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PROFESSIONAL EFFICIENT RELIABLE

HR CARBIDE

FOUNDED IN 2006



**PROFESSIONAL
CARBIDE**

R&D | Manufacture | Sales
专业硬质合金研发/生产/销售

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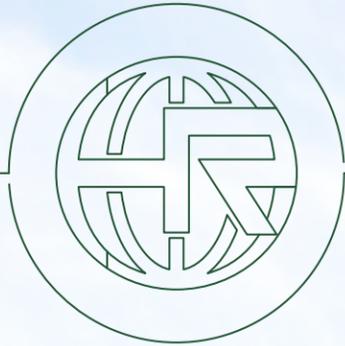
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公司简介

公司成立于2006年，总占地10600平方米，在职员工超过120名，坐落于河北省任丘市永丰路工业区，毗邻首都。自2000年涉足硬质合金行业以来，已经发展成为一家集产品研发、生产制造、全球互联网及直营实体店销售于一体的全链条硬质合金专业化公司。



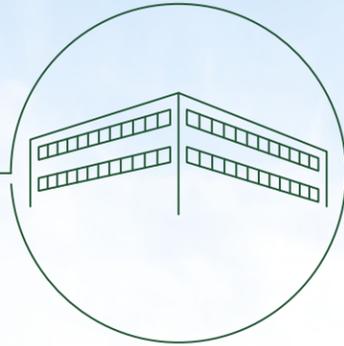
Company Profile

The company was founded in 2006, with a total area of 10,600 square meters and more than 120 employees. The company is located in Yongfeng Road Industrial Zone, Renqiu City, Hebei Province, adjacent to the Capital-Beijing. Since setting foot in the cemented carbide industry in 2000, it has developed into a full chain cemented carbide professional company integrating product research and development, production and manufacturing, global Internet and direct sales in physical stores.

基本情况

公司拥有数控电动伺服压力机31台、自动压力机生产线5条、大制品生产线3条，真空烧结炉7台、HIP热等静压烧结炉3台、卧式高压气淬真空炉1台、一系列自动化毛坯加工机床数台。

硬质合金深加工制造部拥有管理人员2名、技工12名。CNC加工中心、数控机床、线切割、平面磨床、外圆磨、内孔磨、万能磨、无心磨等30余台先进设备。



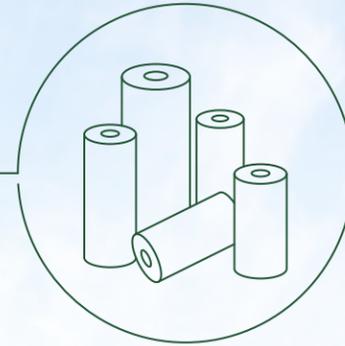
Basic Information

The company has 31 CNC electric servo presses, 5 automatic press production lines, 3 large product production lines, 7 vacuum sintering furnaces, 3 HIP hot isostatic pressing sintering furnaces, 1 horizontal high-pressure gas quenching vacuum furnace, and a series of automated carbide blank processing machines.

Cemented Carbide deep processing manufacturing department has 2 management personnel and 12 technicians. More than 30 advanced equipment, including CNC machining centers, CNC machine tools, wire cutting, surface grinding machines, external cylindrical grinding, internal hole grinding, universal grinding, and centerless grinding, further meet customer needs.

主营产品

自主研发63个牌号，用于冷镦模、热锻模、粉末冶金模、拉伸拉拔模，硬质合金阀芯阀座、级进模、电池模等各种型号板材，冷轧辊、热轧辊、高比重合金、耐腐蚀无磁合金及各种精密耐磨配件，广泛应用于紧固件产业、高铁、航空、船坞制造、隧道掘进、石油开采、精密电子、手机零配件、汽车和军工等多个领域。



Main Products

We have independently developed 63 grades, which are used for various types of products areas such as cold heading dies, hot forging dies, powder metallurgy dies, stretching and drawing dies, cemented carbide valve cores and seats, progressive dies, battery dies, cold rolling rolls, hot rolling rolls, high-density alloys, corrosion-resistant non-magnetic carbide, and various precision wear-resistant parts. They are widely used in the fastener industry, high-speed rail, aviation, shipyard manufacturing, tunnel excavation, petroleum mining, precision electronics, mobile phone parts, automotive and military industries.

发展理念

践行公司核心价值观：“诚信、匠心、分享、担当、共赢”。以服务好三者利益为主线，以筑梦新时代，智造新未来，致力于打造智能制造、绿色制造的恒瑞新品牌，立志成为硬质合金模具行业领跑者，提升中国制造形象。



Developing Philosophy

Practice the company's core values: "Integrity, Craftsmanship, Sharing, Responsibility, and Win-Win". Taking serving the interests of the three parties as the main line, building a new era of dreams, and creating a new future with intelligence, we are committed to creating the Hengrui new brand of intelligent manufacturing and green manufacturing. We are committed to becoming a leader in the Cemented Carbide Mold industry and enhancing the image of Chinese manufacturing.

ABOUT HR CARBIDE



PRODUCTION and R&D

生产和研发

10+

生产线
Production Lines

63+

硬质合金牌号
Carbide Grades

原材料准备

Raw Material Preparation



选用钨、钴、碳化钨、碳化钛等高硬度、高强度的材料，根据产品性能要求精确配比

Materials with high hardness and high strength, such as tungsten, cobalt, tungsten carbide, and titanium carbide, are selected and precisely proportioned according to product performance requirements

粉末混合

Powder Mixing



将原料研磨成细粉，通过球磨机等设备充分混合，确保成分均匀分布

The raw materials are ground into fine powder and then thoroughly mixed using equipment such as ball mills to ensure uniform distribution of components

压制成型

Press Molding



采用模压或等静压工艺将混合粉末压制制成坯料

The mixed powder is pressed into blanks using molding or isostatic pressing processes

