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AODE premium-quality cutting tools

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One of largest research and development production bases of high-end cutting picks



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- 中国高端截齿制造商
Chinese high-end pick manufacturer
- 军工企业军工技术
Military industry technology



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安徽澳德矿山机械设备科技股份有限公司
Anhui Aode Mining Machinery & Equipment Technology Co., Ltd.

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董事长致辞

Chairman's speech

坎坷的昨天, 有你们相伴
璀璨的今日, 有你们相伴
辉煌的明天注定与你们相随
汗水与心血的凝结, 释放卓越自我
泪水与激情的融合, 铸就美满的世间
漫漫人生路
愿用我们的真心
换来事业的顺心
家庭的温暖

Bumpy yesterday, accompanied by you
Bright today, accompanied by you
A brilliant tomorrow is destined to follow you
The condensation of sweat and painstaking effort, release the outstanding self
The fusion of tears and passion, cast a happy world
Long Life
Willing to use our heart
In exchange for the cause of happiness
The warmth of family

李保华

BAOHUA LI

澳德钎具 愿与您一起腾飞共创辉煌

Aode tools bring you prosperity

- 澳德核心理念：诚信求双赢

Aode's core idea: integrity leads to a win-win situation

- 澳德企业宗旨：以诚为本，永续经营

Aode's enterprise purpose: credibility and sustainable operation

- 澳德企业精神：与时俱进，开拓创新

Aode's enterprise spirit: keep pace with the times and make innovations in a pioneering spirit

- 澳德企业目标：永争第一

Aode's business goal: strive for the best forever

- 澳德企业价值观：为社会创造财富

Aode's corporate values: to create wealth for the society

- 澳德企业使命：振兴钎具事业

Aode's corporate mission: promoting drilling business

- 澳德企业作风：团结奋进，务实高效

Aode's corporate style: make concerted efforts, be pragmatic and efficient

- 澳德管理理念：以人为本，注重实效

Aode's management philosophy: people-oriented, and practical

- 澳德经营理念：诚信经营，利益共享

Aode's business philosophy: and sharing benefits

- 澳德服务理念：以客户为关注焦点

Aode's service concept: focus on customers' needs

- 澳德竞争理念：抓机遇，抢先机

Aode's competition concept: seize the opportunity, take preemptive chances

- 澳德投资理念：不求最大，但求最好

Aode's investment philosophy: aim at the better

- 澳德发展理念：学习奋斗，永创新高

Aode's development philosophy: forge ahead and aim high

- 澳德生存理念：居安思危，不断进取

Aode's survival concept: be sober-minded and keep going

- 澳德用人理念：德才兼备，人尽其才

Aode's service concept: focus on customers' needs

- 澳德教育理念：理论联系实际，育人为本

Aode's education concept: combine theory and practice together, cultivating students

- 澳德产品开发理念：以市场为导向，满足客户需求

Aode's product development philosophy: be market-oriented and meet customer demands

- 澳德宣传理念：体现澳德价值，打造知名品牌

Aode's propaganda idea: reflect the value of Aode, build renowned brands

致力于 安全生产与服务

Committed to the safe production
and service

诚信
立业
A business
of integrity

诚信是企业之本 诚信是企业之魂
Honesty is the basis of an enterprise, integrity is the soul of a enterprise

专家
品质
Expert
quality

以质量求生存 以创新求发展
To ensure organizational survival through assured quality and maintain
Constant growing through innovation

和谐
共赢
Harmony
and win-win
共赢未来 携手共进
To work together and forge ahead

服务
社会
Serve the
society

真诚服务 客户至上 是企业永恒的社会使命
Sincere service and customer first are the social mission of the enterprise



企业简介

Corporate Profile

一、企业成立时间及注册资金

安徽澳德矿山机械设备科技股份有限公司原名称为安徽澳德矿山机械设备有限公司，成立于 2010 年 5 月 24 日注册地址阜阳市颍上县工业园区（管鲍路与港口路交叉口），注册资金肆仟万元。2015 年 4 月 1 日进行股份制改制，名称变更为安徽澳德矿山机械设备科技股份有限公司。公司占地 88 亩，其中厂房 11 栋，面积近 30000 平方米，行政楼 1 栋，面积 2234 平方米，宿舍楼 1 栋，面积 2000 平方米。

二、经营范围及主要产品

公司是一家集矿山机械设备研发、生产、销售于一体的民营企业，主要生产各种型号矿用配件、汽车零部件及军工产品。所研发生产的澳德牌 U84、U94、U135、S200A 型截齿被安徽省科技厅认定为高新技术产品，其中 U135 型截齿同时认定为省重点新产品，S200A、U135 及 U95 产品被省经信委认定为省级新产品。公司先后通过了 ISO9001 质量体系认证及 14000、18000 职业健康环境体系认证，武器装备生产许可证，以及 16949 质量体系认证。

三、生产规模

年产煤矿用掘进机截齿、采煤机截齿和公路截齿 120-150 万只，齿套 20 万只，齿座 10 万只。年产各种型号钻头 20 万只，其中：金刚石锚杆钻头 15 万只，金刚石复合片不取芯钻头 3 万只，金刚石复合片取芯钻头 2 万只；年产 B19 煤矿锚杆钻机用回转钻杆 2000 吨，H22 风钻杆 5000 吨，软岩钻杆、煤钻杆 1000 吨。产量、产值均居亚洲同类企业首位，产品覆盖全国。

四、公司成果

截至 2021 年 6 月公司拥有 PCT 国际专利 2 项、发明专利 3 项、实用新型专利 40 余项，软件著作权 40 项，国际商标 4 项，连续获得多项荣誉：

曾获“重质量守诚信优秀示范单位”、“安徽省优秀民营企业”、“安徽市场产品质量达标企业”、“安徽省 AAAA 级信用企业”、“安徽省明星企业”、“安徽省著名商标称号”、“省级专精特新企业”；组建了安徽省唯一一家矿山钻采掘专用切割设备工程技术研究中心。

- 2016 年 • 安徽省科技进步奖三等奖，U135 截齿获批安徽省新产品，安徽省矿山行业十强企业；
- 2017 年 • 澳德公司被评为全国产学研示范企业，同年 10 月通过高新技术企业的复审，同时也被评为省、市两级企业技术中心，省级创新型示范企业，省级科技进步奖企业、安徽省质量奖等称号；
- 2018 年 • 获批省级技术创新示范企业；
- 2019 年 • 获批省级绿色工厂、省级工业设计中心等；
- 2020 年 • 获批省级院士工作站，专精特新销售单打冠军企业；
- 2021 年 • 启动了诸多国字认证；

未来五年计划：安徽澳德计划在十四五末，完成年产值 10 亿元，致力成为行业标杆企业。





领导关怀

Government
Support



澳德产品系列

Aode products series



特点 Characteristics



- ① 截齿的耐磨性能显著提高，使用先进的等离子熔覆强化技术在截齿头部熔覆一层高硬度金属陶瓷层，该金属陶瓷层具有硬度高、韧性好、耐磨耐冲击等特点，很好的保护了截齿齿体头部，降低了头部齿体磨损速度，使齿体与合金头同步磨损，达到了最优配合。

Wear-resisting performance improved significantly, the use of advanced plasma cladding reinforcement technology in a high hardness metal ceramic cutter tooth head cladding layer, the metal ceramic layer has high hardness, good toughness, wear resistance, hit- resistance and other characteristics. It well protected the head of the cutting teeth, head tooth body wear rate reduced to synchronize the tooth body and alloy head wear, reached the optimal coordination.

