北霄

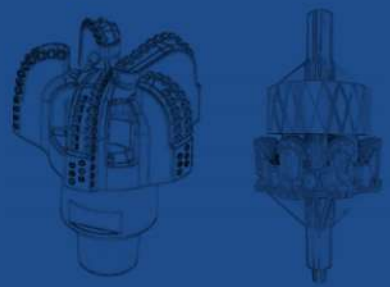
BEIXIAO

北霄（河北）机械设备有限公司

办公地址：河北省沧州市河间市诗经镇君子馆

工厂地址:河北省沧州市河间市诗经镇君子馆

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Tools to reach sources of energy underground Tools to reach water underground
Tools to install pipelines undergrotund
Tools to drill foundation hole for constructions
Who we are;
We are one of people who makes above things easier Let's work together and anjoy this job
石油、天然气、地热能源、地质勘查。地下水开来地下管网建设
建筑桥梁基桩
我们的目标是让以上工作变得更容易.....

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Company Profile

-eBBao (Hei eeHi CLeneryHE tremendHCmitHdfiHeiian Ci t y. Hei Province, orthe NothChina Pain. I is located in the middle of Bei- jing, Tianjin and Shijiazhuang, with c nvenient transpor tation and superior location as we ll as favorable ge

r company is committed to the research an d deve lo pment and production of drilling bits. The ma in product sinclude core bits, PDC bits, trenchless rea ming t)is, engineering cone palms and related tools. The application fields mainly include petroleum natural gas geothermal, mining, geological exploration, hydro ogical measurement, industrial and agricultural water , trenchless underground pipenetwork engineering, found ation pile

roduction equipme nt andhas certain Production capacity and technic al researchand development capabilities in the industry. We have amature technical research and development, production manufacturing and sales service team and c an provide diversified and hierarchical solutions acco rding to different needs in different fields. 021

公司简介

地霄（间地）机械售服，位置优越有良好的地理条件和人力资源。我公司致力于钻井钻头的研发和生产，主要产品有牙轮钻头、PDC钻头、非开挖扩孔钻头、工程

用牙轮掌以及相关工具，应用领域主要有石油、天然气、地热、矿山、地质勘探、水文测量、工农业用水、非开挖地下管网工程、基桩工程等。graphical conditions and human resources. Ou

产制造和销售服务团队，可以根据不同领域不同需求提供多样化、层次化的解决方案。工厂环境 engineering , etc. Our company has advan

ced p



设备

Equipment















牙轮钻头

Section of Tricone Bits

KE Series Elastomer Sealed Bearing Tricone Rock Bit

Cutting Structure

The wear-resistance of teeth is enhanced with premium tungsten carbide hard-facing on the tooth surfaces for steel tooth bit.

Gauge Structure

Multiple gauge protection with gauge trimmers on the heel and gauge inserts on the gauge surface of the cone, tungsten carbide inserts and hardfacing on the shirt-tail increases gauge holding capability and bearing life

Bearing Structure

High precision roller bearing with two thrust faces. Ball lock the cone. Thrust faces hardface with wear resistant alloy. Abrasion resistance and seizure resistance of the bearing are improved.

Seal and Lubrication

Premium O-ring, Optimal seal compression and curved seal structure can enhance the seal performance. The pressure compensator system and advanced grease can greatly increase the lubricating reliability.

Product Application

It is suitable for various formations, and achieves high RPM under low to medium WOB application.

Recommended Drilling Parameter

IADC (KN/mm)	WOB	RPM (rimin)	Applicable Formations
114/115/117	0.3~0.75	180-60	Very soft formations with low compressive strength and high drillability, such as clay, mudstone,chalk, etc.
124/125/127	0.3-0.85	180-60	Soft formations with low compressive strength and high drillabity, such as mudstone,gypsum, salt, soft limestone,etc.
134/136	0.3-0.95	150-60	Sof to medium formations with low compressive strength and high drillability,such as medium, soft shale, medium soft limestone, medium soft sandstone, soft formation with harder interbeds,etc.
214/215/217	0.35-0.95	150-60	Medium formation with high compressive strength, such as medium soft shale,hard gypsum,medium soft limestone,medium soft sandstone, soft formation with harder interbeds,etc.
227/225	0.35-0.95	150-50	Medium hard formations with high compressive strength,such as abrasive shale,limestone,sandstone,dolomite,hard gypsum, marble,etc.