毛坯车型

blank Lathe Turning



根据客户的要求定制加工尺寸

Customized processing dimensions are available according to customer requirements

烧结

Sintering



在高温（通常1300-1500℃）下烧结，使粉末颗粒结合形成致密结构

Sintering at high temperatures (usually 1300-1500°C) allows the powder particles to bond together to form a dense structure

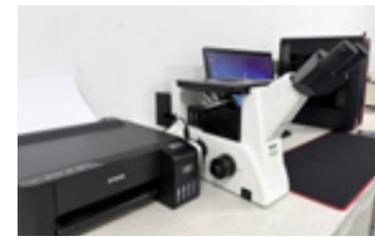
成品

Finished Product



冷墩模毛坯成品

Cold heading die blank finished product



从原料采购到原料检测，从加工工艺到产品质量的检测，在每一个生产环节上都有严格的质量监控，每一个环节都尽可能确保零缺陷。

我们拥有独立的实验室，配备元素分析仪、钴磁分析仪、金相试样抛光机、水分测定仪、金相显微镜、分析天平、矫顽磁力自动测量仪、洛氏硬度计、电子万能试验机数十种设备，旨在提高产品质量，为客户带来更多信心。

From raw material procurement and testing to processing and product quality inspection, we implement rigorous quality control at every stage of production, striving to ensure zero defects at every stage.

We maintain an independent laboratory equipped with dozens of instruments, including elemental analyzers, cobalt magnetic analyzers, metallographic sample polishers, rapid moisture meter, metallographic microscopes, analytical balances, automatic coercivity testers, Rockwell hardness testers, and electronic universal testing machines. Our goal is to enhance product quality and provide customers with greater confidence.

5+

科研人员
Researchers

20+

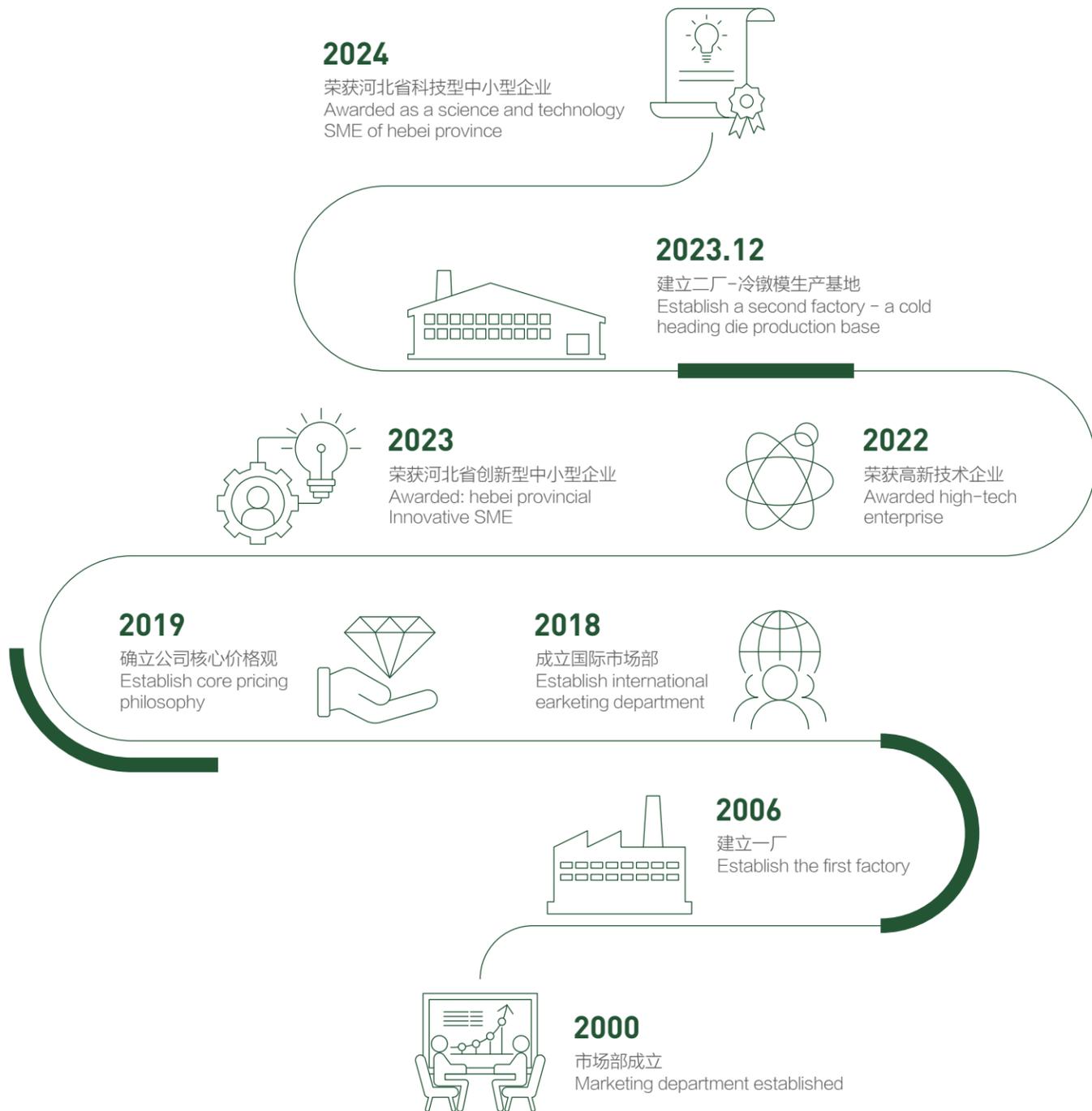
实验设备
Experimental Equipment



HR CARBIDE

DEVELOPMENT HISTORY

发展历程



QUALIFICATIONS HONORARY

资质荣誉



荣获规模企业、高新技术企业、科技型中小企业、创新型中小企业称号，通过ISO9001质量管理体系认证、AAA证书、硬质合金自动化加工设备制造等十余项国家专利。始终坚持创新是第一动力，以人才引领赋能高质量发展坚持不断研发，充分激发创新活力。

Has been awarded the titles of High-Tech Enterprise, Technology-Based Small and Medium-sized Enterprise, and Innovative Small and Medium-sized Enterprise, and has passed more than ten National Patents such as ISO9001 Quality Management System Certification, AAA Certificate, and Cemented Carbide Automation Processing Equipment and Manufacturing. Always adhere to innovation as the primary driving force, empower high-quality development with talent, persist in continuous research and development, fully stimulate innovation vitality.



