

Natural Diamond Dies  
PCD Dies  
Mono Diamond Dies  
Solid Enamelling Dies  
Tc Taper inserts & Dies  
Die Polishing Equipment



**MIKROTEK**



An ISO 9001-2015  
Certified Company

# About us



Diamond Selection



**Trust,** Quality, Assured deliveries and right choice of diamond are the key factors which has made Mikrotek globally competitive.

Passionate as we are about precision, we use **genuine** diamonds and raw materials for manufacturing Natural Diamond, Mono and Polycrystalline Diamond dies.

Every order is **customised** starting from Diamond selection to the finished product to give performance meeting the customer expectations.

We practice **Lean sytems** as a way of life in improving our standards on a continuous basis through regular training programs for our team members.

Our **R&D** department is continuously working to meet the customer challenges and introduce new products to exceed the customer expectation.

Diamond Mounting



Laser Profiling



We undertake **projects** to improve the productivity of the wire drawing companies. Our technical team will visit the drawing plant, study the drawing conditions and historical data. Then we will discuss, make simple corrections and conduct trials to improve the overall efficiency of the drawing plant and not just the die life. Guaranteed results.  
Contact for details: [info@mikrotek.org](mailto:info@mikrotek.org)

US Grinding & Polishing



Sizing

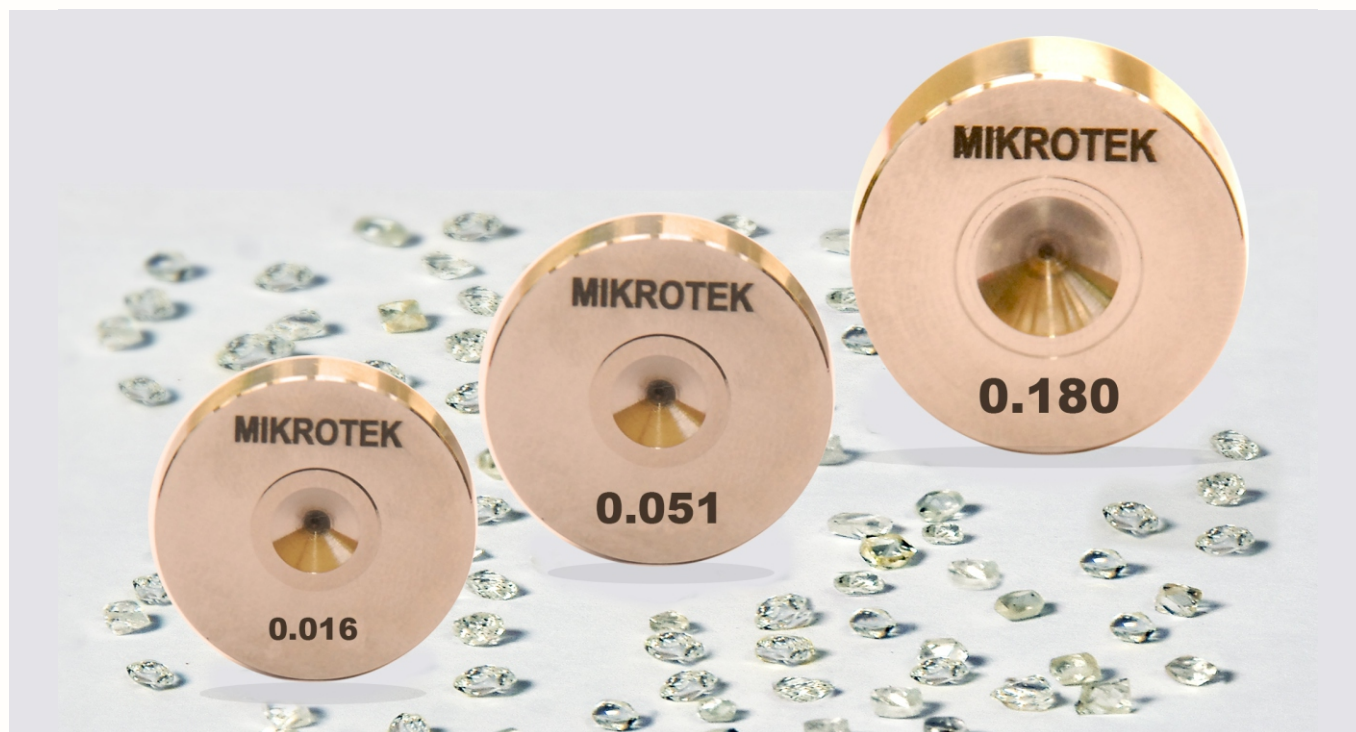


Inspection





# Natural Diamond Dies



We manufacture Natural diamond dies in the size range of 0.010–1.200 mm.