KE系列橡胶密封轴承钢齿三牙轮钻头

切削结构

钢齿钻头齿面数焊新型耐磨合金，增强切削齿耐磨性。

保径结构

采用多重保径结构：牙轮外排镶修边齿，轮背、爪背镇硬质合金齿，爪尖及前心地煤耐磨合金，提高钻头的保径能力。

轴承结构

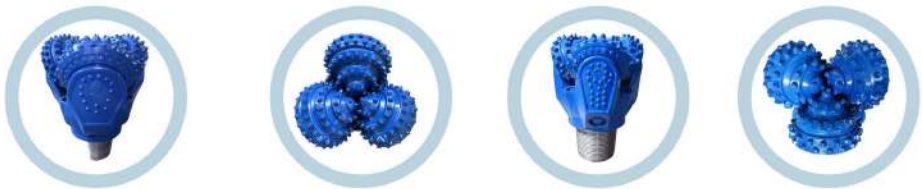
采用高精度配合的径向、滚动轴承，钢球锁紧。止推轴承表面堆焊耐磨合金和减磨处理，提高钻头承受轴向载荷和止推面抗咬合的能力。

密封润滑

轴承密封选用高性能O形密封圈，最佳密封压缩量，弧形密封结构，有效地提高轴承密封的性能。采用高性能钻头专用润滑脂。

推荐钻头使用参数

IADC（千牛/毫米）	钻压	转速（转/分钟）	适用地层
114/115/117	0.3~0.75	180-60	抗压强度低且可钻性高的极软地层，例如粘土、泥岩、白垩等。
124/125/127	0.3-0.85	180-60	抗压强度低且可钻性高的软地层，例如泥岩、石膏、盐、软石灰岩等。
134/136	0.3-0.95	150-60	抗压强度低且可钻性高的中软地层，例如中软页岩、中软石灰岩、中软砂岩、具有较硬夹层的软地层等。
214/215/217	0.35-0.95	150-60	抗压强度高的中等地层，例如中软页岩、硬石膏、中软石灰岩、中软砂岩、具有较硬夹层的软地层等。
227/225	0.35-0.95	150-50	抗压强度高的中硬地层，例如磨蚀性页岩、石灰岩、砂岩、白云岩、硬石膏、大理石等。



KA Series Elastomer Sealed Bearing Tricone Rock Bit

Cutting Structure

The durability of premium tungsten carbide insert is improved with new formulas and new techniques for insert bit

Gauge Structure

Multiple gauge protection with gauge trimmers on the heel of cone, tungsten carbide inserts and hardfacing on the shirt. Enhance gauge holding capability and bearing life.

Bearing Structure

High precision bearing with two thrust faces. Ball lock the cone. Hardfaced head bearing surface. Cone bearing inlaid with friction-reducing alloy and then silver plated. Abrasion resistance and seizure resistance of the bearing are improved.

Seal and Lubrication

Premium O-ring, Optimal seal compression and curved seal structure can enhance the seal performance. The pressure compensator system and advanced grease can greatly increase the lubricating reliability

Product Application

It can bear high WOB in the conventional drilling. Suitable for various formations by matching cutting structure with different tooth shape, tooth density and tooth exposure height.

Recommended Drilling Parameter

IADC	WOB (KN/mm)	RPM (r/min)	Applicable Formations
417/437/ 447/415/435	0.35 - 0.9	150 - 70	Very soft formations with low compressive strength and high drillability, such as clay, mudstone, chalk, gypsum, salt, soft limestone, etc.
517/527/515	0.35 ~ 1.0	140 ~ 60	Soft formations with low compressive strength and high drillability, such as mudstone, gypsum, salt, soft limestone, etc
537/547/535	0.45 - 1.0	120 - 50	Medium formations with low compressive strength, such as medium, soft shale, medium soft limestone, medium soft sandstone, medium formation with harder and abrasive interbeds, etc.
617/615	0.45 - 1.1	90 - 50	Medium hard formation with high compressive strength, such as hard shale, limestone, sandstone, dolomite, etc.
0.5 - 1.2	0.5 - 1.2	80 - 40	Hard formations with high compressive strength, such as sandstone, limestone, dolomite, hard gypsum, marble, etc.