30+
专利及荣誉证书
Patents & Honorary Certificates



CARBIDE COLD HEADING DIE

硬质合金冷镦模具

硬质合金冷镦模采用由钨、钴等金属粉末烧结而成的硬质合金作为主要材料。这种材料具有极高的硬度，硬度通常在HRA85-90之间。其内部组织结构紧密，耐磨性极佳，能够在严苛的冷镦加工环境下保持稳定的性能。硬质合金冷镦模适用于多种金属材料的冷镦成型，如钢铁、铜、铝等。它广泛应用于汽车、摩托车、航空航天、电子、机械等众多行业。在螺栓、螺母等紧固件的生产中，能确保产品达到极高的尺寸精度和形状一致性；在汽车发动机部件、底盘零件等关键组件的冷镦加工中，也能发挥重要作用，为产品的高性能和长寿命提供保障。

Carbide cold heading dies are primarily made of cemented carbide, a material formed by sintering metal powders such as tungsten and cobalt. This material possesses exceptional hardness, typically between HRA85 and HRA90. Its compact internal structure and excellent wear resistance allow it to maintain stable performance even under the harsh conditions of cold heading. Carbide cold heading dies are suitable for cold heading of a variety of metal materials, such as steel, copper, and aluminum. They are widely used in numerous industries, including automotive, motorcycle, aerospace, electronics, and machinery. In the production of fasteners such as bolts and nuts, they ensure extremely high dimensional accuracy and shape consistency. They also play a vital role in the cold heading of key components such as automotive engine parts and chassis parts, ensuring high performance and long product life.



Material Properties

材质性能表



Sr No.	Grade	Co(Ni) %	Hardness (HRA)	Density (g/cm ³)	Bending strength(Mpa)	Grain Size	Grade Features and Recommendation
HR00	HR001	23.5	83	13.1	2400	2.6/Coarse	Use for M16mm-M24mm screws dies, upsetting and reducing overall dies; Excellent toughness and hardness
	HR002	25	84	12.95	3100	1.4/Medium	Use for screws dies up to M16mm, drywall screws dies, dovetail screws dies, reducing dies, six segments dies, nut dies
	HR003	24	85	13.05	3200	1.2/Fine	use for reducing dies below grade 8.8, serated dies, upsetting dies
	HR004	23	85	13.1	3300	1.4/Medium	Use for 40Cr upsetting and reducing dies, stainless steel screws dies
	HR005	10	89.5	14.5	3500	1.2/Fine	Use for strong reducing dies, high wear resistance and toughness
	HR006	23	82	13.25	2400	2.8/Corase	High impact toughness. use for processing big flange screw dies; Impact-resistant cold heading dies
	HR007	16	87	13.8	3400	1.4/Medium	Higher hardness, small aperture strong reducing dies, and multi-station stretching dies
	HR009	17	86	13.75	3200	1.6/Corase	Medium hardness and good wear resistance, use for large-aperture reducing dies and extruded aluminum dies
	HR011	12.5	88	14.3	3300	1.4/Medium	High hardness and good wear resistance, use for strong reducing dies
	HR021	19	84.5	13.5	2700	2.6/Coarse	Excellent toughness and wear resistance, and Use for upsetting and reducing overall dies
	HR022	19	85	13.5	3100	2.4/Corase	Use for stainless steel six segments nut dies, header punching dies, reducing dies, and Φ30 steel ball dies
	HR023	15.5	86	13.85	2900	2.6/Coarse	Use for high-speed steel balls dies within Φ20, stainless steel balls dies, bearing steel balls dies, and carbon steel balls dies
	HR029	26.5	80.5	12.95	2500	3.2/Super Corase	Use for low-carbon steel crews dies with large elongation, T-bolts die
HRS	HRS1	22	83.5	13.2	2800	2.6/Coarse	Oxidation and corrosion resistance, high temperature strength, use for hot-forging stainless steel dies
	HRS2	24	83.7	13.05	3100	2.0/Corase	Use for stainless steel drywall screws dies, smaller screws dies
	HRS3	15.5	86.0	13.85	2900	2.0/Corase	Use for steel materials screws, reducing dies, and punching dies
	HRS4	23.5	82.5	13.2	2500	2.0/Corase	Use for stainless steel screws, upsetting dies
	HRS6	19.5	84.5	13.45	3200	2.2/Corase	Use for hot forging dies, six segments bolts dies, hot forging bolt dies, nut dies
	HRS7	21.5	83.5	13.31	2900	2.4/Corase	Use for hot forging dies, hexagonal bolt heads, hot-punching bolt dies, nut dies
	ZHD	ZHD82	25	81.7	13	2500	2.5/Corase
ZHD82A		23	82.7	13.35	2600	2.5/Corase	Use for processing screws from M16mm to M24mm
ZHD84		21	83.7	13.55	2600	2.5/Corase	Use for screws up to M16mm, drywall screws dies, dovetail screws dies, reducing dies, nut dies
ZHD86		19	84.7	13.8	2600	2.5/Corase	Use for processing 40Cr Upsetting, screws dies, punch
ZHD87A		25	82.0	13.05	2500	2.0/Corase	Super toughness and Strong versatility, Use for processing screws from M16mm to M20mm