We use Kimberly Process certified rough diamond stones. Every diamond stone is individually inspected under polarised Microscope and only flawless Diamonds are selected.

The rough diamonds are flattened with respect to 111 plane orientation to give every die maximum strength to withstand rough & tough drawing conditions and maximum number of recuts.

Our Natural diamond dies are widely used for drawing superfine, fine & medium sizes of stainless steel, magnet wire, copper and aluminum conductors, EDM, Gold, Silver, Medical, low and high Carbon Steel wire, Tungsten, Molybdenum, coated and alloy wires etc. Our expertise in manufacturing ND die sets

for **high speed multiwire drawing machines** are widely accepted by our customers due to consistent die profiles with matched elongations ensuring accurate die size, good luster and shine to the drawn wire and longer die life.

Worldwide, we are a preferred supplier to most of the superfine size wire drawing companies due to top to bottom polished, concentric and look alike profiles.

We also supply **semi finished dies** for sizes below 0.050 mm. These dies are fully completed except final sizing allowing the customers to quickly finish the required tolerance.

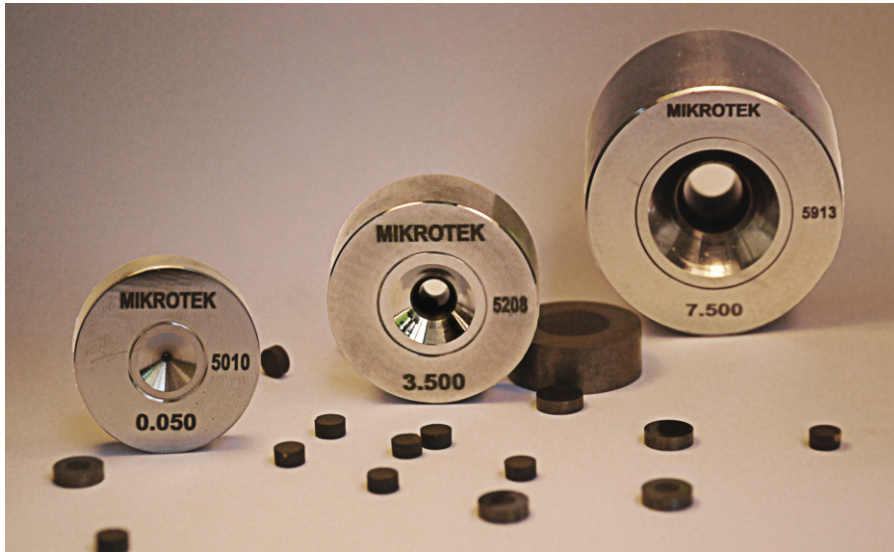
Multiwire drawing dies for copper cable and Schillerfrei Dies for stainless steel wire are our speciality

Try our Natural Diamond dies manufactured with "NANO technology" for Add-on benefit

# Polycrystalline Diamond dies



## Wire drawing, stranding & compacting dies



We manufacture Polycrystalline Diamond dies in the size range of 0.025–32 mm.

