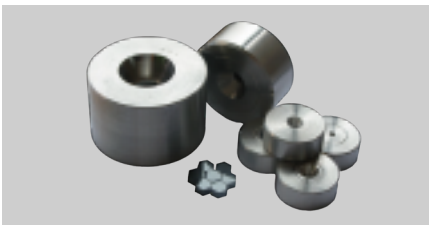
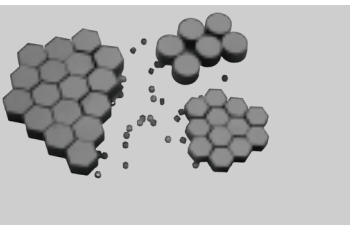
Langfang Feite Superhard Materials Co., Ltd.

Diamond Wire Drawing Die Blank





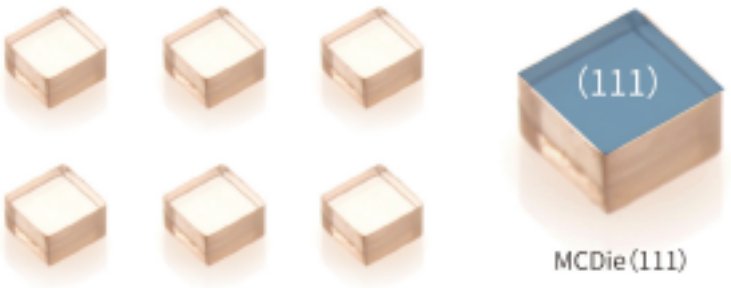
Company Profile

Langfang Feite Superhard Materials Co., Ltd. is located in Chaobaihe Industrial Park,Dachang, Langfang City, Hebei Province,China.It is a high-tech enterprise integrating the research and development, production, sales and service of superhard materials, processing and processing equipment. The company has modern workshops and hundreds of advanced processing equipment and inspection equipment, and the main products include superhard materials and tools such as CVD, PCD, PCBN, single crystal, wire drawing blanks, PCD/PCBN cutting tools, processing products, CVD, PCD superhard material processing equipment, etc.

This company mainly engaged in the processing of diamond wire drawing die blanks, diamond CNC tools, CVD diamond, PCD, PCBN and other composite super-hard materials and their products, diamond processing equipment, etc.

DIRECTORY

Single Crystal CVD Diamond Wire Drawing Die Blank



➤ Product Description

Wires manufactured through high precision wire drawing process are widely used in various fields from electronics to aerospace.Single crystal diamond is the preferred wire drawing material for wire drawing applications of non-ferrous, ferrous, precious and refractory metals that require ultra-fine processing. Feite MCDie (111) can effectively eliminate the unpredictability in wire drawing applications and empower high-quality wire drawing manufacturing.

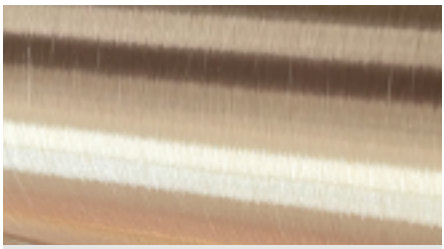
Features	- High Hardness - Excellent Wear Resistance - High Thermal Stability and High Thermal Conductivity - Low Coefficient of Friction - High Resistance to Adhesion and Corrosion
Advantages	- Due to its (111) crystal orientation characteristics, it can reduce hole wear and deformation, thereby obtaining longer life of the die - High Finish Drawing Surface - High Level of Product Quality Consistency

➤ Recommended Applications

The MCDie (111) drawing die blank is suitable for cold drawing and hot drawing of various metal wires, with high drawing finish and long service life. Each diamond single crystal blank is produced through a strictly controlled process to ensure a high level of wire drawing blank quality and consistency. The material's exceptional wear resistance due to its (111) crystalline orientation, combined with excellent thermal conductivity and thermal stability up to 1100°C in a non-oxidizing environment, enables end users to achieve stable tool life and high quality drawing surface.