- ② 抗弯性能显著提高。根据截齿在使用过程中的断裂部位及弯曲情况。使用先进的分析软件 ANSYS 对截齿进行了使用过程受力破坏计算机模拟分析，并根据分析结果研发出了独特的热处理工艺等生产加工工艺。使齿体的整体抗弯能力及齿柄的表面强度得到了很大提高，保证了截齿的正常使用。

The bending performance improved significantly. According to the cutting tooth in the process of fracture area and bending condition. Use of advanced analysis software ANSYS in the process of stress in cutting tooth in computer simulation analysis, and according to the results of the analysis has developed unique heat treatment process such as production and processing technology. Make the overall flexural capacity of the tooth body and tooth surface of the handle strength has been greatly improved, to ensure its normal use.

- ③ 使用过程中“不产生火花”。普通截齿在使用过程中特别是割岩石过程中会产生大量的火花，给煤矿生产带来了极大的安全隐患。我公司生产的等离子熔覆一层高硬度的金属陶瓷层，该陶瓷层使截齿在使用过程中产生的火花量减少了 90% 以上，极大的提高了煤炭开采的安全性。

No sparks in the using process. Normal section tooth in use process, especially in the process of rock cutting will produce a lot of sparks, brought great potential safety hazard to mine production. Our company produces the plasma cladding layer hardness of metal ceramic layer, the ceramic layer makes the cutting tooth in the process of using sparks to decrease by more than 90%, greatly increase the safety of coal mining.

截齿是采煤机和掘进机的直接切割刀具，工作条件非常恶劣，在使用过程中受到煤层或岩石的摩擦和冲击作用，一般工作寿命都比较短，其主要失效形式是因为截齿头部齿体磨损过快导致合金头脱落或者是齿体抗弯性能差在受强力作用下弯曲或折断。

Cutter tooth is direct cutting of coal winning machine and boring machine, working condition is very poor, in use process of coal or rock friction and impact, the average working life is relatively short, its main failure forms because cut head tooth wear body too cause alloy head falls off or is under strong teeth bending performance is poor in body bent or broken.

U135



【 Super Wear Resistant U135 With Wings 】

【 U135(A) 】

【 U135(B) 】

U47



【 U47(A) 】

【 U47(B) 】

S100



【 S100 】

S120



【 S120(A) 】

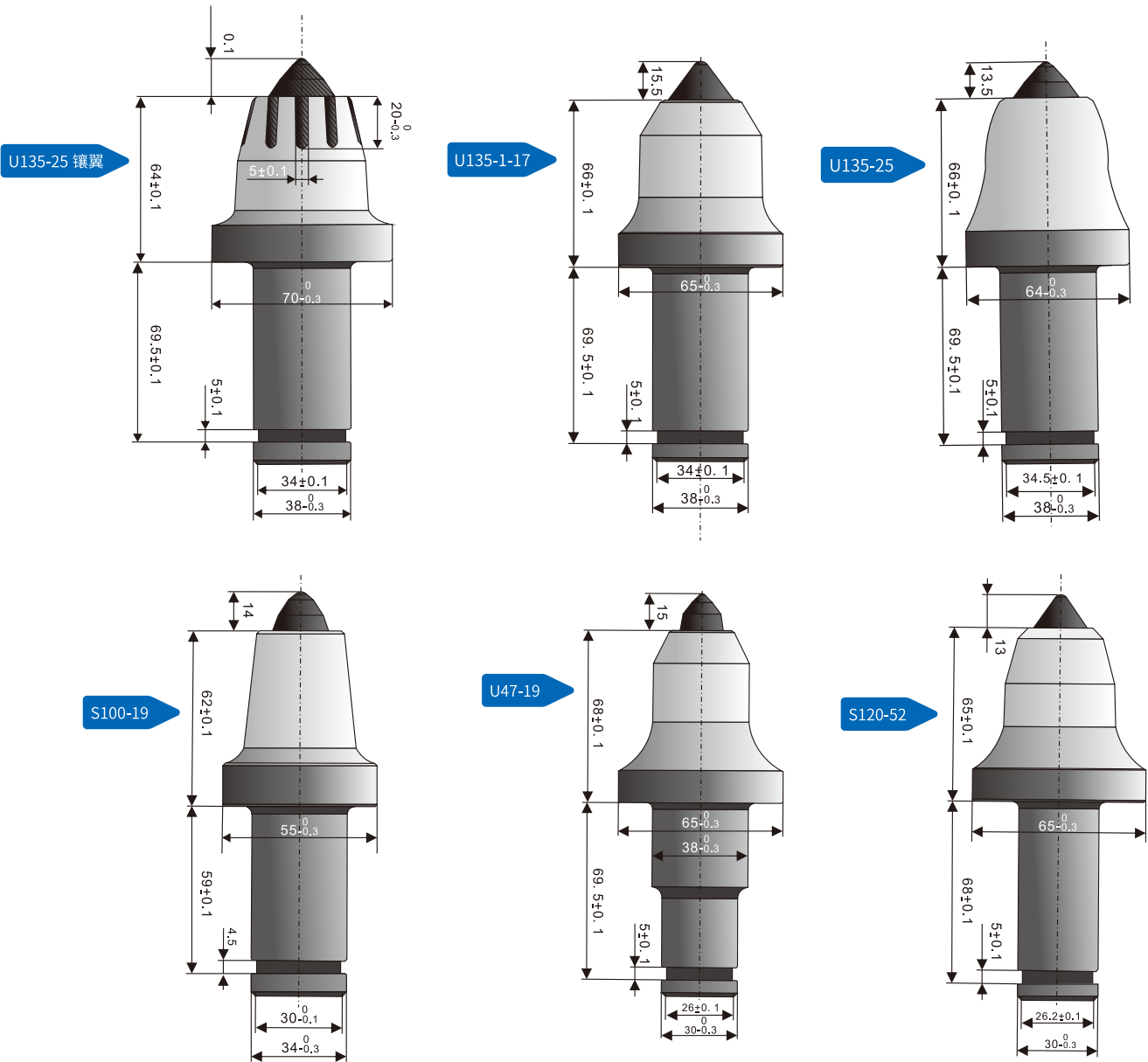
【 S120(B) 】



【螺旋形 135】

U135 镶翼超耐磨型 / Super Wear Resistant U135 With Wings

产品型号 Product model	齿头长 The tooth head length	柄径 Shank diameter	总长 Total length of	硬度(HRC) Hardness (hrc)	抗剪强度(MPa) The shear strength(mpa)	冲击韧性(aKU) Impact toughness (aku)
JGC65/30	65±0.95	φ30±0.05	128±1.20	≥40HRC	≥180	≥49J/cm
JGC80/30	80±0.95	φ30±0.50	151±1.20	≥40HRC	≥180	≥49J/cm
JCC78/30	78±0.95	φ30±0.50	145±1.20	≥40HRC	≥180	≥49J/cm
JGC88/35	88±0.95	φ35±0.05	181±1.20	≥40HRC	≥180	≥49J/cm
JGC102/35	102±0.95	φ35±0.50	195±1.20	≥40HRC	≥180	≥49J/cm
JGC104/43	104±0.95	φ35±0.05	223±1.20	≥40HRC	≥180	≥49J/cm



