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SUPOWER

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PCD Compact Blanks

WORLDIA DESIGN

Well-known brand/high quality/made in China



Langfang Supower Diamond Technology Co., Ltd.

Company Profile

About Us

ENTERPRISE

Langfang Supower Diamond Technology Co., Ltd. (hereinafter referred to as "Supower") was registered in 2009 in the Chaobaihe Industrial Park of Dachang, Langfang City, Hebei Province. It is a wholly-owned subsidiary of Beijing Worldia Diamond Tools Co., Ltd which was the first batch of listed companies on the Science and Technology Innovation Board (stock code: 688028).

Supower is mainly engaged in the production, research and development and sales services of high-end superhard materials. The main products include PCD, PCBN, CVDD (CVD diamond single crystal and polycrystalline) and other high-end composite superhard materials. At the same time, Worldia research, produce and sell CVDD, PCD materials and equipments, such as mirror polishing machine, vacuum brazing furnace, various models and use of automatic CNC laser equipment, automatic knife sharpener, etc. Part of "internal exclusive materials and equipment", on the premise of meeting the core needs of the parent company and affiliated companies, it has begun to gradually open up to the market.

Supower has a strong team of professional and technical personnel, advanced production and processing equipment and strict quality monitoring system, relying on independent research and development to continuously improve and expand core technology, and has been recognized as a "science and technology enterprise" and "high-tech enterprise" in Hebei Province".



High-tech enterprises



Hebei Science and Technology Award



Technology-based SMEs





Product Manual



Polycrystalline diamond compact blanks (PCD) is a composite superhard material sintered with mixed diamond powder and cemented carbide matrix under high temperature and high pressure. The diamond crystals in the diamond layer of PCD are disorderly arranged, isotropic, without cleavage surfaces, and have the high hardness, high wear resistance and high thermal conductivity of diamond; the cemented carbide layer as the base has high impact toughness and Solderability. Therefore, PCD is particularly suitable for cutting tools of non-ferrous metals and non-metallic materials and supporting wear parts of various instruments and equipment.

Supower PCD Coding Rules

S	PD	010	W	R	360	55.0	16	05	B	Q
1	2	3	4	5	6	7	8	9	10	11

1
Company


2
Material type
PCD PD
PCBN PN

9
Diamond layer thickness t (Tolerance: $\pm 0.15\text{mm}$)
03 0.2-0.4
05 0.4-0.7
09 0.8-1.1
12 1.1-1.4
....

3
Material main particle size
001 1
002 1-3
005 5
010 10
025 25
030 30
.....

10
Category classification
Null Genuine, polished whole surface
B Type B, blemish
C Class C, layer thickness is out of tolerance
U Fine grinding and not polishing

4
Performance
Null Conventional
W High conductivity type

5
Material Shape
Round shape  R

11
Whether to cut
Null Not cut
Q Cut
....

6
Angle

7
Diameter

8
Total thickness of composite sheet T (Tolerance: $\pm 0.1\text{mm}$)
05 0.5
08 0.8
10 1.0
12 1.2
16 1.6
20 2.0
32 3.2
....



PCD Introduction

Model

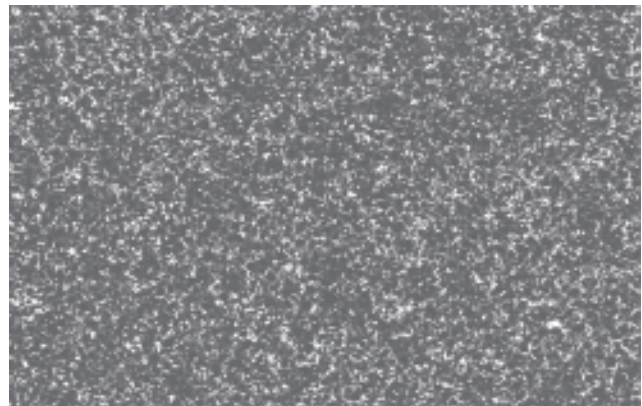
SPD005

Granularity5 μ m**Characteristic**

Fine particle size, good wear resistance and relatively high impact resistance.

Application

Suitable for 3C industry and copper, aluminum, wood, Processing of plastic, glass fiber and other materials.

Electron micrograph**Model**

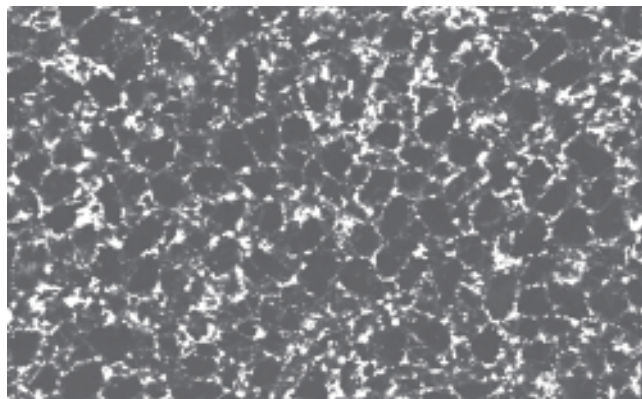
SPD010

Granularity10 μ m**Characteristic**

Medium particle size, with good wear resistance and impact resistance.