Application Scenario Display

Tungsten Wire (Diamond Wire Busbar)



High Carbon Steel Wire (Diamond Wire Busbar)

0.08mm Diamond Wire

Optical Fiber

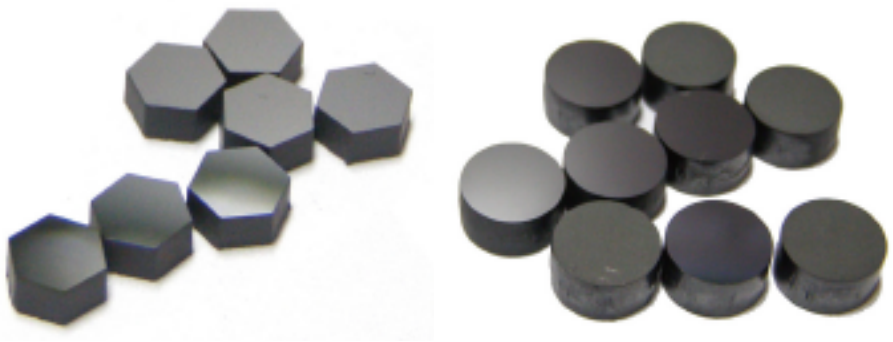
Non-ferrous Metal Wire

Single Crystal Wire Drawing Die

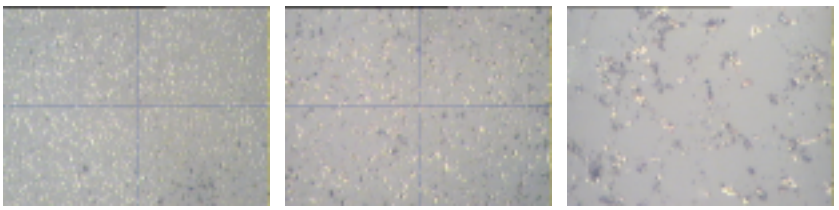
➤ Product Specifications

Product Name	Inscribed Circle Diameter D(mm)	Thickness(mm)	Recommended Diameter of Wire Drawing Die Blank (mm)	Shape
S1205	1.2	0.5	0.015-0.10	
S1206	1.2	0.6	0.03-0.15	
S1307	1.3	0.7	0.10-0.20	D
S1308	1.3	0.8	0.15-0.25	
S1309	1.3	0.9	0.20-0.35	t
S1310	1.3	1.0	0.30-0.40	
S1510	1.5	1.0	0.30-0.40	
The above are standard specifications, other specifications can be customized by customers.				

CXD Wire Drawing Die Blank Microstructure of Various Particle Sizes



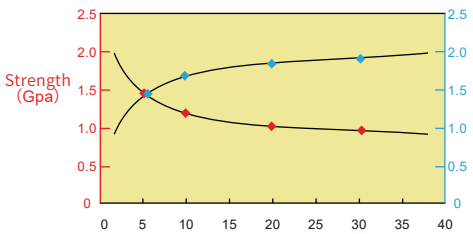
Diamond Particle Size Microstructure



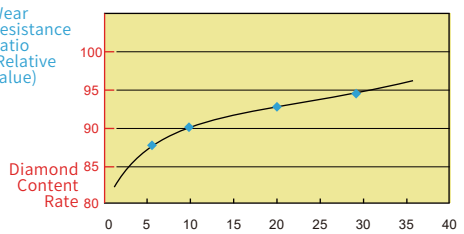
5 microns　　10 microns　　25 microns

Feite has die blanks with various particle sizes such as 5 microns, 10 microns, and 25 microns to meet customers' needs for various wire drawing surface effects and service life.

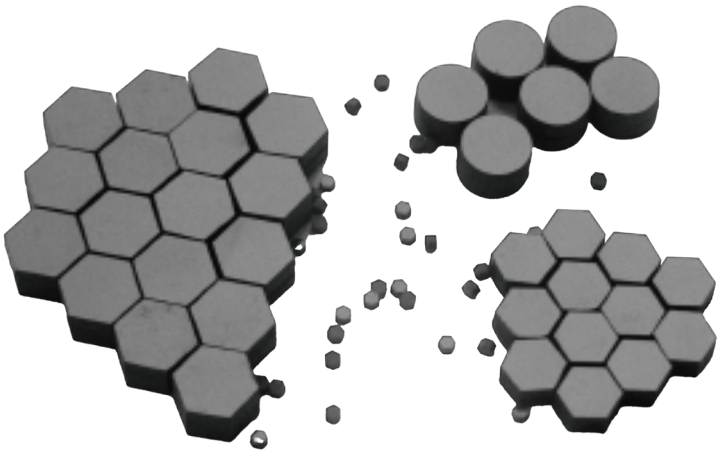
The Relationship between Particle Size and Mechanical Properties



The Relationship between Particle Size and Diamond Content



CXD-A Wire Drawing Die Blank



Applications:

CXD-A wire drawing die blank is a product launched by Feite for drawing soft wires. Suitable for drawing other non-ferrous metal wires such as copper, aluminum, copper-clad aluminum, magnesium alloy.