采煤机截齿系列

Shearer cutting gear series



产品展示

Production Exhibition



U84



【U84】

U84



【螺旋形 84】
U84 Spriral Grooved

U95



【U95 无火花耐磨激光熔覆型】
U95 no spark wear resistant laser cladding type

95#



【螺旋形 95】
U95 Spriral Grooved

U170



【U170】

95#



【镶翼型 95】
U95 Carbide Embedded

55 型刀齿



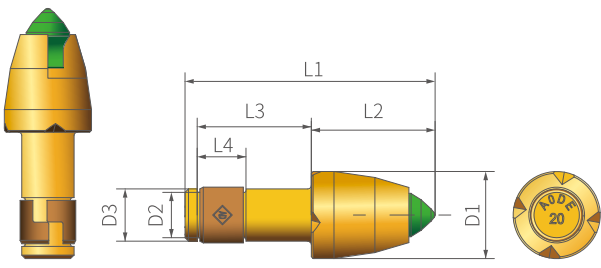
【AODE 55 型刀齿】
AODE55 Type cutter

采煤机截齿系列

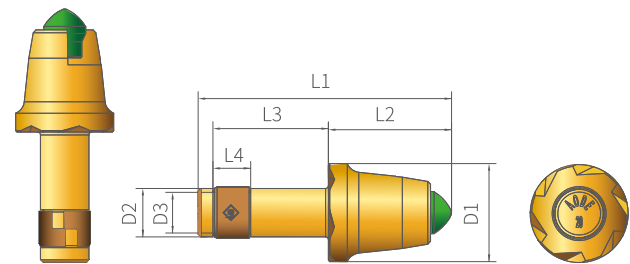
Shearer cutting gear series



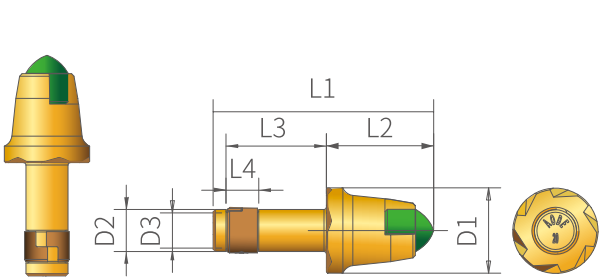
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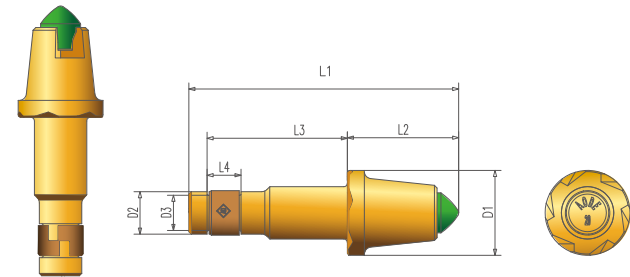
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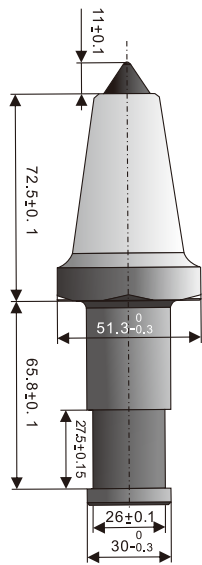
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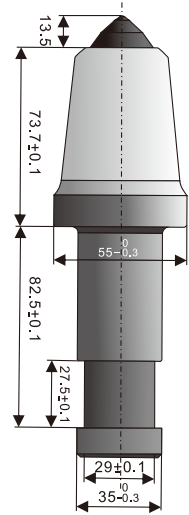
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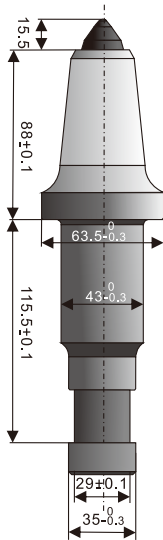
U95-17



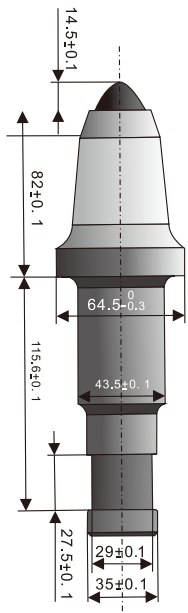
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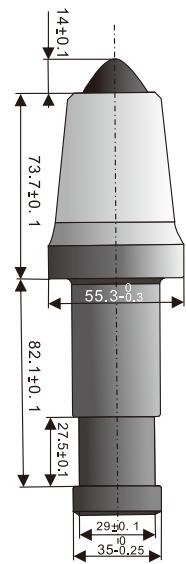
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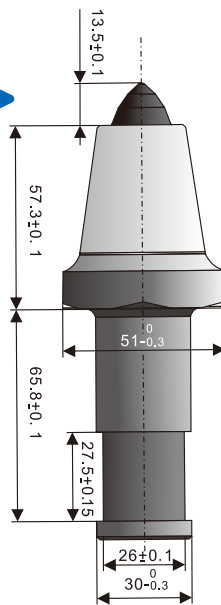
U170-17



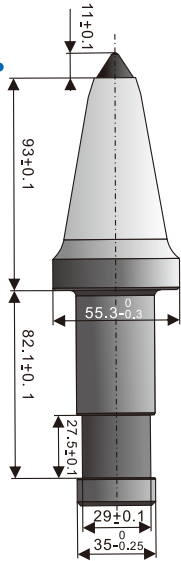
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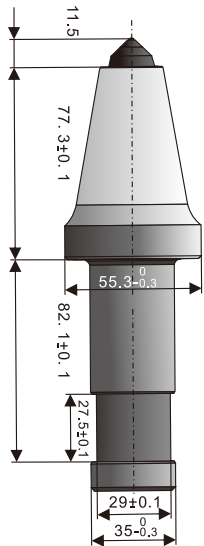
U84-19



U92-18



U94-19



各种型号的齿套齿座

Tooth Holder & Fixing Sleeve in Various Sizes



金刚石复合片钻头

PDC Drilling bits



系列 / Series	金刚石复合片钻头 / Diamond compact drill
全片系列 / Whole PDC button series	28、30、32、36、38、40、42
半片系列 / Half PDC button series	28、30、32、36、38、40、42

金刚石钻头系列

PDC Bit Series



- 1、 $\phi 25$ 、 $\phi 27$ 、 $\phi 28$ 、 $\phi 29$ 、 $\phi 32$ 、 $\phi 36$ 、 $\phi 42$
- 2、正确使用金刚石锚杆钻头是充分发挥其效益的关键，我们热忱为您提供售后服务和技术咨询，也可根据用户要求制造特殊规格类型的锚杆钻头。
- 1、 $\phi 25$ 、 $\phi 27$ 、 $\phi 28$ 、 $\phi 29$ 、 $\phi 32$ 、 $\phi 36$ 、 $\phi 42$
- 2、The correct use of the PDC bits is the key to giving full play to their benefits. We sincerely provide you with after-sales service and technical advice, can also according to user requirements to make special types of anchor rod drilling.



金刚石 (PDC) 复合片锚杆钻头与地质钻头，类型分为：普通型、超强型、天然型、人造型、表镶型、孕镶型、取芯型、无芯型、扩孔型、刮刀型；规格 (mm) 有： $\phi 25$ 、 $\phi 26$ 、 $\phi 27$ 、 $\phi 28$ 、 $\phi 29$ 、 $\phi 30$ 、 $\phi 32$ 、 $\phi 36$ 、 $\phi 38$ 、 $\phi 42$ 、 $\phi 60$ 、 $\phi 65$ 、 $\phi 75$ 、 $\phi 89$ 、 $\phi 94$ 、 $\phi 98$ 、 $\phi 113$ 、 $\phi 153$ 。

Diamond compact (PDC) bit anchor and geological drill bits, types include: ordinary, super type, natural type, artificial type, surface embedded, embedded, barrel type, wing type, expanding groove, scraper type;

Specifications (mm) : $\phi 25$ 、 $\phi 26$ 、 $\phi 27$ 、 $\phi 28$ 、 $\phi 29$ 、 $\phi 30$ 、 $\phi 32$ 、 $\phi 36$ 、 $\phi 38$ 、 $\phi 42$ 、 $\phi 60$ 、 $\phi 65$ 、 $\phi 75$ 、 $\phi 89$ 、 $\phi 94$ 、 $\phi 98$ 、 $\phi 113$ 、 $\phi 153$.