FINISHED CARBIDE DIE

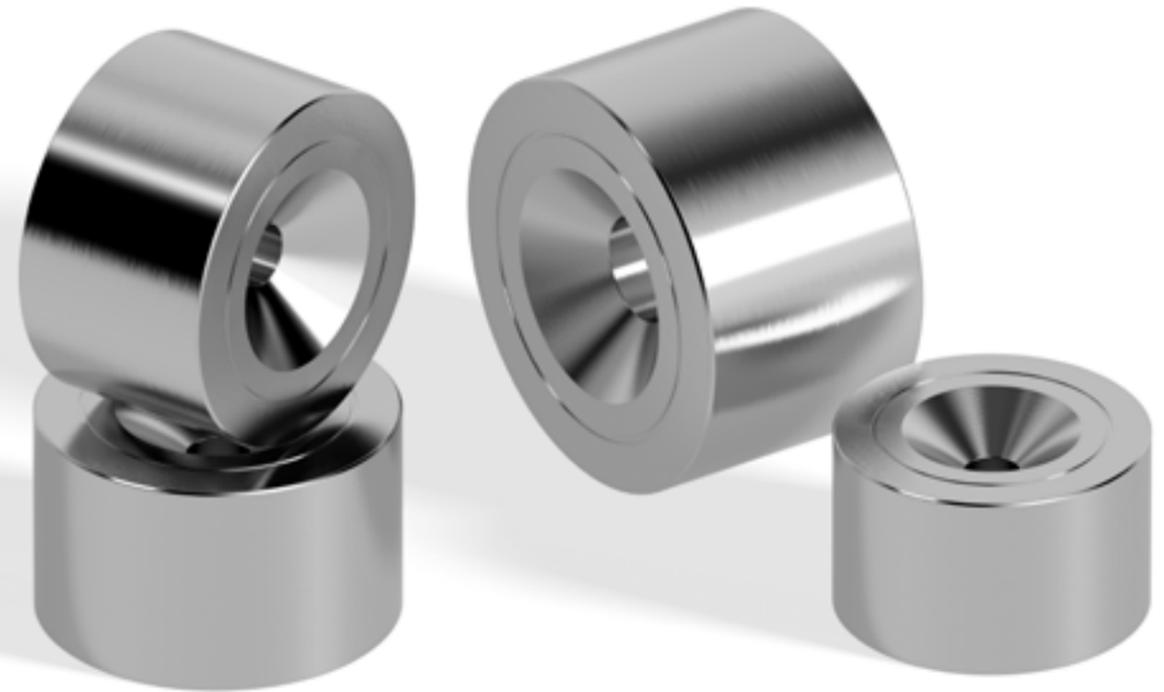
成品硬质合金模具

本模具采用优质模具钢与硬质合金精密加工制成，核心型腔经镜面抛光与超精磨削，确保螺丝成型精度达IT6级以上。

其具备高耐磨性与抗疲劳强度，可稳定生产不同规格螺纹件，有效减少产品飞边、错模等问题。适配冷镦、挤压等主流工艺，为螺丝批量生产提供高效、高一一致性的成型解决方案。

This mold is precision-machined from high-quality mold steel and carbide. The core cavity is mirror-polished and ultra-finely ground, ensuring screw forming accuracy exceeding IT6.

It offers high wear resistance and fatigue resistance, enabling stable production of threaded parts of various specifications while effectively minimizing issues such as flash and misalignment. Compatible with mainstream processes such as cold heading and extrusion, it provides an efficient and highly consistent forming solution for mass production of screws.



HR CARBIDE

PCD DIAMOND DIES

PCD钻石拉丝模具

模具采用高品质聚晶金刚石（PCD）为核心拉丝材质，经超精密研磨工艺加工，模孔光洁度达Ra0.02um以下，确保线材拉制精度稳定。

其具备超高耐磨性与低摩擦系数，使用寿命为硬质合金模具的50-100倍，可适配铜、铝、不锈钢等多种线材拉制，有效降低换模频率与生产成本，为高精度线材批量生产提供可靠保障。

The die utilizes high-quality polycrystalline diamond (PCD) as its core drawing material and undergoes ultra-precision grinding, achieving a die hole finish of less than Ra0.02um, ensuring consistent wire drawing accuracy.

It boasts exceptional wear resistance and a low friction coefficient, with a service life 50-100 times that of carbide dies. It is suitable for drawing a variety of wire materials, including copper, aluminum, and stainless steel, effectively reducing die change frequency and production costs, providing reliable support for mass production of high-precision wire.





CARBIDE ROLLS

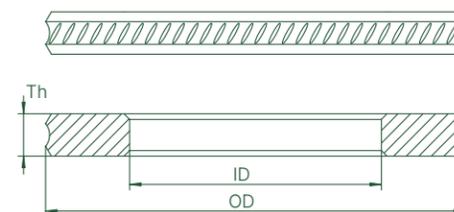
硬质合金轧辊

在金属轧制工业中，轧辊作为核心关键部件，其性能直接决定了轧制产品的精度、表面质量与生产效率。硬质合金轧辊凭借卓越的硬度、耐磨性与抗冲击性，成为高端轧制领域的优选装备，广泛应用于无缝钢管、型钢、有色金属及精密带材等轧制场景，为现代化轧制生产线提供稳定可靠的性能支撑。

In the metal rolling industry, rolls are core components whose performance directly determines the precision, surface quality, and production efficiency of rolled products. Carbide rolls, with their exceptional hardness, wear resistance, and impact resistance, are the preferred equipment for high-end rolling. They are widely used in rolling seamless steel pipes, steel sections, nonferrous metals, and precision strip, providing stable and reliable performance support for modern rolling production lines.