Features:

1. Temperature Resistance 650℃

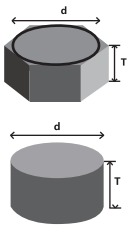
It can avoid diamond breakage caused by too high temperature of the insert or excessive temperature fluctuation;

2. High Finish

The diamond particles are dense and uniform, the crystal orientation is random and isotropic, and the wear is uniform. With its own patented polishing technology,the drawing surface finish is greatly improved.

3. Long Service Life

The unique diamond raw materials and advanced pressing technology of Feite enable the CXD-A wire drawing die blank to have a longer service life.

Model		Product Size		Maximum Recommended Aperture (mm)	Average Particle Size(μm)				Schematic Diagram
		Diamond Diameter d	Diamond Thickness T		5	10	20	30	
CXD-T Series: R (Round)/H (H ex agonal) W ire Drawing Die Without Outer Ring									
H/R2010	–	2.0	1.0	0.3	○	○	○	○	
H/R2510	D6	2.5	1.0	0.4	○	○	○	○	
H/R3215	D12	3.2	1.5	1.0	○	○	○	○	
H/R5225	D15	5.2	2.5	1.5	○	○	○	○	
H/R5235	D18	5.2	3.5	2.0	○	○	○	○	
H/R8040	D21	8.0	4.0	3.0	○	○	○	○	
R9853	D24	9.8	5.3	4.0	○	○	○	○	

CXD-TS Wire Drawing Die Blank With Ring

Applications:

CXD-TS wire drawing die blank is a product launched by Feite for large aperture and high-speed wire drawing.

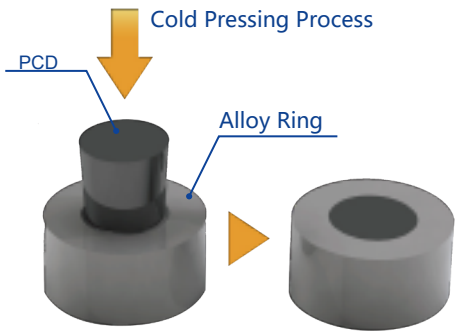
It is suitable for non-ferrous metals. It can be used for drawing soft wires by selecting different blank materials, such as copper, aluminum, copper-clad aluminum, etc.;

It can also be used for drawing hard wires such as (high carbon) steel, nickel, tungsten, molybdenum, stainless steel and other alloy wires.

Features:

1. Taper Design

The tapered design can effectively achieve closer contact between the alloy ring and PCD diamond, provide stronger support, and can withstand greater impact during wire drawing. At the same time, it is easy to distinguish the drawing entrance surface and the exit surface when inserting.



CXD-TS Wire Drawing Die Blank With Ring

2. Support "Cold" Insert

The large outer diameter of the alloy ring provides enough centripetal support for the PCD diamond, and there is no need to use powder for hot pressing and sintering when embedding the steel sleeve, and only the interference fit method is used to "cold" insert the sleeve, so as to avoid the damage of the diamond caused by excessive insert temperature.

3. Large Diameter Wire Drawing

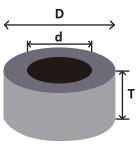
The blank with ring can provide stronger support for large aperture drawing.

4. A Variety of "Blank Materials"

The middle diamond blank material of CXD-TS ring wire drawing die blank can be selected from CXD-A diamond material according to the wire drawing material and processing requirements.

5. High-speed Wire Drawing

Combined with the alloy support of CXD-TS ring die blank and CXD-A, higher speed drawing can be achieved.

Model		Product Size			Maximum Recommended Aperture (mm)	Average Particle Size(μm)				Schematic Diagram
		Drawing Die Outer Diameter D	Diamond Diameter d	Diamond Thickness T		5	10	20	30	
CXD Series-TS: Carbide Outer Ring Wire Drawing Die (Round)										
R2015	D12-C	8.12	2.0	1.5	1.0	○	○	○	○	
R4015	D12	8.12	4.0	1.5	1.0	○	○	○	○	
R4023	D15	8.12	4.0	2.3	1.8	○	○	○	○	
R4029	D18	8.12	4.0	2.9	2.3	○	○	○	○	
R7040	D21	13.65	7.0	4.0	3.5	○	○	○	○	
R7053	D24	13.65	7.0	5.3	4.6	○	○	○	○	

CVD Diamond Wire Drawing Die Blank

The diamond wire drawing die blank produced by our company using the chemical vapor deposition method (CVD) , which has a polycrystalline diamond structure, without any binder, high purity, high hardness, and high wear resistance; at the same time, CVD diamond has very excellent properties, such as the thermal conductivity and thermal stability and it can withstand high temperature inserts, and improves drawing efficiency,which is an ideal wire drawing die.

Applications:

Suitable for drawing stainless steel, tungsten, molybdenum, copper, aluminum and other alloy wires.

