NAENS DIAMOND

纳恩斯钻石

ULTRA-PRECISION HPHT
DIAMOND LARGE SINGLE CRYSTALS

✦ ✦ ✦

A World-Class Manufacturer of Diamond Large Single Crystals

WUXI NAENS TECHNOLOGY CO., LTD.
www.naens.com · info@naens.com · +86 134 0003 9933

ABOUT US

COMPANY PROFILE

We possess the core technology behind High-Temperature High-Pressure (HPHT) synthesis of diamond large single crystals. Through close cooperation with a National Superhard Materials Laboratory, we continuously refine our process technology, minimizing uncertainty in production and delivering material that is trusted throughout the ultra-precision machining tool industry.

Wuxi Naens Technology Co., Ltd.

Wuxi Naens Technology Co., Ltd. is a high-end enterprise dedicated to the R&D, production and sale of High-Temperature High-Pressure (HPHT) diamond large single crystals.

We are committed to supplying world-class HPHT diamond large single crystals. Through continuous technological innovation and accumulated industry experience, the company has built deep expertise in non-standard blade/tool design and on-site application support, allowing us to meet the individualized needs of a wide range of customers.

Our headquarters is located inside the National Bonded Zone of Jiangyin, while our production base is situated in the Industrial Cluster Zone of Yanjin County, Xinxiang City, Henan Province.

¥100M	20+ Years	3,000+
REGISTERED CAPITAL	INDUSTRY EXPERIENCE	CLIENTS SERVED

Cut and polished diamonds across the full color spectrum

RESEARCH & DEVELOPMENT

CORE TECHNOLOGY, TALENT AND VALUES

A PhD-Led Core Technology Team — Multiple Invention Patents

The company maintains excellent conditions and strong capability for scientific and technological innovation. We work in close partnership with the National Superhard Materials Laboratory at Jilin University, and our core technical team is led by doctoral supervisors from Jilin University.

We hold the core technology for synthesizing artificial diamond large single crystals and are a leading force in the industrialization of HPHT synthetic diamond large single crystal technology in China. Our team has successfully developed both colorless HPHT diamonds and a full range of HPHT colored diamonds, earning a strong reputation within the industry.

Experienced Production Management

Our production management team, led by PhD-level specialists, has more than a decade of hands-on experience in synthetic diamond production, with deep expertise in process improvement, equipment management and workforce management.

Naens Diamond corporate headquarters

Our Values

We hold firmly to the values of unity, innovation, integrity and mutual success. Guided by a craftsman's spirit of relentless refinement, we continuously pursue excellence in product quality — creating greater value for our customers, our employees and society, with the ambition of becoming a world-class manufacturer of diamond large single crystals.

WHY NAENS HPHT DIAMOND

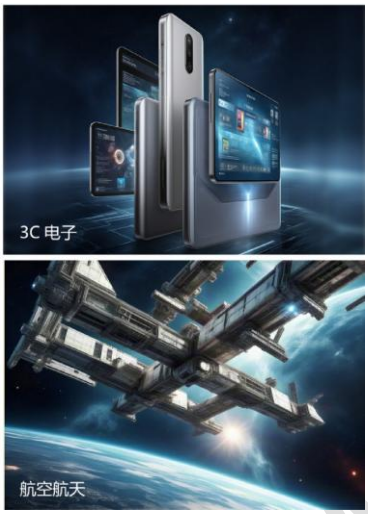
WORLD-CLASS INDUSTRIAL LARGE SINGLE CRYSTALS

- Lower cost, higher efficiency — creating greater cutting value while reducing overall cost.
- Superior surface finish — reduces surface friction on machined parts and enhances lubrication and sealing performance.
- Stable, consistent performance — minimizes uncertainty throughout the machining process.
- High-end customization — meets the customized requirements of non-standard ultra-precision machining tools.