PCD blanks are available in 2 types - Self supported and Tungsten ring supported. Also different grain sizes of 1, 3, 5, 10, 25 & 50 microns are available.

The PCD blanks are directly sourced from well known manufacturers mainly M/s Sandvik Hyperion (Formerly Diamond Innovations / GE), M/s Sumitomo & SF diamonds etc.

Thermally stable PCD blanks are mounted upto a temperature of 1200°C and these blanks are well suited for hot wire drawing applications.

Our PCD dies are widely used for drawing wet and dry stainless steel, Medical, Low and High Carbon Steel, Welding wire, Copper & Aluminium conductors, magnet, EDM, Tungsten, molybdenum, coated and alloy wires etc. Right selection of PCD blank and profile ensures perfect compacting of conductors, good surface and long life.

Try our new innovation "SMP dies", a boon for hard & dry wire drawing industries

## Mono Diamond dies

We manufacture Mono Diamond dies in the size range of 0.015–1.2 mm.

These mono diamonds are man-made diamonds which are also called as Synthetic Single Crystal Diamond (SSCD).

Mono dies are manufactured by using the raw materials purchased from M/s Element Six & M/s Sumitomo.

Our Mono dies are widely used for drawing Stainless steel, Copper, Aluminium, EDM, Tungsten, Molybdenum, Medical, Gold, Silver and alloy wires etc.,



Ask for blank selection charts or can be downloaded from [www.mikrotek.in](http://www.mikrotek.in), [www.mikrotek.org](http://www.mikrotek.org)

Try our Mono Diamond dies manufactured with "NANO technology" for Add-on benefit



# SMP Drawing dies

*A new innovation in Wire drawing dies*



Ask for  
Free trial  
sample

## What is SMP drawing die?

- SMP stands for "Special Mikrotek PCD"
- A right choice of PCD is selected based on Material drawn, heat generated during drawing, surface finish required & speed of drawing.
- The profile is customized and repeated to give continuous benefit to the customer.

## Why SMP dies?

- Extended die life from new and every resize.
- More no of re-cuts beyond the recommended size of PCD manufacturers.
- Less or no development of cracks and premature breakages.
- Cost Effective as these are substituting costly TCS PCD dies.
- Good wire surface for many kilometres of drawing
- Retention of roundness for long time.
- Less down time of drawing machine.
- Good for both Wet & Dry drawing.
- Substitutes TC dies for Carbon Steel wires profitably.
- Can be comfortably used even under no repolishing conditions.

## What are the changes done to the historical die?

- Selection of PCD is based on application & to better customer expectations.
- Introduction of dual Reduction angle to improve the flow of lubrication in cases where required.
- The PCD & the re-enforcement is optimised to improve the heat transfer in order to increase the wear resistance.
- For most of the drawing applications, only self supported & fine grain PCD blanks are used, which are less expensive without losing any benefit of Tungsten Carbide Supported (TCS) blanks.

