

企业简介

厦门金鹭特种合金有限公司，是一家中外合资的国家级高新技术企业，是国有上市公司厦门钨业股份有限公司（股票代码：SH600549）的骨干成员。成立于1989年，主要从事钨粉、碳化钨粉、硬质合金、切削刀具等钨系列产品的生产；是中国最大的钨粉、碳化钨粉供应商和出口商；是高品质合金及精密切削工具的制造商。

公司拥有一支自强不息的、高素质员工团队，拥有国际一流的工艺技术、生产设备和检测仪器；其生产的“金鹭”牌系列产品以优良的品质和完善的服务，享誉国内外；客户遍布全球四十多个工业发达国家和地区。

ABOUT GESAC

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC) is a Sino-foreign joint venture company established in 1989. It is designated by the State as a high-tech enterprise. GESAC is the largest subsidiary of the Shanghai Stock Exchange listed company: Xiamen Tunsten Co., LTD. (Stock code: SH600549). Its main products are tungsten metal powder, tungsten carbide powder, cemented carbide, cutting tools and other tungsten related products. GESAC is the largest producer and exporter of tungsten metal powder and tungsten carbide powder in China and also enjoys good reputation in manufacturing high quality cemented carbide and precision cutting tools.

GESAC has a team of talented staff constantly striving to be stronger. GESAC is equipped with the world's most advanced technologies, manufacturing equipment and testing facilities. The "Golden Egret" brand products are renowned for high quality and excellent service. Our clients are spread across more than forty developed countries and regions all over the world.

公司建立了国家级技术中心，独立承担并完成了多项“国家科技支撑计划”项目、“国家科技重大专项”项目、“国家科技攻关计划”项目、“国家火炬计划”项目、“国家重点新产品”开发项目及省市重点研究课题，被评为“国家重点高新技术企业”、“先进技术企业”、“出口型企业”。

公司坚持以诚信为本的理念，致力于不断创新、发展成为“设备一流”、“技术一流”、“管理一流”、“质量一流”、“服务一流”的现代化企业。

GESAC owns a national level R&D center, and has undertaken and finished many national and provincial research projects independently, such as National Science and Technology Support Plan project, National major special science and technology project, National Key Technologies R&D Program, National Torch Program, National Important New Products project etc. GESAC has received numerous awards such as "National Standard High-tech Enterprise", "Enterprise with Advanced Technology" and "Export-oriented Enterprise" from the state government.

GESAC adheres to the philosophy of "sincerity and dependability are our essence" and strives to develop into a modern enterprise with "first class equipment, first class technology, first class management, first class quality and first class service".



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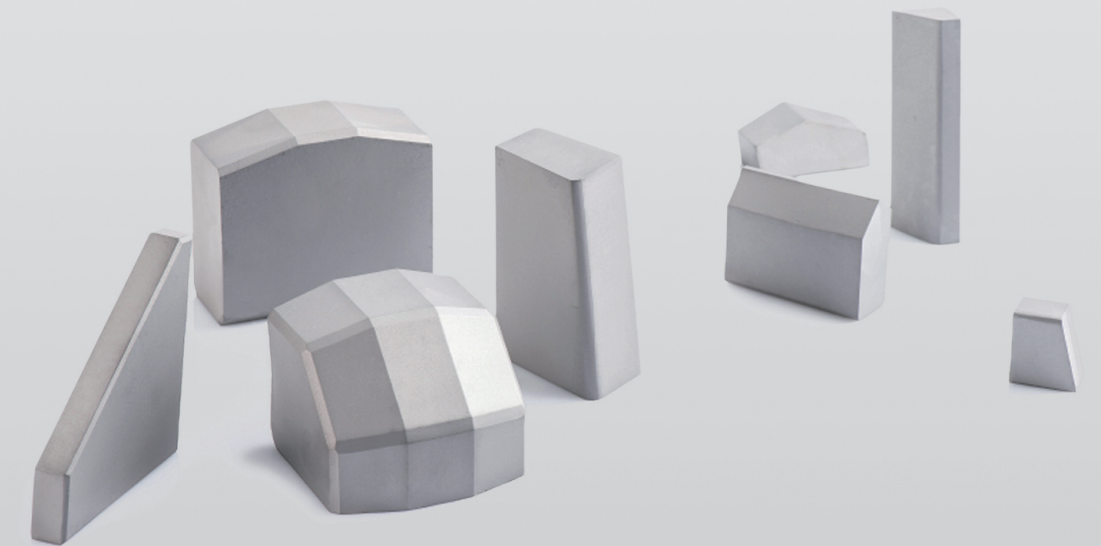


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盾构合金

CEMENTED CARBIDE BITS FOR TUNNELING BORER



厦门金鹭特种合金有限公司
Xiamen Golden Egret Special Alloy Co., Ltd.