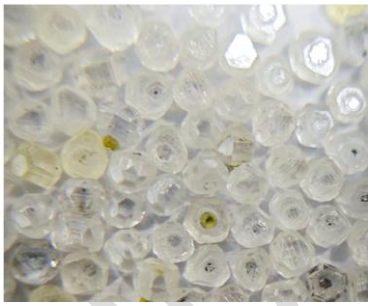
Application Fields

3C electronics, automotive manufacturing, aerospace, medical devices, cutting & grinding tools, and more.

Automotive · Medical · Cutting & Grinding



3C Electronics · Aerospace



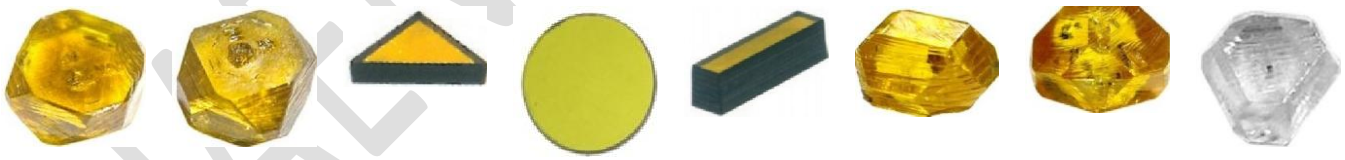
Diamond large single crystal batch

PRODUCT OVERVIEW

SSCD SERIES — SHINING DIAMOND

Owing to its extreme physical properties, diamond enjoys wide-ranging applications across science and technology. Its hardness and corrosion resistance make it ideal for precision cutting tools; its high thermal conductivity suits heat-sink bases for electronic components; its broad optical window makes it an ideal material for optical instruments; and its exceptional strength lends itself to mechanical parts and precision instruments. Doped diamond is also drawing growing attention as a semiconductor material for high-frequency devices.

Code	Application Field	Typical Crystal Orientation / Size	Shape
SR	Ultra-precision surface finishing & precision machining (e.g. precious metals, MMC materials)	4-point {100}, face length 2–5.5mm	Hexahedron, one corner missing
SN	Ultra-precision surface finishing & precision machining (e.g. precious metals, MMC materials)	2-point {110}, face thickness 1.5–3mm	Multi-corner, near-circular
SC	Laser-processed for ultra-precision machining and wear-resistant parts	4-point {100} / 2-point {110}; edge up to 6mm, thickness up to 2.5mm	Round, rectangular / cuboid
STN / STT	Dressers (single-point, blade, rotary & roller), specialty cutting tools, indenters	3-point {111}, 0.05ct–1ct+	Tower-shaped, with / without tip
SD	Wire-drawing die cores	3-point {111}, low nitrogen, colorless	Near-triangular



A sample of the shapes supplied across the Sscd product range

SR

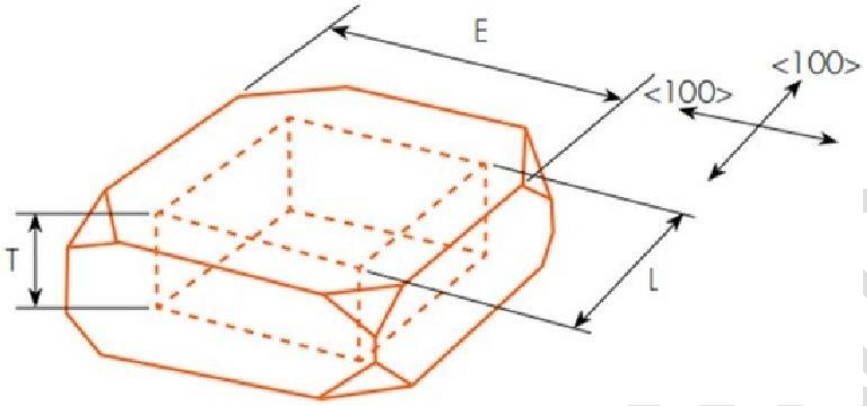
DIAMOND LARGE SINGLE CRYSTAL ROUGH

Characteristics

- Well-formed crystal shape, with at most a minor corner defect.
- The inscribed square side length is at least 75% of the overall crystal length.