Application

It is suitable for the processing of copper, aluminum, aerospace composite materials, wood, plastics and other materials, with a wide range of applications.

Electron micrograph



PCD Introduction

Model

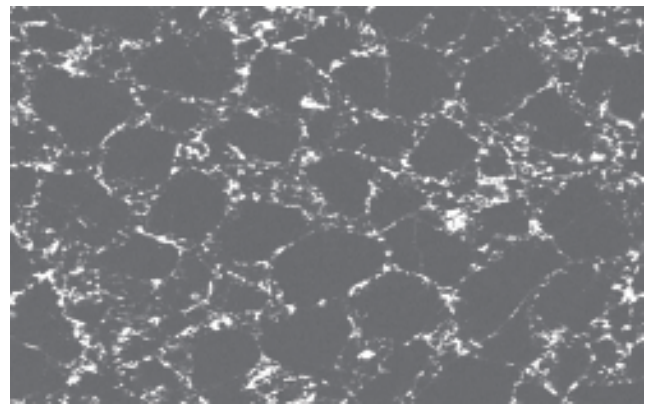
SPD030

Granularity2-30 μ m**Characteristic**

The mixed particle size has extremely high wear resistance, good impact resistance and thermal stability.

Application

It is suitable for high hardness non-ferrous metal alloys (such as high silicon aluminum alloy, cemented carbide), graphite, Processing of glass fiber, ceramics, composite flooring and other materials.

Electron micrograph**Model**

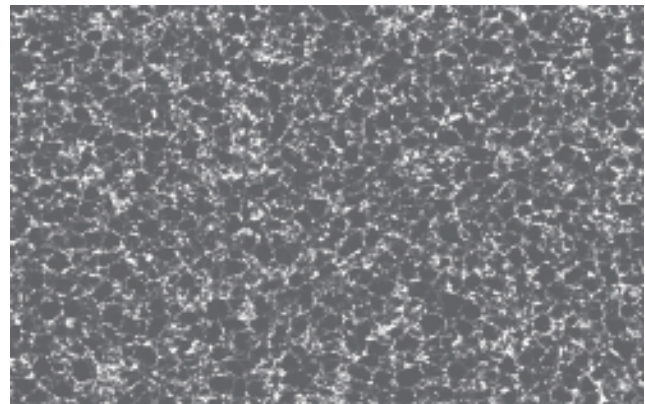
SPD010W

Granularity10 μ m**Characteristic**

Medium particle size, with excellent electrical processing performance and impact resistance, good wear resistance.

Application

It is suitable for all kinds of PCD tools manufactured by electrical machining technology, as well as PCD tools that require high wear resistance and at the same time have higher impact resistance requirements. It is especially suitable for milling cutters, drills, saw blades, etc. used for processing composite materials, wood, plastics, aluminum, copper and other materials.