KA 系列弹性体密封轴承三牙轮钻头

切削结构

采用新配方和新技术，提高了优质碳化钨镶齿的耐用性。

保径结构

在牙轮后跟处采用保径修边器、碳化钨镶齿和表面硬化处理，提供多重保径保护。增强了保径能力和轴承寿命。

轴承结构

高精度轴承，带有两个推力面。球锁牙轮。头部轴承表面硬化处理。牙轮轴承镶嵌减摩合金，然后镀银。提高了轴承的耐磨性和抗咬合性。

密封和润滑

优质 O 型圈，优化的密封压缩和弧形密封结构可提高密封性能。压力补偿系统和先进的润滑脂可大大提高润滑可靠性。

产品应用

在常规钻井中能够承受高钻压。通过匹配不同齿形、齿密度和齿露出高度的切削

推荐钻井参数

IADC	钻压（千牛/毫米）	转速（转/分）	适用地层
417/437/ 447/415/435	0.35 - 0.9	150 - 70	抗压强度低且可钻性高的极软地层，例如粘土、泥岩、白垩、石膏、盐、软石灰岩等。
517/527/515	0.35 ~ 1.0	140 ~ 60	抗压强度低且可钻性高的软地层，例如泥岩、石膏、盐、软石灰岩等
537/547/535	0.45 - 1.0	120 - 50	抗压强度低的中等地层，例如中软页岩、中软石灰岩、中软砂岩、具有较硬和磨蚀性夹层的中等地层等。
617/615	0.45 - 1.1	90 - 50	抗压强度高的中硬地层，例如硬页岩、石灰岩、砂岩、白云岩等。
0.5 - 1.2	0.5 - 1.2	80 - 40	抗压强度高的硬地层，例如砂岩、石灰岩、白云岩、硬石膏、大理石等。






KJ Series Metal-face Sealed Bearing Tricone Rock Bit

Cutting Structure

The durability of premium tungsten carbide inserts is improved with new formulas and new techniques for insert bit

Gauge Structure

Multiple gauge protection with gauge timers on heel and gauge inserts on the gauge surface of the cone, tungsten carbide inserts and hardfacing on the shirtail. Increases gauge holding capability and bearing life.

Bearing Structure

High precision bearing with two thrust faces. Balls lock the cone. Hardface head bearing surface. Cone bearing inlaid with friction-reducing alloy and then silver plated. Abrasion resistance and seizure resistance of the bearing are improved and suitable for high rotary speed.

Seal and Lubrication

The advanced metal seal package consists of two metal seats and two elastic energizers. Compressed energizers ensure good contact being kept on two sealing surfaces of metal rings by elastic force, and achieve the bearing seal. In the drilling, metal seal are relatively dynamic, and the energizers are static. This will improve the reliability and durability of bearing seal. The pressure compensator system and advanced grease can greatly increase the lubricating reliability.

Product Application

It is suitable for downhole motor and high speed applications.

Recommended Drilling Parameter

IADC	WOB (KN/mm)	RPM (r/min)	Applicable Formations
417/437/ 447/415/435	0.35 - 0.9	150 - 70	Very soft formations with low compressive strength and high drillability, such as clay, mudstone, chalk, gypsum, salt, soft limestone, etc.
517/527/515	0.35 ~ 1.0	140 ~ 60	Soft formations with low compressive strength and high drillability, such as mudstone, gypsum, salt, soft limestone, etc
537/547/535	0.45 - 1.0	120 - 50	Medium formations with low compressive strength, such as medium, soft shale, medium soft limestone, medium soft sandstone, medium formation with harder and abrasive interbeds, etc.
617/615	0.45 - 1.1	90 - 50	Medium hard formation with high compressive strength, such as hard shale, limestone, sandstone, dolomite, etc.
0.5 - 1.2	0.5 - 1.2	80 - 40	Hard formations with high compressive strength, such as sandstone, limestone, dolomite, hard gypsum, marble, etc.