Advantages

- Supplied direct from the manufacturer, with a wide range of product options.
- Produced using a slow-growth process for superior performance, effectively reducing instability during downstream machining.



E = standard length T = standard thickness L = inscribed-square side length (≥ 75% of E) {100}, 4-point orientation

Product Code	Standard Length	Thickness (mm)
SR2515	2.5mm–3mm	1.5mm–2mm
SR2530	2.5mm–3mm	3mm–3.5mm
SR3015	3mm–3.5mm	1.5mm–2mm
SR3020	3mm–3.5mm	2mm–2.5mm
SR3520	3.5mm–4mm	2mm–2.5mm
SR4020	4mm–4.5mm	2mm–2.5mm
SR4525	4.5mm–5mm	2.5mm–3mm

** Other sizes available on request — thickness generally increases with length.*

SN

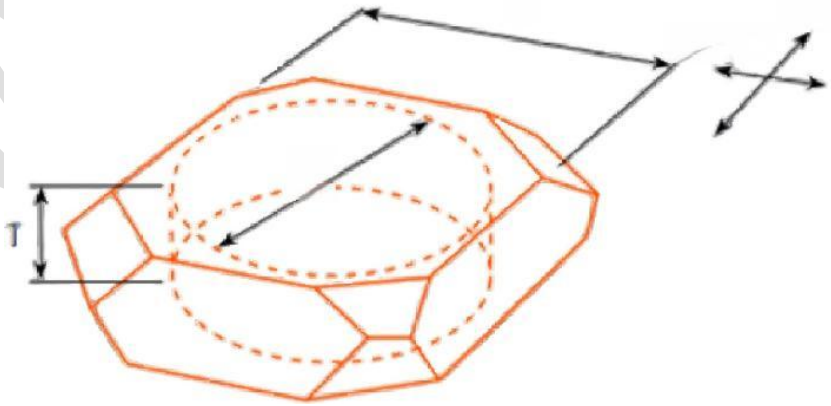
DIAMOND LARGE SINGLE CRYSTAL ROUGH

Characteristics

- Minor corner defects around the crystal perimeter.
- The inscribed circle diameter is at least 80% of the overall crystal length.

Advantages

- Supplied direct from the manufacturer, with a wide range of product options.
- Produced using a slow-growth process for superior performance, effectively reducing instability during downstream machining.



E = standard length T = standard thickness L = inscribed-circle diameter (≥ 80% of E) {100}, 4-point orientation

Product Code	Standard Length	Thickness (mm)
SN2515	2.5mm–3mm	1.5mm–2mm
SN2530	2.5mm–3mm	3mm–3.5mm
SN3015	3mm–3.5mm	1.5mm–2mm
SN3020	3mm–3.5mm	2mm–2.5mm
SN3520	3.5mm–4mm	2mm–2.5mm
SN4020	4mm–4.5mm	2mm–2.5mm
SN4525	4.5mm–5mm	2.5mm–3mm

Application Fields

Ultra-precision machining for aerospace, cutting tools, electronics, defense, laser & optical systems, healthcare, road-surface maintenance, automotive, stone/construction and other industries.

SC

MACHINED (SHAPED) DIAMOND LARGE SINGLE CRYSTAL

Characteristics

- A highly engineered, laser-cut product manufactured to specific shapes and dimensions to meet customer requirements.

- Machined from rough crystal produced in-house.

Advantages

- Supplied direct from the manufacturer, with continuous improvement based on customer needs.
- Suited to engineered cutting tools and wear parts used in ultra-precision machining, polishing and wire guiding.
- Available for bulk / volume supply.

Common machined shapes include cuboids, cylinders and triangular prisms — well suited for single-point, multi-point, blade, roller and rotary dressing applications.