钎头钎杆系列

Drill bits & rods series

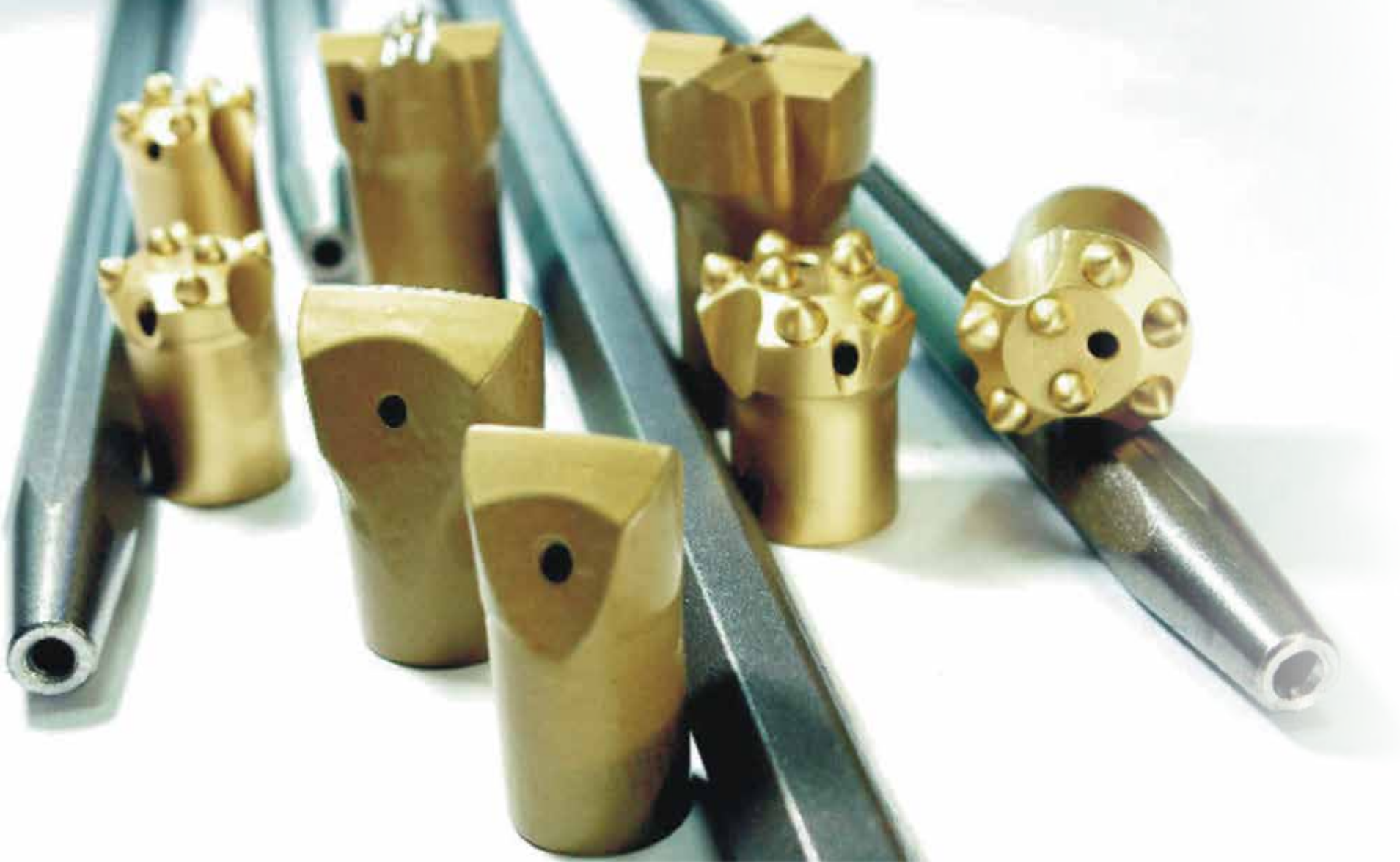
锥形连接中空六角形钎杆使用须知 / The hollow conical connection Hexagon rod usage instructinos

为了正解使用钎杆,保证正常使用寿命,须注意以下几点:

In order to properly use drill rods and ensure the normal service life, we must pay attention to the following:

- 1、根据试验对比或下述推荐使用条件表,正确选用钎杆类型
(主要参考凿岩机功率和岩石参数)。
- 2、公司锥形钎产品在杆体和领盘处有“AD”商标,从杆体往尾看,领盘“AD”字开口向右为凹型,杆体是凸标记,优钎标记为“AD · I”、“AD · II”,普钎标记为“AD”、“AD-1”。为了进行产品质量追踪,杆体上还有生产批号。
- 3、应保证钎杆与钎头配合良好(锥度一致); 如果钎杆锥度小于钎头锥度,则易断梢尖。
- 4、对于凿岩孔深 >2.0 米,推荐采用套钎,即先用短钎杆开孔,然后再用长钎杆继续延伸打孔,以提高钎杆使用寿命(根据孔深情况,可采用 2 根套钎或 3 根套钎)。
- 5、开孔时应稳,适当降低推进风量,避免钎杆在弯曲状态下工作,否则将会缩短钎杆使用寿命。
- 6、在打孔及退出过程中,尽量避免钎杆弯曲受力,以提高钎杆的使用寿命。
- 7、应根据现场条件(岩石情况),调整凿岩机的风量,保证凿岩正常工作。
- 8、对于卡钎的岩石状况,应使用十字型钎头。
- 9、用户不得随意改变钎杆结构或经再加工后进行使用,以免影响钎杆的正常使用寿命。
- 10、当正常使用普通钎杆易出现批量早期断裂时,应换用优钎; 当优钎不适用时,应换用大规格钎杆,或降低风压。
- 11、钎杆杆体直径应与凿岩机功率匹配,功率大则应选用大规格钎杆。

1. According to the test comparison or the following recommended use condition table, select the drill rod type correctly(Mainly refer to the power of rock drill and rock parameters).
2. The company's tapered drill products have the "AD" trademark on the rod body and the collar. From the end of the rod body, the opening of the collar "AD" is concave to the right, and the rod body is a convex mark, which is excellent.It is marked as "AD · I" and "AD · II", and the common drill is marked as "AD" and "AD-1". In order to track product quality, there is also a production batch number on the rod.
3. It should be ensured that the drill rod and drill bit fit well (the taper is the same); if the taper of the drill rod is smaller than the taper of the drill bit, the tip is easy to break.
4. For rock drilling depths >2.0 meters, it is recommended to use sleeve drills, that is, use a short drill rod to drill the hole first, and then use a long drill rod to extend the hole to improve the service life of the drill rod.(According to the hole depth, 2 sets of drills or 3 sets of drills can be used).
5. When opening the hole, it should be stable, and the air volume should be reduced appropriately to avoid the drill rod from working in a bent state, otherwise the service life of the drill rod will be shortened. 6. In the process of drilling and withdrawing, try to avoid the bending force of the drill rod to improve the service life of the drill rod.
7. The air volume of the rock drill should be adjusted according to the site conditions (rock conditions) to ensure the normal work of the rock drill.
8. For the rock condition where the drill is stuck, a tapered cross drill bit should be used.
9. The user is not allowed to change the structure of the drill rod at will or use it after reprocessing, so as not to affect the normal service life of the drill rod.
10. When the normal use of ordinary drill rods is prone to early batch fracture, you should switch to superior drills; when the superior drills are not applicable, you should switch to large-size drill rods, or reduce the wind pressure.
11. The diameter of the drill rod body should match the power of the rock drill. If the power is high, a large-size drill rod should be used.