盾构的合金运用

Application of Cemented Carbide Bits

盾构机，全名叫盾构隧道掘进机，是一种隧道掘进的专用工程机械，现代盾构掘进机集光、机、电、液、传感、信息技术于一体，具有开挖切削土体、输送土渣、拼装隧道衬砌、测量导向纠偏等功能。目前盾构掘进机已广泛用于地铁、铁路、公路、市政、水电等隧道工程。

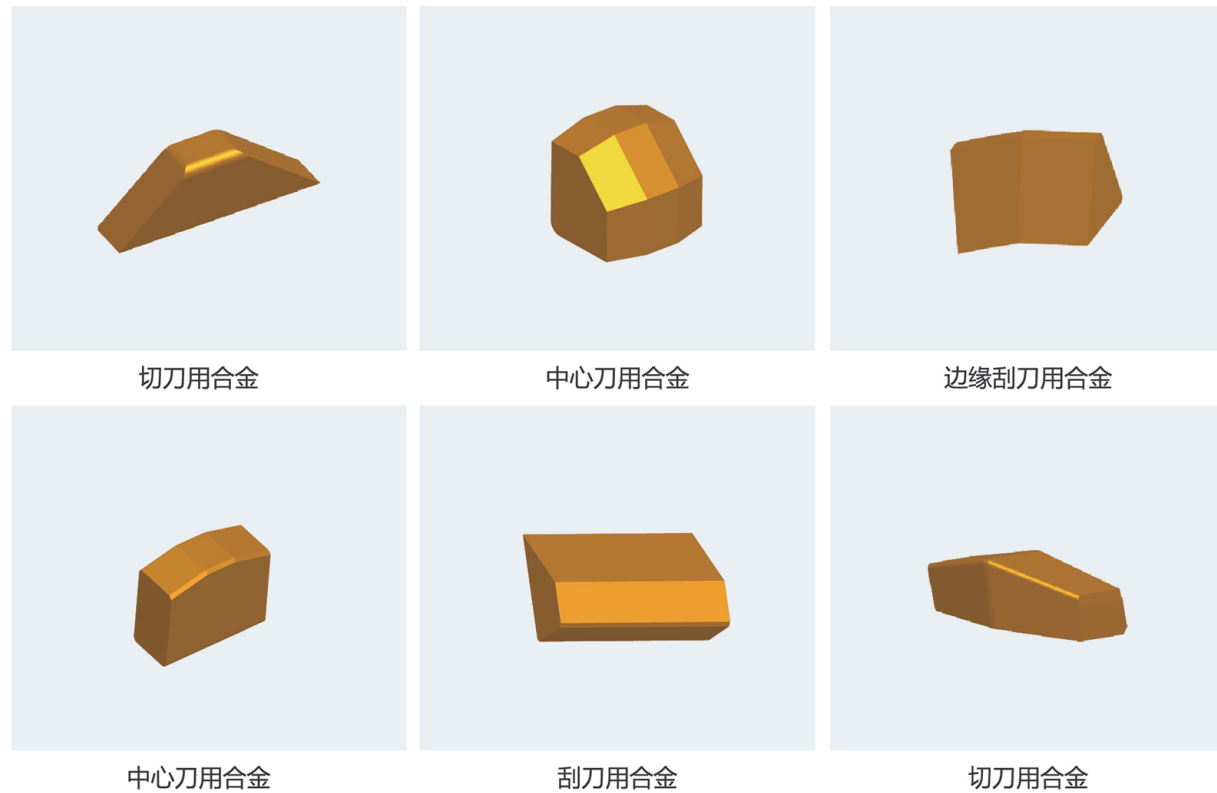
盾构刀具是装配在盾构主机上的掘进刀具。主要以滚刀和切削刀为主，滚刀主要用于掘进过程中的破岩工作，刀体主要以钢材为主。切削刀主要用于掘进过程中的土层切削工作，刀体材料多以合金焊接钢材为主。

盾构合金是用于隧道盾构机中的硬质合金刀片，通常采用钨钴硬质合金制作，要求合金具有较高的硬度、耐磨性及抗冲击韧性，其结构和成分视刀具作用的地层位置不同而有所差别。

TBM—Tunnel Boring Machine, engineering machinery for tunneling. Modern TBM has integrated the light, engine, electricity, liquid, sensing and information technology with the function of soil cutting, residue transporting, tunnel lining assembling and orientation rectification measuring. So far, the TBM has been widely used in subway, railway, highway as well as municipal engineering's tunneling work.

Tunneling cutters are assembled on the Tunneling borer machines for tunneling work. The main cutters are hob and scraper. The hob is mostly made of steel material for rock breaking. The scraper is usually made by cement carbide bits brazed on the steel body for scarping the earth and silt.