Available Sizes

Product Code	Size (mm) — L x W x T
SC C403010	4mm x 3mm x 1mm
SC C303012	3mm x 3mm x 1.2mm
SC C403020	4mm x 3mm x 2mm

Product Code	Size (mm) — Edge Length x Thickness	Angle
SC S4020-60	4mm edge x 2mm thick	60°
SC S3010-90	3mm edge x 1mm thick	90°

Product Code	Size (mm) — Diameter x Thickness
SC Y4020	4mm x 2mm

** Non-standard customization available on request.*

STN / STT

TOWER-SHAPED DIAMOND LARGE SINGLE CRYSTAL ROUGH

STN — Tower-Shaped Rough (No Tip) / STT — Tower-Shaped Rough (With Tip)

Characteristics

- Tower-shaped crystal with a large height-to-diameter ratio, generally no less than 0.6; the crystal narrows gradually from base to top. Available with or without a tip.
- Supplied in as-grown (unprocessed) condition, with seed-growth striations visible at the base.

Advantages

- Uniform, orderly atomic arrangement, giving a complete and homogeneous crystal structure with consistent chemical and thermal properties.
- Suited to engineering cutting tools and wear parts used in ultra-precision machining, polishing and wire guiding.
- Precise control of temperature, pressure and catalyst conditions during synthesis ensures high crystal quality.

Batch Supply Sizes

Product Code	Standard Weight (ct)
STN15-	< 0.15ct
STN15	0.15ct – 0.3ct
STN30	0.3ct – 0.45ct
STN45	0.45ct – 0.6ct

Product Code	Standard Weight (ct)
STN60	0.6ct – 1ct
STN100	> 1ct
STT	Same as above

** Other sizes available on request.*

SD

DIAMOND SINGLE CRYSTAL WIRE-DRAWING DIE CORE

Characteristics

- 3-point {111} orientation, low nitrogen content, colorless and transparent.
- High hardness, high wear resistance, high stability and high thermal conductivity.
- Excellent impact resistance and toughness.
- Outstanding surface finish and machining precision.

Advantages

- Supplied direct from the manufacturer, with continuous improvement based on customer needs.
- Longer, more stable die service life.
- Higher-quality wire-drawing performance.

3-point <111> orientation diagram

OUR FACILITIES

EQUIPMENT & MANUFACTURING CAPABILITY

Our production base is equipped with a large fleet of proprietary HPHT synthesis presses, supported by a rigorous process-control system covering temperature, pressure and catalyst management at every stage of crystal growth.

CLIENTS SERVED

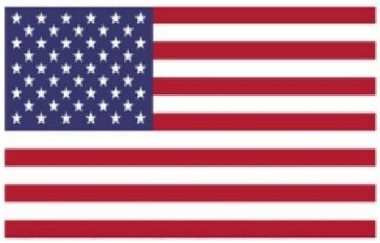
DIRECTLY AND INDIRECTLY SERVING OVER 3,000 ENTERPRISES

Category	Representative Clients / Partners
Electronics & Precision Manufacturing	Foxconn, Sumitomo, Körner
Luxury & Jewelry	Chow Tai Fook, Swarovski
Academic & Research	Jilin University, Peking University

Popular Across China, Renowned Overseas

Backed by years of technical accumulation and dedicated customer service, our Shining Diamond (Sscd) series of diamond large single crystals has achieved leading, world-class HPHT performance across a broad range of applications, supplying premium material to ultra-precision machining industries worldwide.

As precision manufacturing needs continue to grow more refined across every industry, demand for ultra-precision machining will keep rising. We remain fully committed to the research and production of HPHT diamond large single crystals, providing solutions for the cutting-tool industry and contributing to breakthroughs in ultra-precision machining around the globe.



United States

South Korea

India

CONTACT US

CUSTOMER SERVICE

NAENS DIAMOND

Wuxi Naens Technology Co., Ltd.

Tel: +86 134 0003 9933

Email: info@naens.com

Web: www.naens.com

Headquarters: National Bonded Zone, Jiangyin, Jiangsu, China | Production Base: Industrial Cluster Zone, Yanjin County, Xinxiang, Henan, China