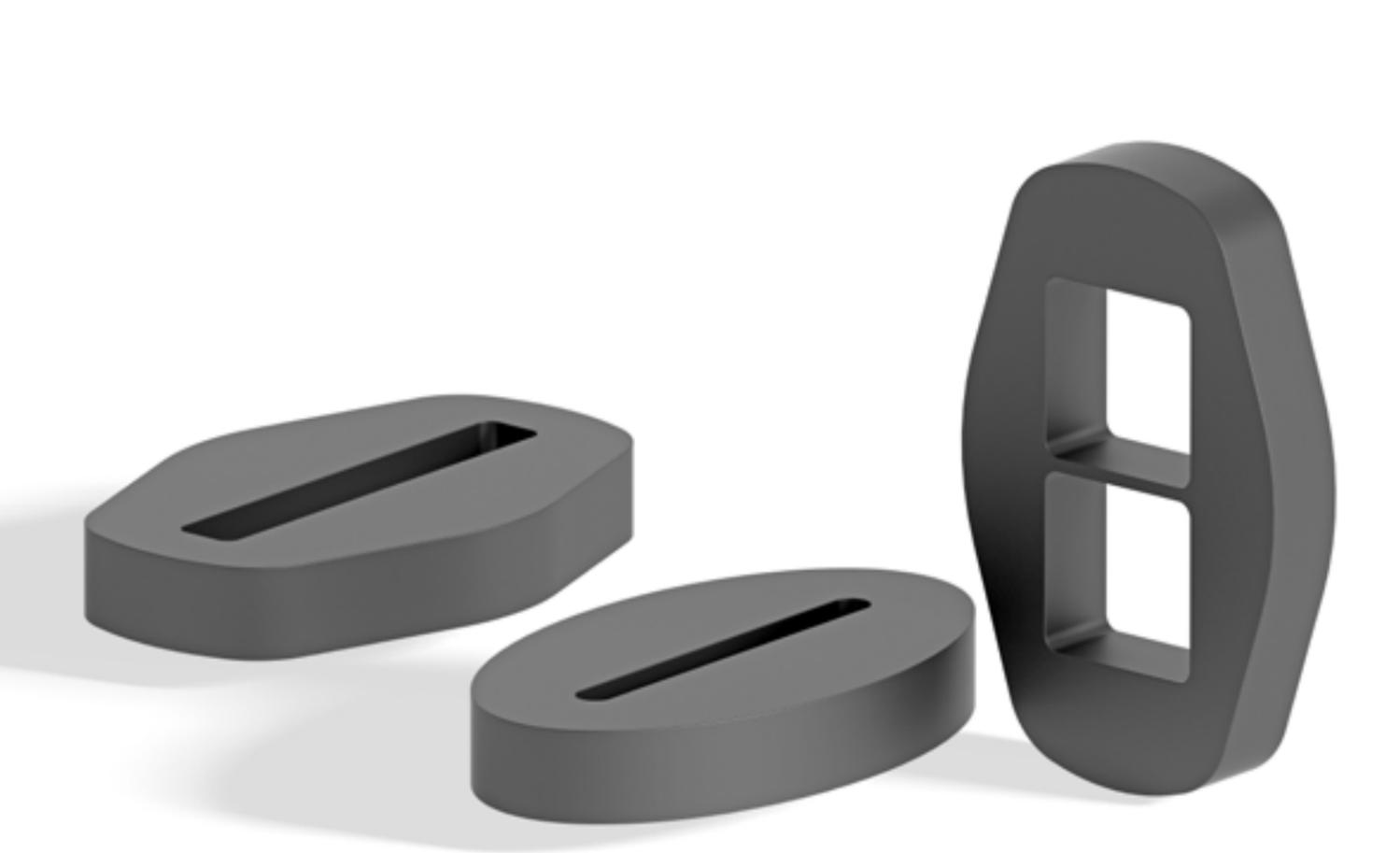
标准尺寸 Standard Size

线材直径 Wire diameter (mm)	外径 OD (mm)	内径 ID (mm)	厚度 Thickness (mm)
4.0~8.5	125	82	15
9.0~12.0	125	82	20
4.0~8.5	140	90	15
9.0~12.0	140	90	20
4.0~8.5	150	90	15
9.0~12.0	150	90	20
4.0~8.5	150	95	15
9.0~12.0	150	95	20
9.0~12.0	170	100	20
9.0~12.0	220	130	20



加工尺寸 Processing Size

棒线材直径 Φ Rod wire (mm)	椭圆形轧辊 Oval reducing rolls		弧形轧辊 Round reducing rolls		成型轧辊 Forming rolls		塑形轧辊 Profiling rolls		成品线材直径 Φ Reinforced wire (mm)
	RO	RT	FO	PR	FO	PR			
4.0	RO0	RT0	FO0	PR3.0					3.0
4.5	RO0	RT0	FO0	PR3.5					3.5
5.0	RO1	RT1	FO1	PR4.0					4.0
5.5	RO1	RT1	FO1	PR4.5					4.5
6.0	RO2	RT2	FO1	PR5.0					5.0
7.0	RO2	RT2	FO1	PR5.5					5.5
7.5	RO3	RT3	FO2	PR6.0					6.0
8.0	RO3	RT3	FO2	PR6.5					6.5
8.5	RO4	RT4	FO2	PR7.0					7.0
9.0	RO4	RT4	FO3	PR7.5					7.5
10	RO5	RT5	F03	PR8.0					8.0
11	RO5	RT5	F03	PR8.5					8.5
7	RO5	RT5	F03	PR9.0					9.0
12	RO6	RT6	FO4	PR9.5					9.5
12	RO6	RT6	FO4	PR10.0					10.0
13	RO6	RT6	FO4	PR10.5					10.5
14	RO7	RT7	F04	PR11.0					11.0
14	RO7	RT7	F04	PR11.5					11.5
15	RO7	RT7	FO4	PR12					12.0



CARBIDE DRAW DIE

硬质合金拉伸模具

硬质合金拉伸模具因其卓越的性能，在金属成型工业中扮演着至关重要的角色。硬质合金拉伸模具的适用范围十分广泛，主要用于拉拔棒材、线材、丝材、管材等直线型难加工物体，适用于钢铁、铜、钨、钼等金属和合金材料的拉拔加工。

Carbide draw dies play a vital role in the metal forming industry due to their excellent performance. The application range of cemented carbide draw dies is very wide. They are mainly used for drawing linear difficult-to-process objects such as bars, wires, silk, and pipes. They are suitable for drawing metals and alloy materials such as steel, copper, tungsten, and molybdenum.