Features:

1. High Wear Resistance

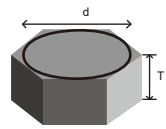
CVD diamond grains are arranged in disorder, have no brittle cleavage planes, and show isotropic characteristics, making CVD diamond with high wear resistance, the product has a longer service life.

2. High Thermal Conductivity

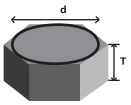
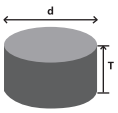
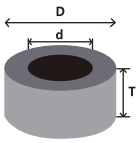
The thermal conductivity of CVD diamond is five times that of copper at room temperature, which can quickly absorb the heat generated during the inserting and drawing processes. The amount is dispersed to avoid damage to the diamond caused by excessive local temperature, thus greatly increasing the service life of the product.

3. Good Thermal Stability

CVD diamond has excellent thermal stability and oxidation resistance, and has good high temperature resistance during both inserting and wire drawing processes, meeting the needs for high temperature inserting and high-speed wire drawing.

Product Code	Product Size		Maximum Recommended Aperture (mm)	Schematic Diagram
	Diamond Diameter d	Diamond Thickness T		
H1207	1.2	0.7	0.08	
H1507	1.5	0.7	0.10	
H1508	1.5	0.8	0.12	
H1510	1.5	1.0	0.15	
H1808	1.8	0.8	0.18	
H2008	2.0	0.8	0.20	
H2010	2.0	1.0	0.28	
H2510	2.5	1.0	0.38	
H2512	2.5	1.2	0.47	
H3015	3.0	1.5	0.65	
H4020	4.0	2.0	0.95	

Drawing Die Blank Specifications

Product Code	Code Name	Product Size			Maximum Recommended Aperture (mm)	Average Particle Size(μm)				Schematic Diagram
		Drawing Die Outer Diameter D	Diamond Diameter d	Diamond Thickness T		5	10	20	30	
CXD Series-H: Drawing Die Without Outer Ring (Hexagonal)										
H2010	–	–	2.0	1.0	–	○	○	○	○	
H2510	D6	–	2.5	1.0	0.4	○	○	○	○	
H3215	D12	–	3.2	1.5	1.0	○	○	○	○	
H5225	D15	–	5.2	2.5	1.5	○	○	○	○	
H5235	D18	–	5.2	3.5	2.0	○	○	○	○	
H8040	D21	–	8.0	4.0	3.0	○	○	○	○	
CXD Series-R: Drawing Die Without Outer Ring (Round)										
R2010	–	–	2.0	1.0	–	○	○	○	○	
R2510	D6	–	2.5	1.0	0.4	○	○	○	○	
R3115	D12	–	3.1	1.5	1.0	○	○	○	○	
R5225	D15	–	5.2	2.5	1.5	○	○	○	○	
R5235	D18	–	5.2	3.5	2.0	○	○	○	○	
R8040	D21	–	8.0	4.0	3.0	○	○	○	○	
R9853	D24	–	9.8	5.3	4.0	○	○	○	○	
CXD Series-TS: Carbide Outer Ring Wire Drawing Die (Round)										
R2015	D12-C	8.12	2.0	1.5	1.0	○	○	○	○	
R4015	D12	8.12	4.0	1.5	1.0	○	○	○	○	
R4023	D15	8.12	4.0	2.3	1.8	○	○	○	○	
R4029	D18	8.12	4.0	2.9	2.3	○	○	○	○	
R7040	D21	13.65	7.0	4.0	3.5	○	○	○	○	
R7053	D24	13.65	7.0	5.3	4.6	○	○	○	○	

CXD	005	R	32	15
Product Series Such as: CXD	Granularity (μm)	Shape: R Rround H Hexagon	Diameter (mm)	Thickness (mm)

Notes:

1. In order to meet the special requirements of users from various industries from all over the world, Feite also provides diamond wire drawing die of other specifications on demand.If the size specifications you require are not among them, please let us know so that we can contact you in time.
2. ADDMA: American Diamond Wire Drawing Die Manufacturers Association
3. D: total die diameter d: diamond diameter T diamond thickness
4. The maximum recommended aperture is suitable for non-ferrous metal soft wires, and the diameter of hard wires cannot exceed 65% of the recommended aperture.

Feite

Langfang Feite Superhard Materials Co., Ltd.

Tel: PCD/PCBN/PDC Composite Plate | Laser Processing Services | Polishing Equipment and Vacuum Welding Furnace: 13911593499

CVD Diamond Material | Diamond Drawing Die Blank: 010-58411388-8063

Diamond Tool: 010-58411388-8330/8000/8013/8063

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