锥形钎杆产品特别提示 / Special tips for taper drill rod products

对于出现早期批量钎杆失效(炸顶、堆顶、断裂)的情况,应及时通知我公司,以便及时处理。通知应包括以下主要内容:

Failure to appear early batch drill rod (Fried roof, roof, fracture), shall promptly notify the company, to handle in time. Notification shall include the following main contents:

- 1、使用空压机型号、额定压力 / 最高压力、储气量、一台空压机带几台凿岩机。
- 2、使用的凿岩机型号、风压、耗气量。
- 3、岩石类型及硬度(普氏系数 f 或单轴抗压强度),施工地点(露天、地下、隧道、其它),钻孔深度,钻孔施工方式(向下式、水平式、扇形式、其它)。
- 4、钎杆早期失效情况统计:
 - a、失效钎杆批号(杆体上的标记)、长度、总订货量、已使用量。
 - b、失效部位及对应的数量和寿命。
 - c、正常使用平均寿命。
 - d、计划使用寿命。

- 1, Use air compressor model number, rated highest pressure/pressure, gas storage, several drill with an air compressor.
- 2, The use of the rock drill model, wind pressure and gas consumption.
- 3, Rock type and hardness (coefficient f or the uniaxial compressive strength), the construction site (, tunnels, underg-round and other), drilling depth,Drilling construction methods (downward, and horizontal, fan form, other
- 4, Early april and drill rod failure situation statistics: A batch number, failure of drill rod (tags) on the rod body, length, total quantity of goods, has been used. B, the failure parts and the corresponding quantity and longevity. C, the nor-mal use of the average life expectancy. D, the service life of the plan.

钎头钎杆系列

Drill bits & Rods series



【球齿钎头】
Tpered Button Bits
(φ28-43mm)



【十字形钎头】
Tapered Cross bits
(φ32-65mm)



【一字形钎头】
Tapered Chisel bits
(φ28-42mm)

钎头规格 (mm) Drill bit specification (mm)		连接锥度 Connected to the taper	合金片型号 a Alloy plate model a	合金牌号 b Alloy number b	
产品参数	φ32、φ34、φ36、φ38、 φ40、φ42、φ44、φ46		7°(4.8°、12°)	A、B、C A、M、C、D、 E、F、N	
	合金牌号 Alloy number	适用岩石类型 Types applied to rock	适用岩石种类 Types applied to rock	建议使用场所 Recommended place To Use	钎头规格 (mm) Refer to the plat's hardness (f)
推荐使用范围	A	中硬岩、软岩 In the hard rock, soft rock	石灰岩、混合花岗岩、片麻岩等 Limestone, mixed granite, gneiss, etc	采石场、煤矿、部分金属矿等 Quarry, coal mines, some metal, etc	f=13 以下 F = 13 below
	M	坚硬岩、较硬岩 Hard rock, hard rock	花岗岩、磁铁矿、贫铁矿、石英岩等 Granite, magnetite, lean iron ore, quartz, etc	金、铁、铜矿、工程施工等 Gold, iron, copper, engineering construction, etc	f=16 以下 F = 16 below
	C	软岩、中硬岩 In the soft rock, hard rock	混合花岗岩、闪长岩、变质砂岩等 Mixed granite, diorite, metamorphic sandstone, etc	采石场、铁矿、工程施工等 Quarry, iron ore, engineering construction, etc	f=13 以下 F = 13 below
	D	较坚硬岩、中硬岩 In the hard rock, hard rock	硅化白云岩、铁矿岩、磁铁矿等 Silicified rock dolomite, iron ore, magnetite, etc	金属矿、采石场、工程施工等 Metal mines, quarries, engineering construction, etc	f=15 以下 F = 15 below
	E	坚硬岩、硬岩 Hard rock, hard rock	磁铁矿、坚硬石英岩、致密硅化石等 Magnetite, hard quartzite, dense silicon fossils, etc	金、铁、铜矿、有色金属矿 Gold, iron, copper, non-ferrous metals	f=18 以下 F = 18 below
	F	硬岩、中硬岩 In the hard rock, hard rock	赤铁矿、磁铁矿、花岗岩等 Hematite, magnetite, granite, etc	金属矿、工程施工等 Metals, engineering construction, etc	f=16~18 F = 16~18 below
	N	硬岩、磨蚀岩 Hard rock and abrasion	坚硬石英岩、赤铁矿、坚硬砂岩等 Hard quartzite, hematite, hard sandstone, etc	金属矿、工程施工等 Metals, engineering construction, etc	f=16~17 F = 16~17 below

注： a： A- 高片； B- 常规片； D- 低片。高度不同,可重磨次数不同。

Note: b： 不同合金牌号适应不同凿岩情况。

a: A - high slice; B - conventional slice; D - low. Height is different, can be heavy grinding number are different.
b: different alloy grades adapt to different drilling conditions.



【 B22 钎杆】
B22 drill rod



【 B25 钎杆】
B25 drill rod

规格 Specifications	对边尺寸 For edge size	尾柄长度 Length of the handle end	钎杆长度 ① Length of the drill rod (1)	钎杆长度 ② Length of the drill rod (2)	钎杆长度 ③ Length of the drill rod (3)
H22 (B22)	22mm	108mm	0.5~9.0m	7°(12°、4.8°)	AD
H25 (B25)	25mm	159mm(108mm)	0.6~9.0m		AD I
H19 (B19)	19mm	108mm	0.4~6.0m		AD II AD-1

连接式锚杆钎杆
Connected anchor drill





连接器 连接套
The Connector Connected Cap

- 锚杆钎杆(B19、B22)材料选用特殊中空六角钢制造,适合配套各种液压锚杆钻机钻孔使用。具有连接迅速,可适应任何角度、方便快捷等特点。

Anchor drill (B19, B22) choose the materials of special hollow hexagonal steel , suitable for supporting all kinds of hydraulic bolt drilling rig. It can connect rapidly, can adapt to any Angle, fast and convenient, etc.

锥形钎杆产品类型和推荐使用条件表 / Product Types And Is Recommended To Use Conditions Form Conical Drill Rod

类型 Type	标记 Tag	推荐使用条件 Recommended Conditions Of Use
普钎 At the brazing	AD AD-1	① 岩石硬度：中硬岩、软岩 岩石参数：普氏分类：Ⅲ类以下,F<15 单轴抗压强度 <150MPa ② 凿岩机冲击功 <67 焦耳 代表机型：YT24 (1) rock hardness in hard rock, soft rock Classification of rock parameters, platts: III class here, F < 15 Uniaxial compressive strength < 150 mpa (2) the drill impact energy < 67 joules typical models: YT24
优钎 Optimal bit	AD· I AD· II	① 岩石硬度：中硬岩、软岩 岩石参数：普氏分类：Ⅲ类以下,F<15 单轴抗压强度 <150MPa ② 凿岩机冲击功 <67 焦耳 代表机型：YT24 (1) rock hardness: hard rock, hard rock, hard rock, soft rock) in (Classification of rock parameters, platts: III class above, f 15 or more Uniaxial compressive strength of 150 mpa or higher (2) the drill impact p 76 joules On behalf of the models: YT28

注： 推荐使用条件是指当其中任一条件满足时,都应采用所推荐的钎杆类型,否则将造成使用不当。
Note: 我公司主张多用优钎,它的适用范围广,用户可得到好的性价比,提高工作效率和效益。

Recommended conditions refers to the situation when any condition is met, people should adopt the recom-mended type of drill rod, otherwise it will result in improper use. Our company advocates multi-purpose optimal bit and its applications are wide and the user can get good cost performance, improve the work efficiency and benefits.