Material Properties

材质性能表

Sr No.	Grade	Co(Ni) %	Hardness (HRA)	Density (g/cm ³)	Bending strength(Mpa)	Grain size	Grade Features and Recommendation
Medium	HRS17	3	68	16.5-18	1500	1.6	Specific gravity of 16.5 to 18 cm ³ , high strength, high thermal conductivity, low thermal expansion coefficient, and excellent electrical conductivity. It is widely used in aerospace, aviation, military, and electrical instrumentation
	YL20	15	85	13.5	3000	1.6	Non-magnetic, corrosion-resistant, acid and alkali resistant
	YN15	11	85.5	13.8	2700	1.4	
	HR30N	27	79	12.5	2400	1.4	Excellent toughness, use for processing drawing dies
	HR23N	25	81.5	12.9	2600	1.4	
Fine Size	HW41	15	87	14.1	3300	1.2	Large-scale drawing dies; impact-resistant and wear-resistant parts; complex mechanical components; powder metallurgy dies; carbide plate
	HR15Y	15	87	14.1	3300	1.2	
	HW31	11	88	14.4	2700	1.2	Wire drawing dies, wear-resistant parts, mechanical components, stretch dies, powder metallurgy dies, plate
	HR11Y	11	88	14.4	2700	1.2	
	HW21	8	89.5	14.6	2500	1.2	
	HR8Y	8	89.5	14.6	2500	1.2	Wear-resistant parts, mechanical accessories, drawing dies, stainless steel drawing dies, flat wire rolls, powder metallurgy dies, plate
	HR15B	15	86.5	13.7	3000	1.2	Excellent toughness effectively prevents cracking during wire cutting. large-scale plate processing, extrusion dies
	HR15Z	15	86.5	13.7	3000	1.2	High strength and toughness, use under high stress conditions, special-shaped structural parts, mechanical components, motor progressive dies, three-dimensional ring rolling, large-size drawing, rod drawing, tube drawing, and extrusion dies
	HR11Z	11	87.5	13.9	2800	1.2	
	YN8	8	88	14.0	2000	1.2	Non-magnetic, corrosion-resistant, acid and alkali resistant
	HR8Z	8	89	14.3	2500	1.0	Wire drawing, tube drawing, stretching, powder metallurgy forming, tube reduction dies, extrusion dies, flat wire rollers, and special-shaped wear-resistant parts
Submicron	HR8D	10	90	14.0	2800	0.8	Fine grains higher wear resistance than stainless steel flat wire rollers, powder metallurgy molds, electromechanical special-shaped parts, and battery molds
	HR10A	14	91	14.1	3000	0.8	
	HR6A	11	91	14.1	3000	0.8	
	HR6X	12	91	14.2	2500	0.8	
	HR15A	14	89	14.0	3100	0.8	Good toughness and high strength, widely used in wear-resistant parts, valves, and valve seats
	HR10X	15	89	14.1	3000	0.8	
	HR8C	12	90	14.1	3300	0.8	
	HR15X	14	90.5	14.1	2800	0.8	
HR6F	7.5	92.5	14.7	2600	0.6	High-precision rollers, powder metallurgy molds, and wear-resistant parts	