KJ 系列金属面密封轴承三牙轮钻头切削结构

镶齿

优质碳化钨镶齿的耐用性通过新配方和新技术得以提高

保径结构

在牙轮后跟处设有保径定时器，牙轮保径面上有保径镶齿，以及在尾部进行碳化钨镶齿和表面硬化处理。提高了保径能力和轴承寿命。

轴承结构

高精度轴承带有两个推力面。球锁牙轮。头部轴承表面硬化处理。牙轮轴承镶嵌减摩合金然后镀银。提高了轴承的耐磨性和抗咬合性，适合高转速。

密封和润滑

先进的金属密封组件由两个金属座和两个弹性增能器组成。压缩的增能器通过弹力确保在金属环的两个密封面上保持良好接触，实现轴承密封。在钻井过程中，金属密封相对动态，而增能器是静态的。这将提高轴承密封的可靠性和耐久性。压力补偿系统和先进的润滑脂可大大提高润滑可靠性。

产品应用

适用于井下马达和高速应用。

推荐钻井参数

IADC	钻压（千牛/毫米）	转速（转/分）	适用地层
437/447/435	0.35 - 0.9	240 - 70	抗压强度低且可钻性高的极软地层，例如粘土、泥岩、白垩、石膏、盐、软石灰岩等。
517/527/515	0.35 ~ 1.0	220 - 60	抗压强度低且可钻性高的软地层，例如泥岩、石膏、盐、软石灰岩等。
537/547/535	0.45 ~ 1.0	220 - 50	抗压强度低的中等地层，例如中软页岩、中软石灰岩、中软砂岩、具有较硬和磨蚀性夹层的中等地层等。
617/615	0.45 - 1.1	200 - 50	抗压强度高的中硬地层，例如硬页岩、石灰岩、砂岩、白云岩等。
637/635	0.5 - 1.1	180 - 40	抗压强度高的硬地层，例如砂岩、石灰岩、白云岩、硬石膏、大理石等。