根据不同的岩石选择不同的凿岩钎具 (特别是钎头) 是实现凿岩工作的一个重要原则。
到目前为止还没有一个大家公认的岩石可钻性分级办法, 为了便于指导, 这里给出广泛采用的普氏分级表。

According to the different choice of different rock drilling and drilling tools (especially the drill bit) is an important principle of realization of drilling work. So far as Check is not a generally accepted rock drillability classification method, in order to guide, here are widely used in platts classification table.

普氏岩石分级表 / Platts rock classification table

等级 Level	坚固程度 Hardness	代表性岩石 Representative rock	f
I	最坚固 The strongest	最坚固、最致密和高韧性的玄武岩及石英岩, 其他各种特别坚固的岩石 The strongest, the most dense and high toughness of basalt, quartzite and other kinds of particularly strong rock	20
II	很坚固 Very firm	很坚固的花岗岩、石英斑岩、硅质片岩、比 I 级稍软的石英岩、最坚固的砂岩和石灰岩 Very solid granite, quartz porphyry, siliceous schist, quartzite, soft than class I the hardest Solid sandstone and limestone	15
III	坚固 Strong	致密的花岗岩及花岗质岩石、很坚固的砂岩和石灰岩、石英质矿脉、坚固的砾岩、很坚固的铁矿石 Density of the granitic rocks, granite and sandstone and limestone, with a strong quartz vein, Strong conglomerate, very strong iron ore	10
IIIa	坚固 Strong	坚固的石灰岩、不坚固的花岗岩、坚固的砂岩、坚固的大理岩、白云岩、黄铁矿 Hard limestone, granite, sandstone and strong not strong, solid marble, dolomite, and pyrite	8
IV	软坚固 Soft solid	一般的砂岩、铁矿石 Generally sandstone, iron ore	6
IVa	软坚固 Soft solid	硅质页岩、页岩质砂岩 Siliceous shale, shale, sandstone	5
V	中等 Medium	坚固的粘土质岩石、不坚固的砂岩和石灰岩 Solid clay rock and unstable sandstone and limestone	4
V a	中等 Medium	各种不坚固的页岩、致密泥质岩 All kinds of vulnerable shale, shale rock	3
VI	较软弱 Relatively weak	较软的页岩、很软的石灰岩、白垩、岩盐、石膏、冻土、无烟煤、普通泥灰岩、裂缝发育的砾岩、胶接砾石、岩质土壤 Soft shale, soft limestone, chalk, halite, gypsum, permafrost, anthracite coal, the common marl, fracture development of conglomerate, cementing gravel, rocky soil	2
VIa	较软弱 Relatively weak	碎石质土壤、裂缝发育的灰岩、凝结成块的砾石和碎石、坚固的煤、硬化的粘土 Gravel soil mass, the fracture development of limestone, condenses into pieces of gravel and crushed stone, solid coal, hardening of the clayweak	1.5
VII	软弱 Weak	致密到粘土、软弱的烟煤、坚固的冲积层、粘土质土壤 All kinds of unstable dense shale, shale rock	1.0
VIIa	软弱 Weak	轻砂质粘土、黄土、砾石 Light sandy clay and loess, gravel	0.8
VIII	土质岩石 Soil rock	腐植土、泥煤、轻砂质土壤、湿砂 Humus soil, peat, light sandy soil, wet sand	0.6
IX	松散的岩石 Loose rock	砂、山坡堆积、细砾石、松土、采出的煤 Sand, slope accumulation, fine gravel, scarification, extracted coal	0.5
X	硫砂类岩石 Sulfur arenaceous kind of rocks	流砂、沼泽土壤、含水黄土及含水土壤 Flow of sand soil, swamp soil and water loess and water cut	0.3

需要说明的是 f 系数是根据岩石的单轴抗压强度 σ_b 来确定的, 即 $f=\sigma_b/10$ 。它有局限性, 因为有些岩石 $\sigma_b\geq MPa$, 所以国际标准规定用岩石的单轴抗压强度作为岩石的相互比较依据:
软岩 <150MPa 硬岩 >250MPa 中硬岩: 150~250MPa

We need to clarify that f coefficient is determined according to the rock uniaxial compressive strength of the σ_b , that is $f = \sigma_b / 10$. It has limitations, because there are Some rock $\sigma_b < MPa$, so international standards stipulates that the rock uniaxial compressive strength as rock compare basis: soft rock < 150 MPa hard rock >250 MPa in the hard rock: 150 ~ 250 MPa

钻杆系列

Drill rod series

New type of gas discharge pipe
新型瓦斯排放钻杆

- 新型钢带预应力缠绕式空芯瓦斯排放钻杆, 本产品具有重量轻, 弹性高, 不易弯曲的特点, 有自动调心功能, 运转科稳。钻杆采用弹簧销连接方式, 自动锁合, 拆卸更加方便快捷, 可与气动手持式钻机或加强型煤电钻配套使用, 可钻孔 8-30m, 特别适合于矿井高密度的探水排放瓦斯钻孔使用, 根据生产的实际需要用户可选用干式、湿式、通风使用, 三种类型的产品。

New steel with prestressed winding type tubular drill pipe gas emissions, this product is light, highly elastic, hard to bend , automatic cardiac function, steady running . Drill pipe USES the spring pin connection mode, automatically lock, more convenient and quick to disassemble, with pneumatic hand-held drill or reinforced supporting the use of the coal electric drill, drilling can be 8 to 30 m, particularly suitable for mine gas drainage borehole using high-density of ground water, according to the production of the practical need of the user can choose dry, wet, ventilation is used, three types of products.

The water type electric coal drill pipe
水式电煤钻杆

- 采用特殊材料, 提高了钻杆的韧性和强度、硬度和耐磨性。

直径: $\phi 27$ 、 $\phi 38$ 长度: 1m-3m

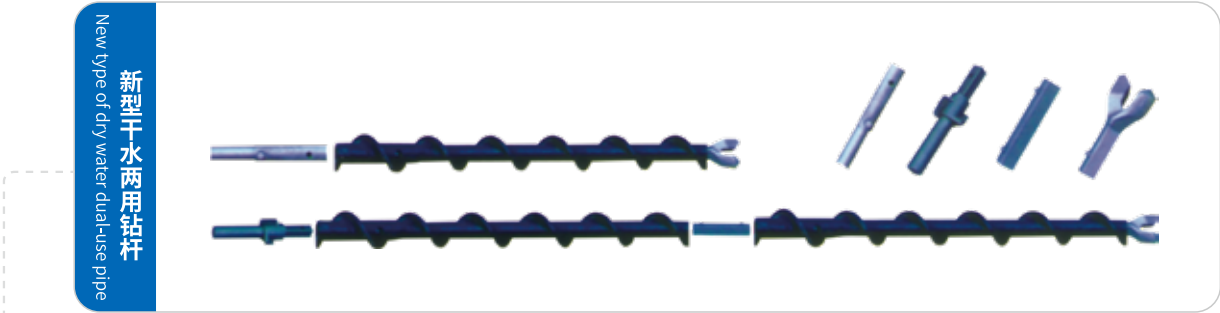
The use of special materials, improved the toughness and strength, hardness and wear resistance of drill pipe.
Diameter: $\phi 27$, $\phi 38$ length: 1m to 3 m