CARBIDE TUBE DRAWING DIE

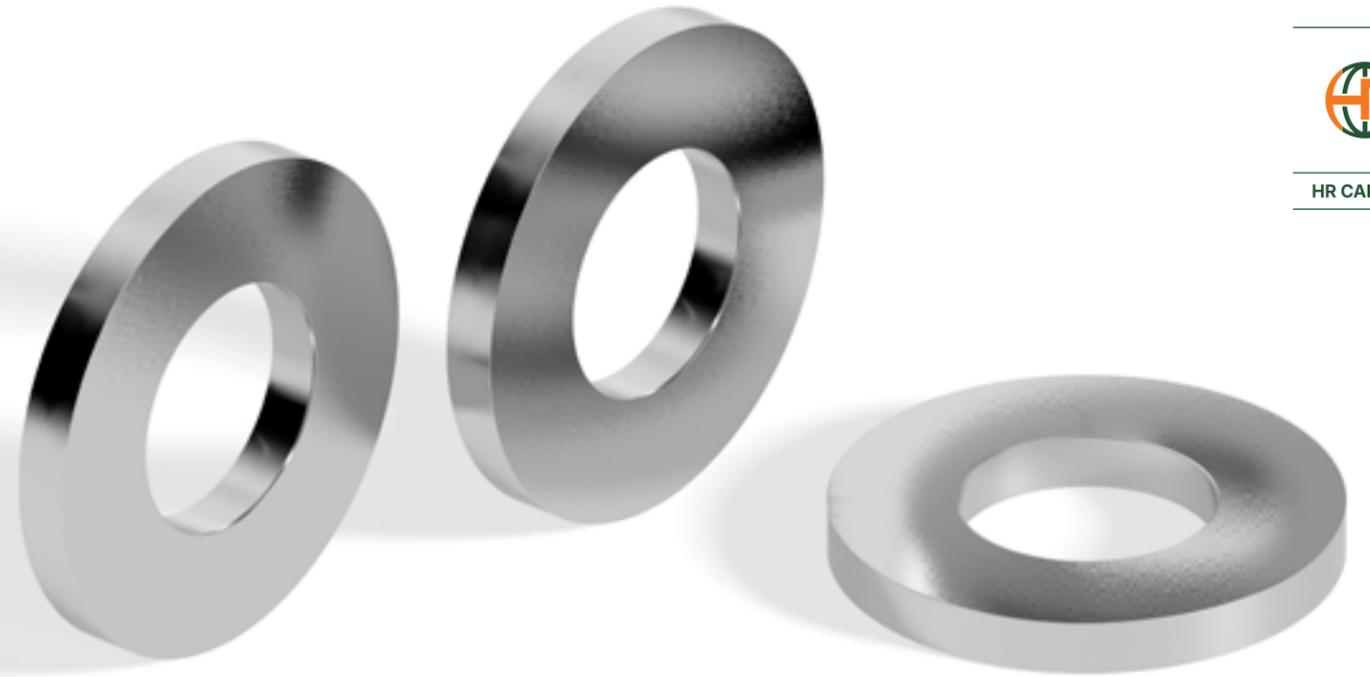
硬质合金拉管模具

硬质合金拉管模具的核心用途是对金属管材进行冷拉拔成型，以精确地减小其外径和壁厚，改善其尺寸精度、表面光洁度和机械性能。

其具有极致的耐磨性、极高的抗压强度、优异的抛光性、良好的尺寸稳定性，为要求极高标准（包括微米级精度、镜面级光洁度、高强度以及复杂异型截面）的高性能金属管材的制造，提供了可靠、耐用且经济高效的成型解决方案。

The core purpose of carbide tube drawing dies is to cold-draw metal tubes to precisely reduce their outer diameter and wall thickness, improving their dimensional accuracy, surface finish, and mechanical properties.

They offer exceptional wear resistance, high compressive strength, excellent polishability, and good dimensional stability, providing a reliable, durable, and cost-effective forming solution for the manufacture of high-performance metal tubes requiring the highest standards, including micron-level precision, mirror-quality finish, high strength, and complex, special-shaped cross-sections.



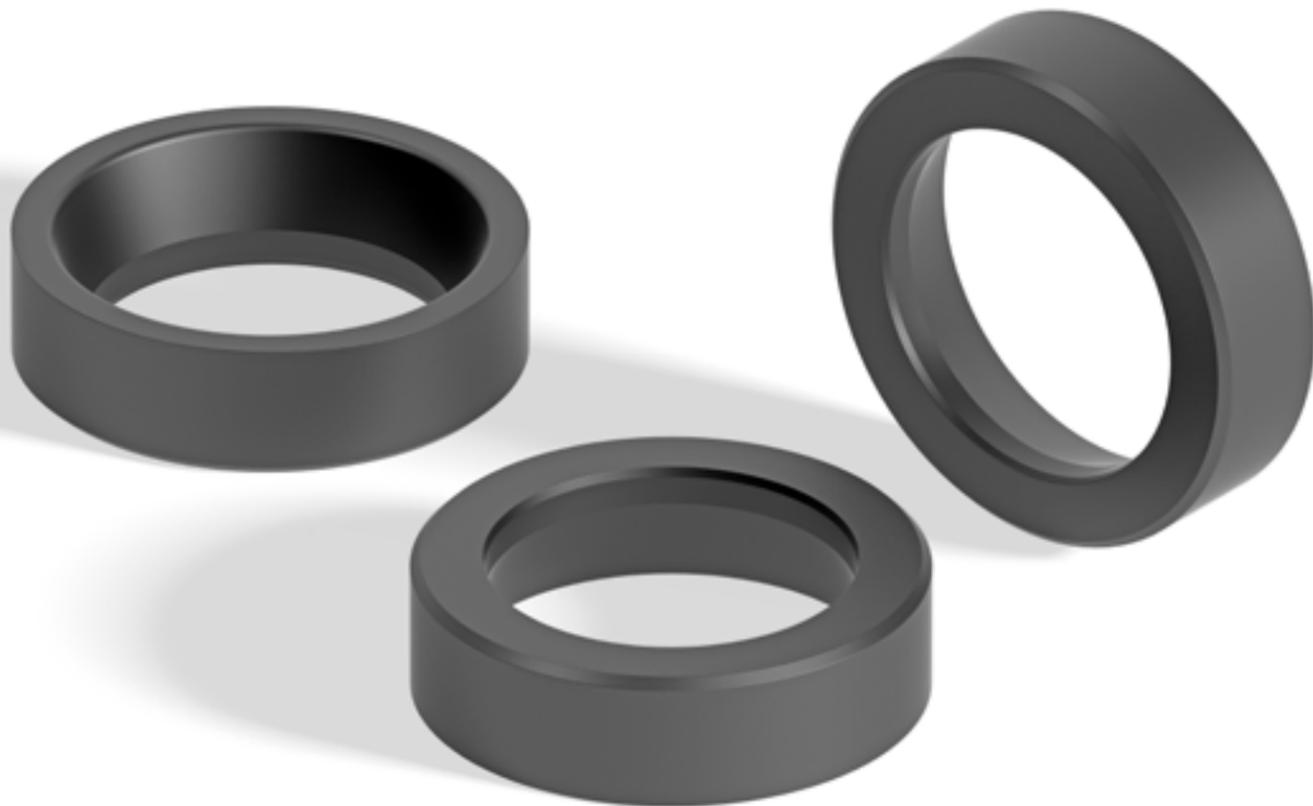
HR CARBIDE

CARBIDE FLAT WIRE ROLLER

硬质合金扁丝轮

硬质合金扁丝轮是一种具有高硬度、高耐磨性的工具，主要用于金属线材加工。可用于对钢丝等金属线材进行压扁、轧辊等加工操作，如钨钢YG8、YG15材质的硬质合金扁丝轮，常用于焊丝轧辊、扁丝对辊等，能使线材获得特定的截面形状和尺寸精度，满足不同行业的使用要求。在机械制造、汽车零部件制造等需要大量加工螺纹或进行线材处理的行业中，使用硬质合金扁丝轮可以减少工具更换次数，提高生产效率，降低生产成本。

Carbide flat wire roller are highly hard and wear-resistant tools primarily used for metal wire processing. They can be used for flattening and rolling steel and other metal wires. Carbide flat wire roller made of tungsten steel YG8 and YG15 are commonly used in welding wire rolling and flat wire rollers. They can achieve specific cross-sectional shapes and dimensional accuracy on wires, meeting the requirements of various industries. In industries requiring extensive threading or wire processing, such as machinery manufacturing and automotive parts manufacturing, the use of Carbide flat wire roller can reduce tool changes, improve production efficiency, and reduce costs.



