



Walson Woodburn™

Durability Refined. Performance Proven.

**Polycrystalline Diamond
Wire Drawing Die**

An Indo-American Joint Venture.



*Precision has no borders.
Neither do we.*

About Walson Woodburn Die

CRAFTING PRECISION, BUILDING TRUST

Located in the Diamond capital of the world, Walson Woodburn is an Indo–American joint venture between Walson (India) and Woodburn (USA) - a partnership built on over sixty years of combined expertise in precision engineering.

Since 1970, we've shaped a reputation for uncompromising quality, consistency, and performance - making us a trusted name among leading wire and cable manufacturers worldwide.

Every die we craft begins with a deep understanding of our customer's process and ends with flawless performance - delivering results you can measure, and reliability you can feel.

Polycrystalline Diamond Wire Drawing Die

PRECISION. DURABILITY. PERFORMANCE.

Founded in 1997, *Walson Woodburn Wire Die Pvt Ltd* brings decades of combined Indo-American expertise, delivering dies that set the benchmark for precision, performance, and longevity in wire drawing.

PCD dies are drawing dies whose bearing (or die hole) surfaces are fabricated from polycrystalline diamond (PCD) a synthetic, highly wear-resistant composite of diamond particles bonded together under high pressure. The PCD surface offers very high hardness, excellent wear resistance, low friction, and uniform (isotropic) behavior in all directions. Additionally, it provides stability under long continuous runs and is resistant to fracture when properly designed.







PCD dies are optimized for extended, high-abrasion service environments — especially when throughput, replacement cost, and downtime are critical.



Size Ranges, Reductions & Tolerances

PARAMETER

SPECIFICATION

 Hole Size	From as small as 0.010 mm (ultra-fine) up to 2.0 mm (standard range); custom sizes available.
 Tolerance	Extremely tight tolerances achievable (< 0.5 microns in many cases).
 Materials	Copper, aluminum, steel, stainless steel, welding wires, special alloys, tungsten, molybdenum, tantalum.
 Surface Finish	Mirror-polished drawing zones with application-suited blending of bearing length.
 Grain Sizes	Multiple PCD grain size options (e.g. coarse, medium, fine) to balance wear vs surface finish.
 Entry / Exit Geometry	Conical entry, back taper, for better lubrication.

Specification & Tolerances of Natural Diamond Die

METRIC TABLE.

Size Range (mm)	Total Tolerance (mm)	Ovality Tolerance (mm)	Casing Dimensions (mm)
0.025 - 0.075	0.0005	0.0002	25 or 28 × 8
0.0751 - 0.300	0.001	0.0005	25 or 28 × 10
0.3001 - 0.750	0.002	0.001	25 or 28 × 10
0.7501 - 2.000	0.003	0.001	25 or 28 × 12
2.0001 - 3.000	0.004	0.002	25 or 28 × 15
3.001 - 5.000	0.004	0.002	43 × 28 or 53 × 35
5.001 - 7.000	0.006	0.006	43 × 28 or 53 × 35
7mm & Larger	0.010	0.010	43 × 28 or 53 × 35

Size Range (in)	Total Tolerance (in)	Ovality Tolerance (in)	Casing Dimensions (in)
.001 - .003	.00002	.00008	1 or 1.125 × .312
.00031 - .0118	.00004	.00002	1 or 1.125 × .375
.01181 - .0291	.00008	.00002	1 or 1.125 × .375
.02911 - .0787	.00012	.00004	1 or 1.125 × .500
.07871 - .1181	.00016	.00008	1 or 1.125 × .625
.11811 - .1968	.00016	.00008	1.5 × .875 or 2" × 1.378
.19681 - .2756	.00024	.00012	1.5 × .875 or 2" × 1.378
.27561 & Larger	.0004	.0002	1.5 × .875 or 2" × 1.378

Note: We also supply dies as per customer's required Tolerance & Casing Size.

Advantages / Key Benefits

Longer Die Life

PCD dies last significantly longer than tungsten carbide or coated dies in high-abrasion.

Stable Wire Roundness

Even as the die wears, wire geometry remains consistent, reducing scrap.

Low Friction & Smooth Flow

Highly polished PCD surfaces result in lower drawing forces and improved surface finish.

Predictable Wear Behavior

Wear progression is uniform and controlled, simplifying maintenance scheduling.

Customizability

Grain size, cutting geometry, entry/exit radius, and tolerances can be tailored per application.

Suitability for Wet or Dry Drawing

Dies engineered for both wet lubrication and dry drawing environments.

Wide Size & Tolerance Range

From ultra-fine to medium or even larger diameters, we support a broad spectrum of wire sizes.

Performance / Metrics / Success Scenarios

Long uninterrupted runs of copper or aluminum wire

Drawing high-strength or abrasive alloys where conventional dies fail prematurely

High-volume welding wire plants aiming to reduce change-over frequency

Specialty wire producers (medical, superalloys) demanding tight tolerances and ultra-smooth finishes

Projects where die reliability, predictability and lower maintenance are strategic advantages

WHY CHOOSE WALSON WOODBURN?

Decades of Expertise

Deep experience in wire drawing die manufacturing.

Precision Engineering

Dies with high durability and dimensional accuracy.

Ethical & Sustainable

Diamonds sourced responsibly in line with international standards.

Trusted Worldwide

Reliably serving wire manufacturers across the globe.

Customer-Focused

Solutions tailored to production requirements for maximum efficiency.

SURAT ADVANTAGE

Global Diamond Hub

Surat produces and trades the majority of the world's polished diamonds, giving us direct access to top-grade natural diamonds.

Proximity to Raw Materials

Being at the source allows us to carefully select the highest-quality diamonds for our dies.

Faster Innovation & Supply

Local access enables rapid prototyping, customization, and high-volume production while maintaining consistent quality.

Strategic Advantage

Our location ensures unmatched control over sourcing, selection, and processing, producing dies with superior hardness and long life.

Quality Control

Advanced machining, inspection (3D profile, optical metrology) ensure dies meet or exceed customer expectations.

Matched elongation set certification ensuring consistent performance across die sequences.

Industry Impact

PCD dies are essential for industries where wire quality, minimal downtime, and high throughput are critical competitive factors.

Applications

Electrical & Telecom

Copper, aluminum, alloy conductors, telecom wire — long runs, tight tolerances, minimal scrap.

Automotive / EV wiring

High-strength copper/alloy wires, grounding wires — demanding mechanical/thermal performance.

Welding / Brazing Wires

Steel, stainless, alloy wires — abrasive materials, continuous draw needs.

Tire Cord & Reinforcing Wires

High-strength steel wires — very high abrasion, long runs.

Specialty / Medical

Nickel, titanium, specialty alloys — strict surface finish, geometry, repeatability.

Saw Wire / Diamond Wire

Tungsten, high-hardness wire — ultra-fine or wear-intensive drawing.

Services Offered


Care for WDD


Stereo Zoom Die inspection

Ultrasonic Die Cleaning


Craft your perfect Die

How to Order

 Casing Dimensions

 Hole Size (mm or inches)


 Hole Size Tolerance

 Wire Material Drawn

 Blank Number / Nib Size

 Reduction Angle

 Bearing Length

 Input Wire



Walson Woodburn™

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