Dry type electric coal drill pipe
干式电煤钻杆

- 干式电煤钻杆采用优质钢材, 经特殊加工处理, 提高了钻杆的强度、硬度和耐磨性, 延长了使用寿命, 提高了经济效益。

直径: $\phi 27$ 、 $\phi 38$ 长度: 0.5m-5m

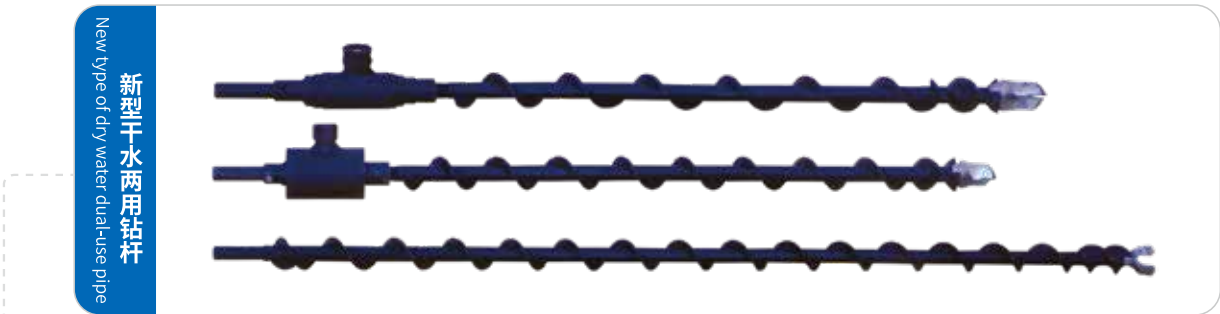
Dry type electric coal drill pipe is made of high quality steel, through special processing, improve the strength, hardness and wear resistance of drill pipe, prolong the service life, improve the economic benefit.
Diameter: $\phi 27$, $\phi 38$ length: 0.5 m to 5 m



New type of dry water dual-use pipe
新型干水两用钻杆

- 钻杆为空心结构、重量轻、抗弯性能良好。大螺距排粉，排粉粒度大，粉尘少。方孔卡豆式连接，节约安装时间，提高连接的可靠性，避免丢、卡钻头现象。钻杆首尾可互换，增加了钻杆的使用寿命。连接杆可打 15m 内深孔。

Drill pipe is hollow structure, light weight, bending performance is good. Big big row pitch powder, powder particle size, less dust. Square hole card bean type connection, saving installation time, improve the reliability of connection, avoid to being thrown away and the phenomenon of drill bit. Drill pipe end are interchangeable, increased the service life of drill pipe. Connecting rod to play within 15 m deep holes.



New type of dry water dual-use pipe
新型干水两用钻杆

- 新型干水两用钻杆是在煤钻杆的基础上，采用特殊材料制成，提高了钻杆的韧性和强度、硬度和耐磨性，延长了使用寿命，是煤钻杆的 3-5 倍。特点：重量轻，通水快，大螺距排粉，效率高，减轻工人劳动强度。（螺距及连接方式可根据用户需要定做）

直径：φ26-φ42 长度：0.5m-2m

On the basis of coal drill pipe, the new type of dry water dual-use pipe is and the use of special materials, improved the toughness and strength, hardness and wear resistance of drill pipe, prolong the service life, is coal drill pipe 3-5 times. Characteristics: light weight, fast to run water, big pitch powder, high efficiency, reduce labor intensity. (pitch and connection mode can be customized according to user's need)
Diameter: φ26 to φ42 length: 0.5 m to 2 m



Dry type electric coal drill pipe
干式电煤钻杆

- 干式电煤钻杆采用优质钢材，经特殊加工处理，提高了钻杆的强度、硬度和耐磨性，延长了使用寿命，提高了经济效益。

直径：φ27、φ3a 长度：0.5m-5m

Dry type electric coal drill pipe is made of high quality steel, through special processing, improve the strength, hardness and wear resistance of drill pipe, prolong the service life, improve the economic benefit.
Diameter: φ27, φ3a length: 0.5 m to 5 m



New type of gas discharge pipe
新型瓦斯排放钻杆

- 新型钢带预应力缠绕式空芯瓦斯排放钻杆，本产品具有重量轻、弹性高、易弯曲的特点，有自动调心功能，运转科稳。钻杆采用弹簧销连接方式，自动锁台，拆卸更加方便快捷，可与动手特式钻机或加强型煤电钻配套使用，可钻孔 8—30m，特别适合于矿井高密度的探水排放瓦斯钻孔使用，根据生产的实际需要用户可选用干式、湿式、通风使用，三种类型的产品。

New steel with prestressed winding type tubular drill pipe gas emissions, this product is light highly elastic, flexible, has automatic cardiac function, running steady. Drill pipe USES the spring pin connection mode, has automatic lock set, are more convenient and quick to disassemble, and began to drill or reinforced supporting the use of the coal electric drill, drilling can be 8 to 30 m, particularly suitable for mine gas drainage borehole using high-density of ground water, according to the production of the practical need of the user can choose three types of products, dry, wet, ventilation.



Pick brazing
风镐钎



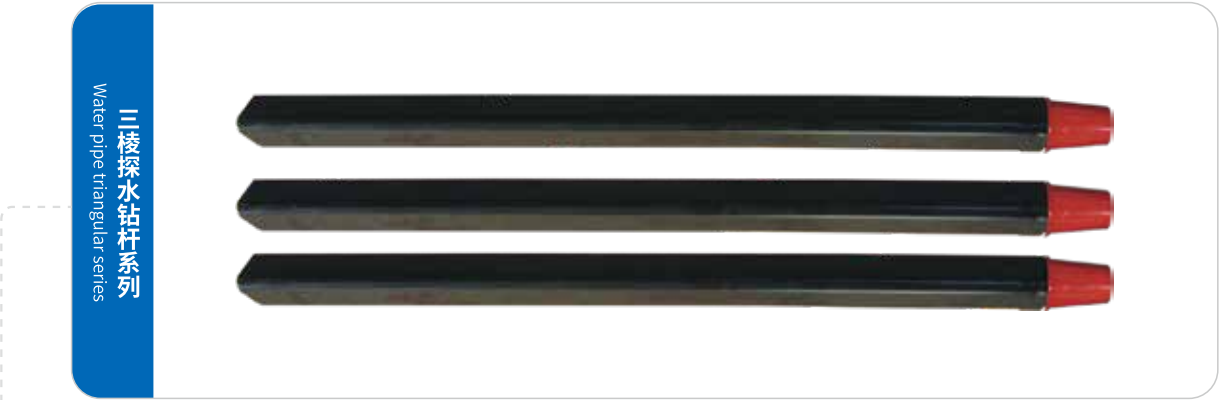
钻杆系列

Drill rod series



- 钻杆为空心结构、重量轻、抗弯性能良好。大螺距排粉，排粉粒度大，粉尘少。方孔卡豆式连接，节约安装时间，提高连接的可靠性，避免丢，卡钻头现象。钻杆首尾可互换，增加了钻杆的使用寿命。连接杆可打 15m 内深孔。

Drill pipe is hollow structure, light, has good bending performance. Big big row pitch powder, powder particle size, less dust. Square hole card bean type connection, saving installation time, improve the reliability of connection, avoid lost card bit phenomenon. Drill pipe end interchangeable, increased the service life of drill pipe. Connecting rod to play within 15 m deep holes.

