



Walson Woodburn™

Crafting Precision. Building Trust.

**Tungsten Carbide Wire
Drawing Die**

An Indo-American Joint Venture.



The background features a complex network of thin, glowing lines in shades of orange and red, connecting various nodes. The overall color palette transitions from a dark, almost black top to a deep, rich red at the bottom. The text is positioned in the upper left quadrant, rendered in a light blue, italicized serif font.

*Wire the World with
Precision & Perfection.*

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.

Tungsten Carbide 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.

At *Walson Woodburn Wire Die Pvt Ltd*, we delivered world-class tungsten carbide (TC) drawing dies. These dies form a core component of your wire drawing line converting rods or wires of larger diameters into final sizes with high precision, consistency, and uptime.

Tungsten carbide offers an excellent balance of performance, durability, and value especially for ferrous and mid-to-large wire applications.



WALSON

3.000

WALSON

9.500

WALSON

8.500

WALSON

1.200

Design Considerations

To get the maximum value from tungsten carbide drawing dies, several design and operational factors must be taken into account

Die geometry optimization

Entry radius, approach and bearing lengths, back relief, and exit angle must be balanced to minimize drawing force while avoiding wire surging, vibration, or die fatigue.

Lubrication / Cooling System

Adequate lubrication (wet drawing, coated wire, or solid lubrication) helps reduce friction and die wear. Good cooling mechanisms help manage heat at the die-wire interface.

Material matching & grade selection

The carbide grade (grain size, cobalt binder percentage, additives) should be selected based on the wire material (steel, alloy, etc.), reduction ratio, speed, and abrasive potential of the drawn metal.

Design Considerations

Surface finish & polishing

A smooth, mirror polish inside the die bore helps reduce friction, adhesion, and local heating, extending die life.

Alignment, cleanliness & string-up control

Ensuring precise alignment of dies and clean, burr-free wire entry helps prevent localized damage to the die bore surface or edges.

Recutting / rebuilding strategy

When a die begins to wear, some of the carbide bore can be reworked — cleaned, reground, and repolished — if the material allows. This extends effective life.

Monitoring & scheduled maintenance

Monitoring drawing force trends, wire surface quality, and dimension drift allows timely die replacement or maintenance before catastrophic failure.

Size Ranges, Reductions & Tolerances

PARAMETER

SPECIFICATION



Hole Size

As small as 0.150 mm up to large rod or wire sizes
50 mm or more



Surface Finish

Mirror polish with smooth wire entry zones.



Casing Sizes

Customizable to fit existing die holder systems.



Die Geometry
Elements

Bell radius, Entry angle / approach angle, Bearing length,
Back relief, Exit chamfer / back taper.

Advantages / Key Benefits

High Hardness & Wear Resistance

Tungsten carbide achieves high hardness, resisting abrasive wear, scoring, and surface degradation over extended use.

Corrosion & Chemical Resistance

TC dies resist corrosive or chemically aggressive conditions better than steel dies.

Fair Thermal Conductivity & Stability

TC's thermal properties help dissipate friction-generated heat, maintaining dimensional stability.

Polishability & Smooth Die Finish

A well-polished die bore reduces friction and adhesion, extending die life. TC dies are delivered with mirror polish and smooth wire entry zones to optimise performance.

Advantages / Key Benefits

Rapid Turnaround / Trial Suitability

TC dies are quicker to deliver, making them ideal for short runs and pilot production.

Uniform Wear Behavior

TC dies wear fairly uniformly, maintaining roundness and minimizing dimensional drift.

Relatively Lower Cost vs Diamond/PCD Options

TC dies offer good life at lower upfront cost, especially important for larger diameters.

Wide Size & Casing Flexibility

TC dies are offered from 0.150 mm up to 50 mm bore diameter.

Performance / Metrics / Success Scenarios

Maintains high hardness and wear resistance throughout service life.

Enables consistent wire geometry over extended draw lengths.

Supports efficient drawing with properly optimized die geometry (entry angles, bearing, relief, exit).

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

Dies are delivered with high polish and stringent bore tolerances. Consistent quality optimizes die life and drawing stability.

Industry Impact

TC wire drawing dies are used across diverse industries, enabling reliable and cost-effective wire production for ferrous and select nonferrous applications.

Applications

Steel wire / ferrous wire production (carbon steel, alloy wire, wire rod breakdown, tire cord)

Welding wire / consumables

Fastener and small parts wire (screws, bolts, nails, pins, springs)

Cable, wire rope, strand, and conductor wires

Construction & pre-stressing / PC strand

Special alloys or non-ferrous wires

Short runs, pilot lines & trial production

Services Offered

Care for WDD

Stereo Zoom Die inspection

Ultrasonic Die Cleaning

Certification





Walson Woodburn™

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