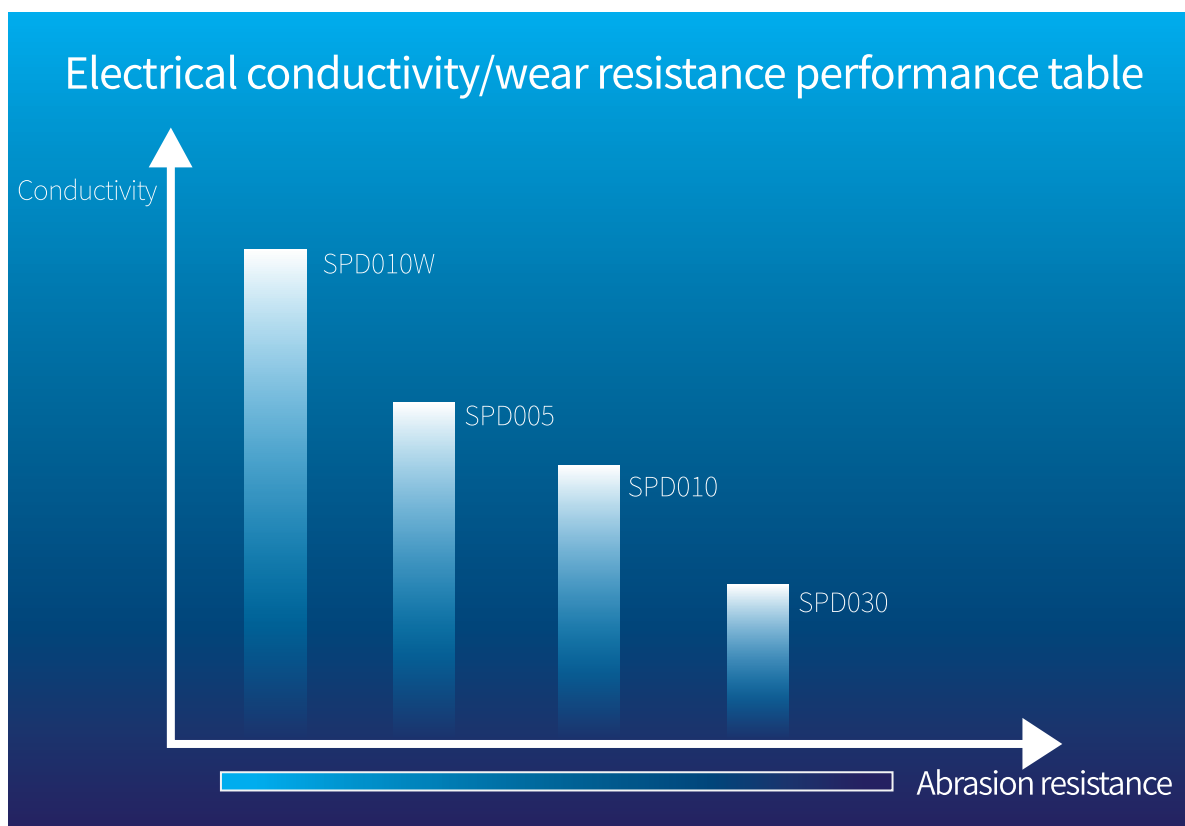
Electron micrograph



PCD Specifications

Model	Diameter mm	Diamond layer thickness(± 0.1 mm)	Total thickness ± 0.05 mm)				
			1.0	1.2	1.6	2.0	3.2
SPD005	55	0.5/0.9/1.2	✓	✓	✓	✓	✓
SPD010	55	0.5/0.9/1.2	✓	✓	✓	✓	✓
SPD030	55	0.5/0.9/1.2	✓	✓	✓	✓	✓
SPD010W	55	0.3/0.5/0.9	✓	✓	✓	✓	✓

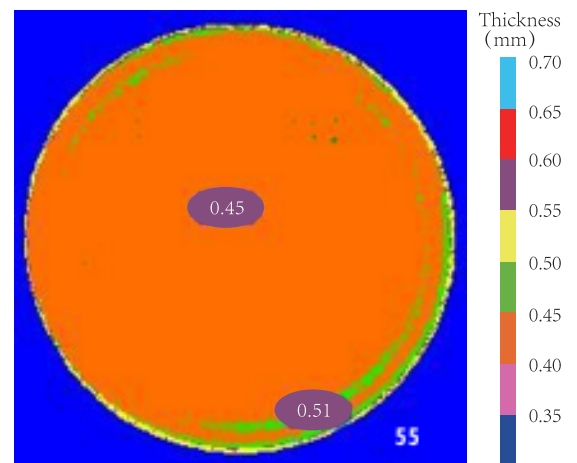
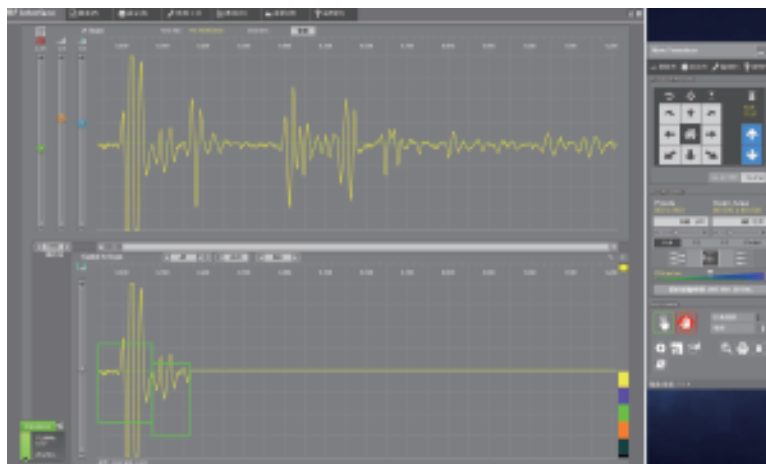
☆☆☆Our company can provide customized products according to customer needs☆☆☆





Testing Equipment

The company has advanced scanning electron microscope, metallographic microscope, C-scan and other testing equipment to ensure that the quality of all composite films meets the needs of users.





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