**Size Range: 0.025 - 2.5mm**

### Standard Grain sizes available

- 5, 10 & 25 $\mu$
- 1 & 3 $\mu$  grain sizes are coming soon

Even one advantage is more than enough to switch over to SMP dies

# Reconditioning & Repolishing Die Services

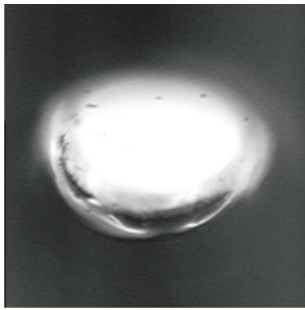


## Before Rework

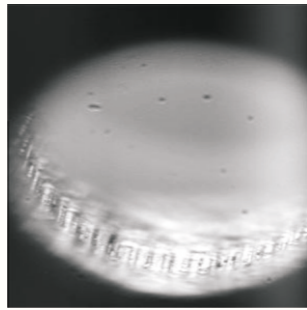


Trust the experts to give a new lease of life to your old dies & tools

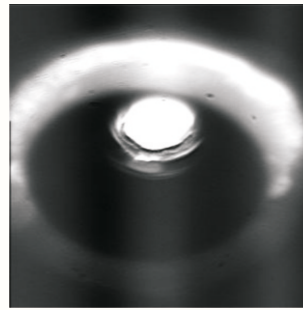
**What Happens?** The efficiency of the wire plant, wire surface, size & roundness of the wire is directly dependent on the condition of the string of dies. After many kilometers of wire drawing, a "wear ring" is formed at the contact point in the die profile. At this point, the dies need repolishing to retain the original die profile and roundness. Repolishing will bring back the die life, improves the wire surface finish, retains the size and reduces the wire breakages there by improving the productivity of the wire plant. When the wear ring is severe or the damage in the die profile is big and when the size is beyond tolerance, the dies are resized and re polished.



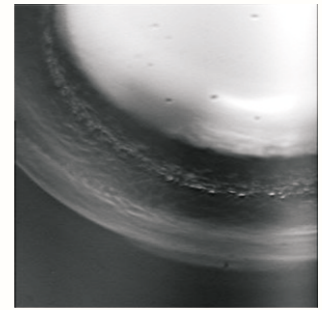
Pits at CP



Deep scratches



Deep wear-out



Wear ring

**What we do?** On receipt of the used dies at Mikrotek plant, our inspector checks each and every die for its present size and visually checks under microscope for wear pattern and its severeness and decides if the die qualifies for repolishing or it should be resized. The inspector prepares a report and sends it to the customer informing the condition of the die and asks for approval to repolish or requests the customer to issue 3 nearest sizes to resize. Upon customer approval, the dies are repolished or resized. If required, the entry face of the casing is cleaned and new size is marked.

**What you get!** At Mikrotek, every used die goes through the entire die working process including laser profiling if required and processed like a new die. As a result, our customers get highest advantage of Mikrotek resources, as every used die gets new life to give prolonged performance.

## After Rework



**For high volume customers  
we offer on-site service.**

Contact us for more details:  
[info@mikrotek.org](mailto:info@mikrotek.org)



## Solid Enameling dies with PCD insert



We manufacture Solid enameling dies with Diamond insert from 0.200 to 6.00 mm.

Perfect inner profile allows smooth and continuous flow of enamel on the copper wire and ensures uniform coating. Mikrotek offers standard and customised design in both Stainless Steel and Aluminum bodies.



## 4/6 Extrusion Tools

The Extruder die is made of solid carbide / Tool Steel / TC inserts in the size range from 0.4 to 6.00 mm. The extruder die is precisely ground and mirror polished to ensure free flow of insulation material.

The tip or wire guide is with Diamond / TC insert. Both internal and external dimensions are accurately ground. The hole is concentric within 5 microns for perfectly guiding the conductor to the center of the insulation.



### TC drawing, Compacting and Stranding dies



We manufacture Tungsten carbide dies from 0.2 to 30 mm.

Our strict quality control ensures right specified angles, bearing length and close tolerance on bore dimensions.

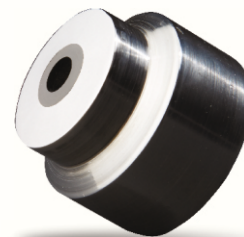
### TC Taper & Pressure insert



Mikrotek offers tapered TC inserts as per customer demand.

The right grade carbide and customised inner profile ensures smooth wire drawing with die life and wire surface.

### Shaving Die



Razor sharp Mikrotek shaving dies are well known for their long lasting performance and smooth surface finish.

The accurate shaving angle ensures smooth and shiny surface on copper and aluminum conductors.

# Diamond Die Working Equipment



Mikrotek offers entire range of die working equipment for in-house maintenance of dies at drawing plant. Our machines are simple and operator friendly. Our equipment are supplied with a set of spares and standard accessories which makes a package and ready to use.

