



**Walson Woodburn™**

# Designed for Perfection. Built for Performance.

**Enameling Die**

An Indo-American Joint Venture.



*More Than a Supplier.  
Your Solutions Partner.*

# 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.

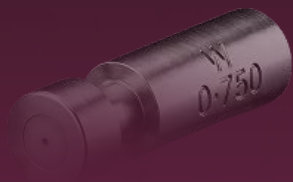
# Enameling Die

## 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.

Walson Woodburn is pleased to offer a full range of solid enameling dies (also called enamel coating dies or enameling/calibrating dies) for the magnet-wire / enameled wire industry.

Enameling dies are precision tools through which bare conductor (copper, aluminum, or copper alloy) is passed while being coated with enamel (insulation varnish). The die controls the thickness, uniformity, concentricity and flow of the enamel layer, wiping off excess enamel while ensuring a flawless, continuous insulating coat before the wire enters the curing oven.

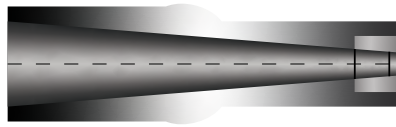


# Classification of Enamelling Dies

## Horizontal Enameling Die

are typically used in horizontal coating lines, where the conductor passes through a bath and over die horizontally.

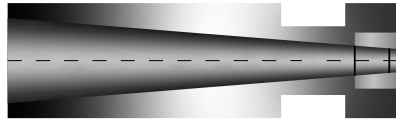
Size Range	0.100 mm to 2.000 mm
Type of inserts	TC, PCD and Natural Diamond
Body material	Stainless Steel and Brass
Marking	Solvent proof pin marking for easy readability.



## Vertical Enameling Die

are used in vertical or plunge-type coating setups, where the conductor is drawn vertically through the enamel bath and then through the die.

Size Range	0.300 mm to 6.000 mm
Type of inserts	TC, PCD and Natural Diamond
Body material	Stainless Steel and Aluminum
Marking	Solvent proof pin marking for easy readability.



*Note: Our dies are engineered to match either layout, with geometry and mounting adapted accordingly.*

## Size Ranges, Reductions & Tolerances

### PARAMETER

### SPECIFICATION



#### Hole Size

#### **Tungsten Carbide-based designs**

from about 0.20 mm up to around 5.00 mm (or more, per custom requirement)

#### **Polycrystalline/Diamond-based versions**

often effective in finer ranges (e.g. 0.05 mm up to ~6 mm)



#### Surface Finish

Mirror-polished to minimize friction and defects.



#### Custom Sizes

Beyond standard ranges possible on request, subject to feasibility.

*Note: These are typical reference ranges seen in the industry. We at Walson Woodburn will confirm exact feasible ranges after evaluating your wire material, enamel, and operating parameters.*

## Advantages / Key Benefits

### **Superior Coating Quality & Electrical Integrity**

Optimized internal geometry ensures uniform flow and consistent enamel thickness over full wire length.

Mirror-polished bore surfaces minimize friction, turbulence, and defects such as pinholes or blisters.

Excellent concentricity keeps the wire centered in the insulation, reducing dielectric weakness.

### **Longer Service Life & Lower Total Cost**

Superhard inserts (PCD / natural diamond) combined with robust body metals lead to longer die life.

### **Flexibility in Design & Compatibility**

Dies with TC, PCD, or natural diamond inserts, depending on application, wire material, speed, and budget.

### **Full Range of Types & Configurations**

Both horizontal and vertical enameling dies offered.

### **Technical Support & After-Sales Services**

Collaboration in selecting right insert material, bore geometry, and body design.

## Performance / Metrics / Success Scenarios

### Insert Material Options & Performance Trade-offs

#### **Tungsten Carbide (TC)**

Lower initial cost, good wear resistance. Suitable for moderate-speed runs with less abrasive fillers.

#### **PCD (Polycrystalline Diamond)**

Very long life, excellent surface finish, high-speed capability. Best for high-volume or critical magnet wire applications.

#### **Natural Diamond**

Ultimate hardness and surface quality in demanding runs. Used where maximum life and premium performance are needed.

PCD or natural diamond inserts often outlast carbide by multiple times under the same operating conditions.

## 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

Optimized internal geometry ensures uniform enamel flow and consistent thickness. Mirror-polished surfaces minimize defects and ensure excellent electrical integrity.

## Industry Impact

Enameling dies are critical in achieving high insulation quality, smooth surfaces, and minimal defects in magnet wire production.

## Application

Magnet wire / enameled wire production

Fine conductors for electrical and electronics applications

High-speed enameling lines

Horizontal and vertical coating setups

## Services Offered

Care for WDD

Stereo Zoom Die inspection

Ultrasonic Die Cleaning

# Craft your perfect Die

## How to Order

### Horizontal Enameling Die

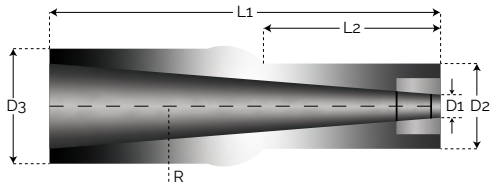
Dimensions are in **mm** or **inches**

Die size / Hole size **D1**

Measured value of **D2** and **D3**

Measured value of **R**

Measured value of **L1** and **L2**



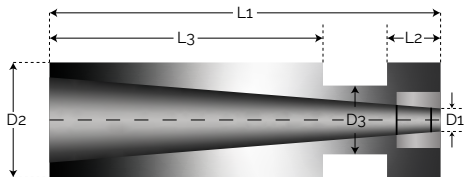
### Vertical Enameling Die

Dimensions are in **mm** or **inches**

Die size / Hole size **D1**

Measured value of **D2** and **D3**

Measured value of **L1**, **L2** and **L3**



*Note: Please see the drawings for reference and fill in the dimensions and email to us.*





**Walson Woodburn™**

[www.walsonwoodburn.com](http://www.walsonwoodburn.com)

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