Shield alloy is the carbide cutters on TBM for tunneling work. Usually tungsten-cobalt alloy is used as material for the carbide bits, which requires the alloy has high hardness, wear resistance and impact toughness. The structure and composition of alloy are different according to the difference of the tool's functioning stratum.



金鹭的盾构合金

Cemented Carbide Bits for Tunneling Borer

作为世界一流的钨粉末与硬质合金制造商，我们拥有丰富的生产与应用经验，善于结合上下游技术来满足终端用户的使用需求。

针对目前国内外市场对高性能盾构合金的需求，我们开发的专用合金牌号具有硬度高，耐磨性能好，抗腐蚀性强，抗冲击韧性突出等优点，合金成品尺寸精度高，平整性好，焊接效果稳定，性价比高，应用范围广。

目前金鹭生产的盾构合金已成功配套国内外多台盾构主机，广泛应用于国内外隧道的挖掘工程。

As the world-class manufacturer of tungsten powder and cement carbide products, GESAC has rich experience in production and application.

To meet the high performance request for the bits of the global market, we have developed the exclusive grade with good hardness, toughness and wear-resisting for tunneling work. The finished parts have advantages on dimension-precision, face-smoothness, brazing-stability and cost-equity.

Our tunneling bits have been widely assembled for the global tunneling borer machines and successfully applied to the worldwide tunneling projects.

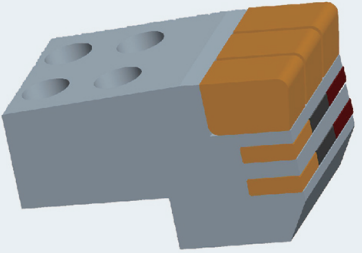
牌号系列

Grades Profile

牌号 Grade	晶粒度 Grain Size	粘结相 Binder%	密度 Density g/cm ³	硬度 Hardness (HRA)	抗弯强度 TRS (MPa)	性能与使用推荐 Property and Application	金相图 Metallography
GD40	中 Mid	12	14.30	86.8	≥2800	具有良好的韧性及抗热疲劳性能，主要用于盾构刀头。With good toughness and anti-thermal fatigue performance, applicable to mining bits and TBM cutters.	
GD25A	中 Mid	10	14.50	88.5	≥2900	耐磨性高于GD40,用于中韧性需求的挖掘作业，适用于盾构刀头。This grade's wear-resistant performance is better than GD40, applicable to medium toughness tunneling work.	
GK60	中 Mid	12	14.30	88	≥2600	韧性耐磨性高，适用于中硬以及各种复杂工况岩层的挖掘。With good toughness and wear-resistant performance, applicable to hard rock tunneling work as well as other complicated rock-crushing condition.	

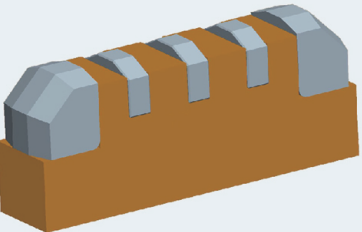
典型配套刀具

Solid Cutters Diagram



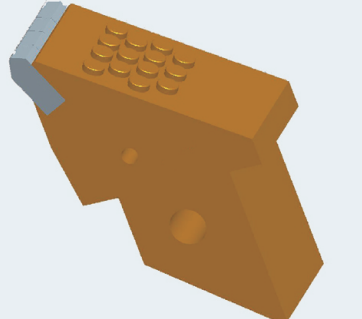
刮刀 Scraper

切削软质岩石、土层或刮削渣土的刀具。
Cutting soft rock and soil or scrapping the muck.



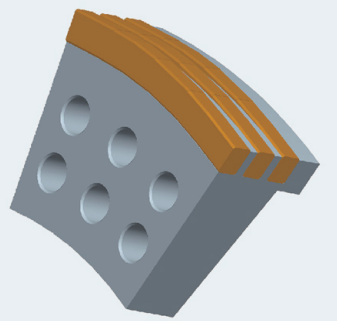
中心刀 Center Cutter

安装在盾构机刀盘中心位置，具有定位与切削功能的刀具。
Installed in the center of the TBM with the function of positioning and cutting.



先行刀 The Front Cutter

先于其他刀具接触地层，犁削软质岩石及土层的刀具。采用先行刀可显著增加切削土体的流动性，降低刀盘扭矩，提高切削效率。
Ploughing the soil before any other cutters of TBM, this will remarkably increase the liquidity of soil, reduce the torque of the cutters, and raise cutting efficiency.



周边刮刀 Scrapers

切削软质岩石和土层、刮削渣土的刀具。
Cutting and moving soft rock and silt.