We at Mikrotek, proudly inform that we have setup more than 750 die shops at customer place and trained more than 3000 technicians. **Probably the largest in the world.**

## Wire Polishing Machines

Our machines are designed and developed for Sizing and Polishing of Natural, Mono and Polycrystalline Diamond dies.

The machines are manufactured with precision engineering. High speeds, individual controls, wire tension adjustment and oscillation of dies makes these machines extremely versatile and user friendly.

Our range has various models for every need & application.



WPA 3S



WPAB 1S



WPA 2S



WPA 1S

S.No	Model	No. of Spindles	Type	Size Range
1.	WPA 1S / 2S / 3 S	one/two/three	Automatic	0.010 - 2.50 mm
2.	WPAB 1S	one	Automatic	0.100 - 10.00 mm

Note : SPM's Can be offered for super fine size on request



## Ultrasonic Die Polishing Machines



**USBNG 250 Box Type**



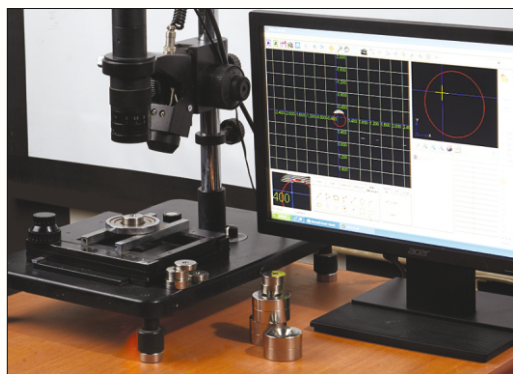
**USBNG 250 Open Type**

Our machines are designed and developed for working and polishing of conical portion of natural mono and polycrystalline Diamond Dies

The Ultrasonic Machines produces fine and continuous ultrasonic power and are user friendly. Mikrotek's range of Ultrasonic Machines has various models to suit every need and application.

S. No.	Model	Type	Size Range
1.	USBNG 250	Semi Automatic	0.100 to 2.500 mm
2.	USBNG 300	Semi Automatic	0.100 to 8.000 mm

## Digital Diameter Gauge



**Digital Diameter Gauge**

MDDG F: 0.005 - 1.0 mm

MDDG M: 0.100 - 4.0 mm

## Die Inspection Microscopes



**MTCM**  
5x/10x/25x



**MC 1.26**  
25x/50x/100x



**MXT**  
7-45x/180x

## Setup your own die factory

Mikrotek offers Turn-key project to set up complete manufacturing plant for Diamond Dies. The project include Technical know-how, plant and machinery, testing equipment, QA, training & Installation.  
Contact for Details : [info@mikrotek.org](mailto:info@mikrotek.org)

# Tungsten Carbide Die Working Equipment



Mikrotek's Tungsten Carbide Die Working equipment is an ideal solution for grinding and polishing of the TC Dies. Our equipment is effectively designed for working reduction angle and bearing portions.

