot Industrial Complex, Hosur-635 126, Tamil Nadu.
Ph: +91-4344-276851, 276852, 276254, 405500, 405501.
Fax: +91-4344-405620, E-mail: wil@wendtindia.com

For more information contact:
E-mail: nagarajgb@wendtindia.com
venkateshms@wendtindia.com

Regional Offices:

● AURANGABAD ● BANGALORE ● BARODA ● BELGAUM ● CHENNAI ● COIMBATORE ● DELHI ● FARIDABAD ● HARIDWAR
● HOSUR ● HYDERABAD ● INDORE ● JAIPUR ● JAMSHEDPUR ● KOLKATA ● MUMBAI ● NAGPUR ● NASHIK ● PUNE

Visit us at www.wendtindia.com

DS/MKT/063 R0

WENDT/PCD/PCBN TOOLS/0415/1/SWE