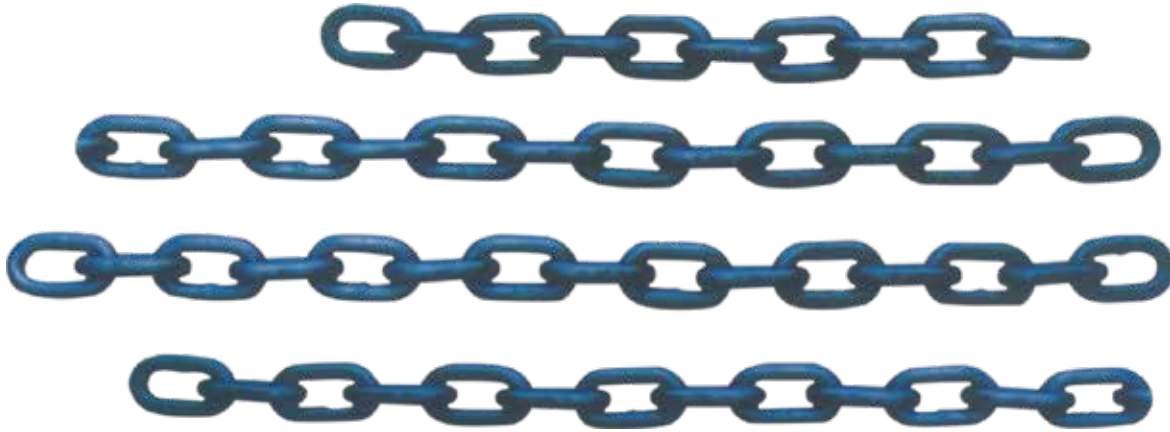


- 探水钻杆是采用国外先进生产的直角大螺距钻杆，钻杆螺旋钢带及杆体采用专用材料焊接而成。其强度高、弹性好，不易弯曲，连接方便快捷。

Water exploration drill pipe is big pitch using advanced foreign production of rectangular pipe, drill pipe spiral steel belt and adopt special material welding rod body. Its high strength, good elasticity and bending, convenient connection.

链接环系列

Link chain series



矿用高强度圆环链 / Mine high strength Round link chain

规格 d×p (mm) Specifications d×p(mm)	链环棒料 直径 (mm) Link bar diameter (mm)	宽度 (mm) The width (mm)		圆弧 半径 (mm) The circular arc radius (mm)	单位 长度 重量 (kg/m) Weight per unit length (kg/m)	实验负荷 kN The experi- mental load		实验负荷下最 大伸长率 (%) The experimental load under the maximum elongation (%)		最小破断 负荷 (kN) The minimum breaking load (kN)		破断时最小 伸长率 (%) Breaking the minimum elongation (%)	
		最小 内宽 The minimum inner width	最大 外宽 Outside the biggest width			B级	C级	B级	C级	B级	C级	B级	C级
10×40	10	12	34	15	1.9	85	100	1.4	1.6	110	130	12	12
14×50	14	17	48	22	4	150	200	1.4	1.6	190	250	12	12
18×64	18	21	60	28	6.6	260	330	1.4	1.6	320	410	12	12
22×86	22	26	74	34	9.5	380	490	1.4	1.6	480	610	12	12
26×92	126	30	86	40	13.7	540	680	1.4	1.6	670	850	12	12



矿用开口式链接环系列 / Mine Openings Link Ring Series

尺寸性能 Dimensions of performance	危险断面直径 (mm) Dangerous section diameter (mm)	节距 (mm) Pitch (mm)	外宽 (mm) Outer width (mm)	孔径 (mm) The aperture (mm)	内宽 (mm) Inner width (mm)	静拉伸试验 Static tensile test					
						初始负荷 (kN) The initial load (kn)	试验负荷 Test load		伸长率 Elongation	最小破断负荷 The minimum breaking load	
规格 Specifications						B级	C级	B级	C级	B级	C级
10×40	12±0.5	40±0.5	62	13±0.50	12+20	4		92			114
14×50	16±0.5	50±0.5	81	17±0.50	16+20	8	136	180		170	225
18×64	20±0.5	64±0.5	103	21±0.50	21+20	13	232	300	≤2	290	370
22×86	23±1	86±1	134	25±0.50	24.5+20	19		415			550
26×92	27±1	92±1	148	28±0.50	28.5+20	26		575			765



矿用圆环链用扁平接链环系列 / Mine Ring Chain Connect Link With Flat Series

规格 d×p (mm) Specifications d×p(mm)	主要规格 (m m) Main specifications (mm)							重量 (kg) The weight (kg)	试验负荷 (kN) Test load (kN)	试验负荷下最大伸长率 (%) The largest elongation under test load (%)	最小破断负荷 (kN) The minimum breaking load (kN)
	d1	d2	H	D	B	R	L				
18×64	20	19	21	22	62	30	102	0.727	320	1.2	370
22×86	24	23	25	26	78	38	132	1.498	480	1.2	550
24×86	26	25	27	28	82	40	132	1.778	570	1.2	660
26×92	28	27	29	30	90	45	146	2.148	640	1.2	770
30×108	32	29	33	34	102	50	170	3.552	850	1.2	1020

设备生产流水线展示图

Production line



澳德机械欢迎您！

Welcome to AoDe Mining Machinery & Equipment Ltd.!



产品质量和售后服务承诺书

Product quality and after-sales service commitment

质量保证 / Quality Assurance

- 1、产品严格执行贵方要求标准。
- 2、如有需要,我公司严格履行卖方义务,保证按质量确保合同履行。
- 3、我公司严格执行合同条款,保证承诺事项,并严格执行双方协商相关协议。
- 4、如属产品质量问题,严格按照相关标准保退保换。
- 5、新产品开发试用,如我公司产品达不到贵方要求使用标准,可保退换。

1. The standard products strictly meet your standard.
2. If necessary, our company strictly fulfill its obligations to the seller, guaranteeing the quality to ensure that the execution of the contrac .
3. Our company strictly enforce the terms of the contract, guarantee commitments, and strictly carry out the agreement through consultation.
4. In the case of a product quality problem, in strict accordance with the relevant standard insurance ,the products are refundable.
5. In the process of new product development trial, such as the standard products of our company can not reach your requirements, the products are refundable.

售后服务承诺 / After-sales service Commitment

- 1、我方提供的产品严格按照贵方的要求生产,切实遵照我公司成熟工艺制作。
- 2、根据需方要求,我公司可负责代办托运,运输到贵方指定交货地点。
- 3、按照需货方要求,开据国家正式发票。
- 4、我公司愿意派遣技术人员到贵方进行安装指导,并解决相关的使用技术问题。
- 5、我公司欢迎贵方人员来公司参观考察,免费提供有关产品资料。
- 6、合同一但正式签订,我公司将严格按照服务承诺条款恪守执行。
- 7、如贵方发现我公司产品外观、质量有缺陷,进而影响产品的使用,根据有关规定,对于未用产品,我公司将提供保退保换服务。

1. We provide products in strict accordance with your request production, to comply with our mature production technique.
2. According to buyer's requirements, our company are responsible for agent consignments, transportation to your designated place of delivery.
3. We will offer an official invoice in accordance with the requirements.
4. Our company is willing to send technicians to guide you to install, and solve the related technical problems.
5. I company welcome you to visit our company, to provide information about the products free of charge.
6. When contract is signed, our company will be implemented strictly in accordance with the terms of the contract.
7. If you find our company products' appearance, quality have any flaw which affect the use of the product,the products that are not used are refundable according to the relevant provisions.