**TC Die bearing and sizing m/c**



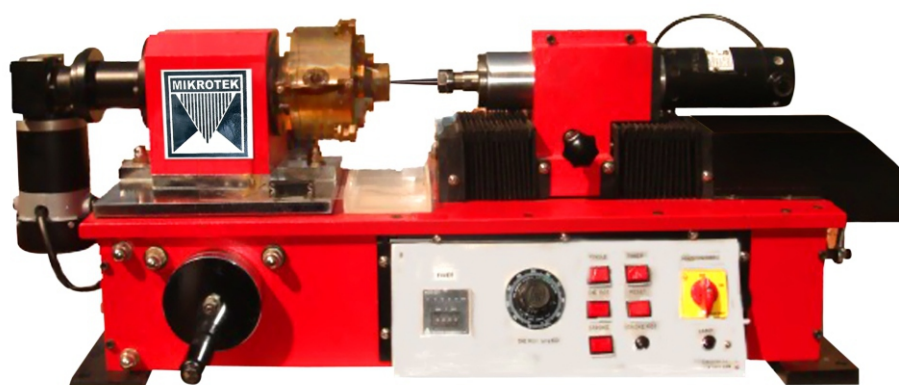
**MTCBRG 6**

**Vertical TC Die working m/c**



**MTCA10**

**Horizontal TC Die working m/c**



**MTCHA10/20**

**Needle Grinder**



**MTCG A**

**Hand Polish m/c**



**MTCPHP**

S.No.	Model	Type	Size Range
1.	MTC BRG 6	Vertical - Automatic	0.700 to 6.00 mm
2.	MTC A10	Vertical - Automatic	0.700 to 15.00 mm
3.	MTC HA 10/20	Horizontal - Automatic	1.00 to 10/20.00 mm
4.	MTCG A	Horizontal Grinder	3.00 to 10.00 mm
5.	MTC PHP	Pneumatic Polishing M/c	Up to 10 mm

Rod Puller

Laser gauges

US Cleaner

Soft Wood

Wire Puller



# One Stop Shop for Die Shops



Mikrotek offers every tool and consumable required for **Die Shops under one roof**. These products are time tested and ensures to give optimum results.

## Measuring Pin sets



Size Range : 0.200 - 14mm, steps of 5,10, 20 & 50 microns.  
Hardness : 58-62 hrc, Tol:  $\pm 1$ micron  
Length : 40 mm for <3mm, 50 mm for >3mm

## GHCS Pins/Calibrating pins



Size Range: 0.500 to 8 mm in steps of 10 microns  
Tolerance: +0 -3 microns  
Length : 80mm  
Standard packing: 50 pins / size  
Hardness: 55 to 60 HRC

## Diamond Powder



Diamond Powders are specially selected for sizing and polishing of natural, mono & polycrystalline Diamond Dies.  
Standard sizes: (0 - 1/4) to (40 - 60)  
Package: 50 & 100 cts bottles.

## Diamond Paste



Ideal for grinding and polishing of Tungsten Carbide Dies.  
Standard sizes: D1, D3, D7, D15, D30, D50 & D70.  
Package: 50/100 gms syringes

## Diamond Suspension



Diamond liquid is the ultimate solution for grinding and polishing of Tungsten Carbide Dies.  
Standard sizes: D1, D3, D7, D15, D30, D50 & D70.  
Package: 50/100 ml bottles.

## Diamond Plated angle pins



Sizes:  $\varnothing 6 \times 100 \times 6^\circ/8^\circ/10^\circ/12^\circ/14^\circ$   
Plating: Grit D120

Ask for  
Free evaluation  
sample

## Steel Conical Needles



Sizes:  $\varnothing 6$  &  $8 \times 100$  mm,  
Angles:  $12^\circ$ ,  $14^\circ$  &  $16^\circ$   
Packing: 100 nos. per pack.

Soldering paste

Ultrasonic Needles

Wax

Spare parts

Wires

Loupe



An Intelligent & Innovative Engineering Company



Quality Assurance

## Our International Contacts

### Germany

Contact: **Dieter Burk**  
Ph: +49 2776 1641  
Email: dieterburk@t-online.de

### France & Italy

Contact: **Phillipe Jullien**  
Ph: +33 668980020  
Email: jullien@ipefrance.net

### Turkey

Contact: **Tunc Senel**  
Ph: +90 216 3801832  
Email: tunc@atlas.net.tr



## Mikrotek Machines Limited

No.16, 2nd Cross, 'A' Sector, Amruthnagar Main Road  
Bangalore - 560 092, Karnataka State, INDIA  
Tel: +91 80 42688999 (30 lines)  
E-mail: info@mikrotek.org Web: www.mikrotek.in,