CARBIDE SHELLING WHEEL

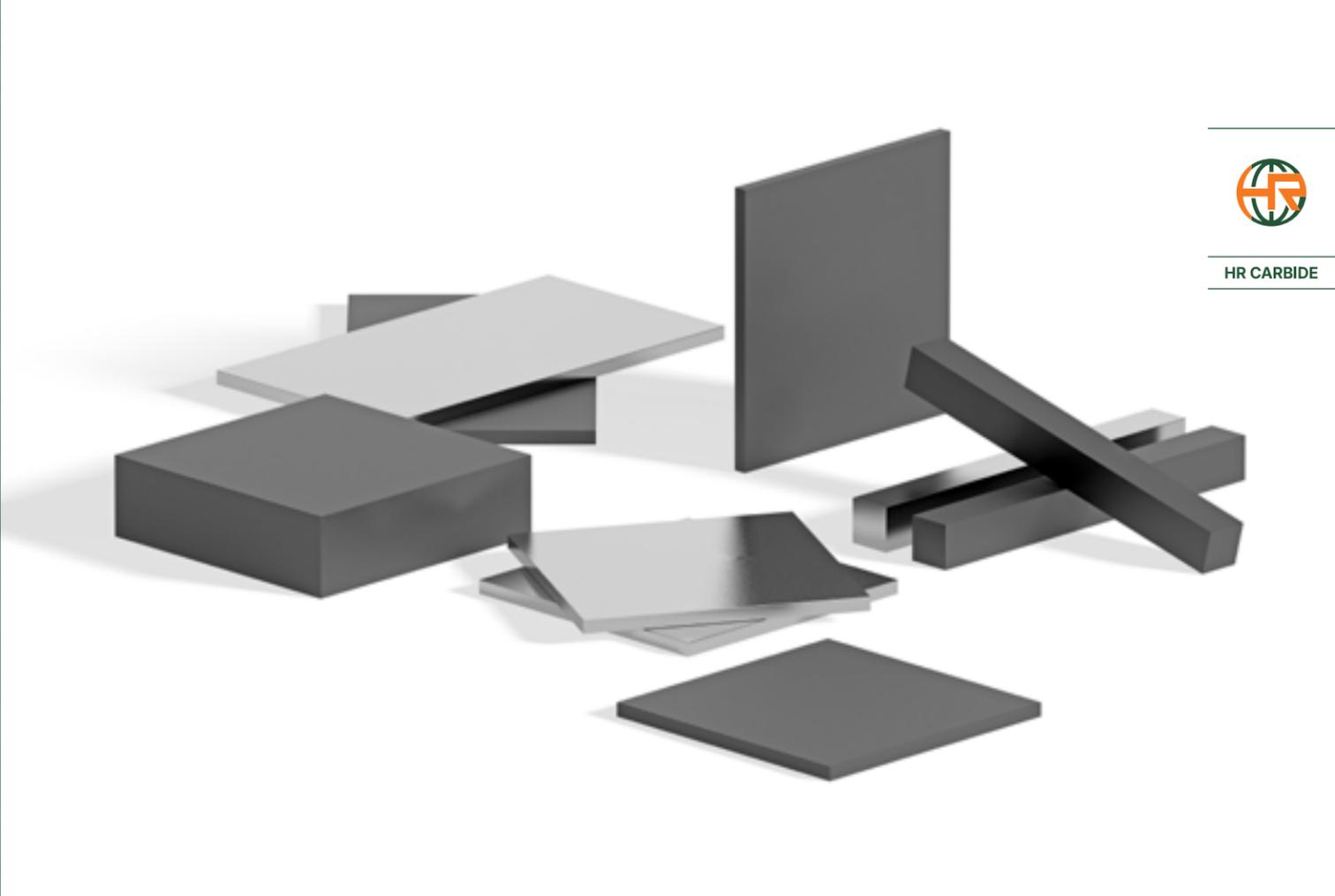
硬质合金剥壳轮

以高硬度碳化钨合金为基材，经精密成型与刃口强化处理，具备优异耐磨性与抗冲击韧性。

其表面特殊齿形设计可高效剥离金属线材氧化皮，确保剥壳均匀无损伤，且使用寿命远超传统钢质剥壳轮。适配各类线材预处理生产线，能稳定提升后续加工精度，为线材制造提供高效前置保障。

Made from a high-hardness tungsten carbide alloy, this wheel undergoes precision molding and edge hardening treatment, resulting in excellent wear resistance and impact toughness.

The wheel's unique tooth profile effectively removes oxide scale from metal wire, ensuring uniform, damage-free peeling. Its service life far exceeds that of traditional steel peeling wheels. Suitable for all types of wire pre-treatment production lines, it consistently improves subsequent processing accuracy, providing efficient pre-production support for wire manufacturing.



HR CARBIDE



CARBIDE PLATE

硬质合金板材

硬质合金板材以高纯度碳化钨与钴为核心原料，经粉末冶金工艺精密制成，兼具超高硬度（HRA85-92）与优异抗弯强度。

其耐磨、耐冲击、耐高温性能突出，能在金属切削、矿山开采、精密模具等严苛场景中稳定作业，有效延长设备使用寿命，是提升工业生产效率的关键结构材料。

The carbide plate is made from high-purity tungsten carbide and cobalt through a precision powder metallurgy process, achieving both ultra-high hardness (HRA85-92) and excellent flexural strength.

Its outstanding wear, impact, and high-temperature resistance allows it to operate reliably in demanding applications such as metal cutting, mining, and precision molds, effectively extending equipment life. It is a key structural material for improving industrial production efficiency.