三轮牙钻头 Three-wheel dental drill bit

KJ系列



KJ系列三牙轮钻头往往具有更高的强度和更强的抗冲击能力，适用于坚硬和复杂的地层条件。这种类型的钻头能够应对较高的工作负荷和复杂的地质环境。

KA系列

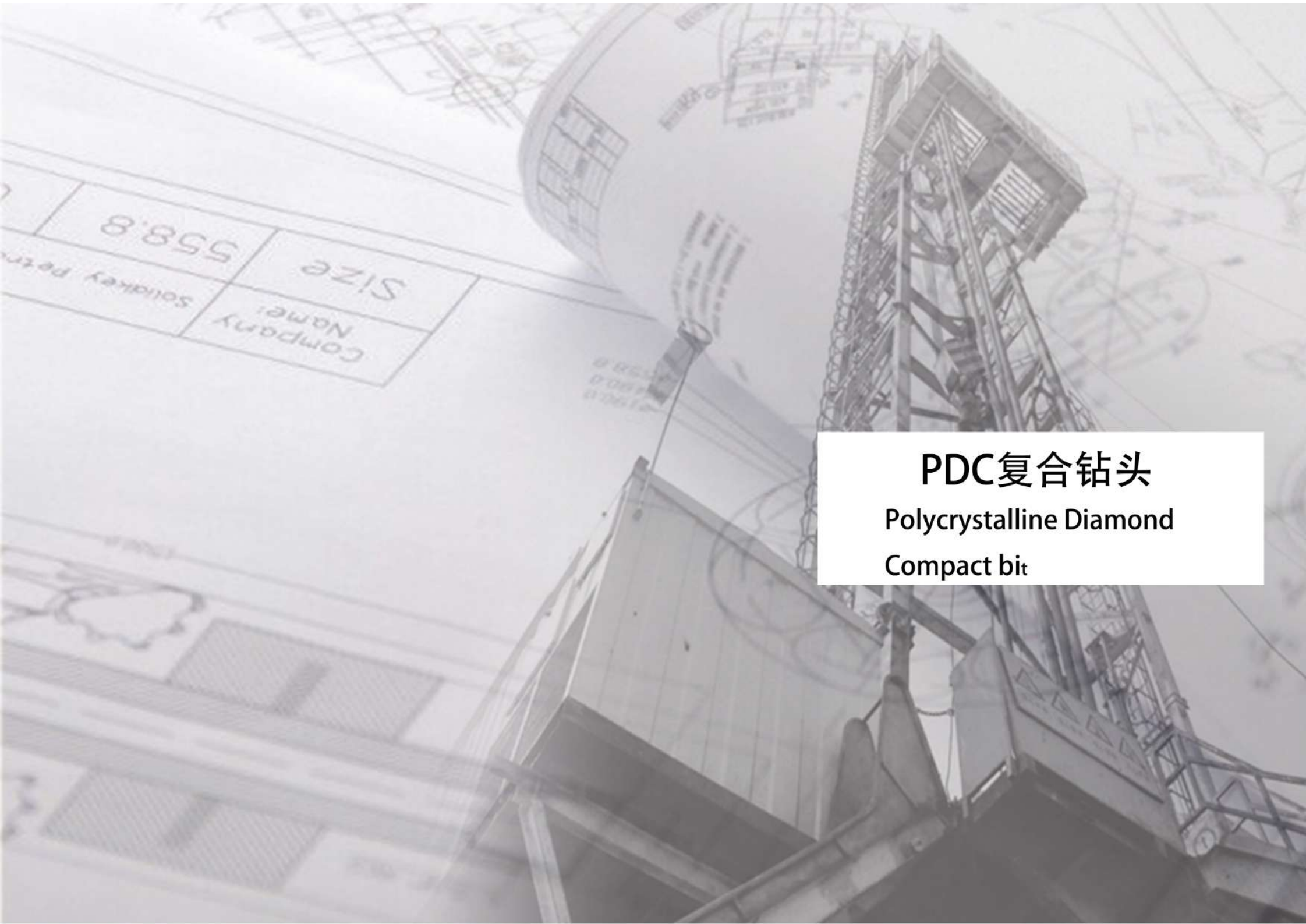


KA系列三牙轮钻头则在耐磨性和稳定性方面表现较为出色，适用于中等硬度的地层。其结构能够在保证一定钻速的同时，减少钻头的磨损，从而延长使用寿命。

KE系列



KE系列三牙轮钻头通常具有较强的攻击性和较高的钻速，适用于较软的地层



PDC复合钻头

Polycrystalline Diamond Compact bit

分类方式	具体分类	特点
按钻头体材料分类	胎体式 PDC 钻头	将金刚石复合片通过钎焊方式焊接在钻头胎体上，胎体钻头用碳化钨粉末烧结而成，用人造聚晶金刚石复合片钎焊在碳化钨胎体上，用天然金刚石保径
	钢体式 PDC 钻头	用镍、铬、钼合金机械加工成形，经过热处理后在钻头体上钻孔，将人造聚晶金刚石复合片压入（紧配合）钻头体内，用柱状碳化钨保径
按产品特性分类	单钻头	
	双钻头	
	三钻头	

Classification Method	Specific Classification	Characteristics
Classified by Bit Body Material	Matrix PDC Bit	The diamond composite sheet is brazed onto the bit matrix. The bit matrix is sintered from tungsten carbide powder. The artificial polycrystalline diamond composite sheet is brazed onto the tungsten carbide matrix, and natural diamond is used for gauge protection.
	Steel Body PDC Bit	Formed by mechanical processing of nickel, chromium, and molybdenum alloys. After heat treatment, holes are drilled on the bit body, and the artificial polycrystalline diamond composite sheet is pressed (tight fit) into the bit body, and columnar tungsten carbide is used for gauge protection.
Classified by Product Characteristic	Single Bit	
	Double Bit	
	Triple Bit	

岩层类型	推荐 PDC 钻头类型
软岩层（如泥岩、页岩、粘土）	常规平面齿 PDC 钻头，刀翼数量较少
中软岩层（如砂岩、粉砂岩）	中等攻击性的平面齿或锥形齿 PDC 钻头，三刀翼或四刀翼
部分中硬且均匀岩层（如部分石灰岩）	加强型锥形齿 PDC 钻头，四刀翼及以上
坚硬、研磨性强岩层（如花岗岩）	不建议使用 PDC 钻头，可选用牙轮钻头
非均质地层（存在大量硬质结核、破碎裂隙发育严重）	不建议使用 PDC 钻头，可选用牙轮钻头或其他适应复杂地层的钻头

Rock formation type	Recommended PDC bit type
Soft rock formations (such as mudstone, shale, clay)	Conventional planar tooth PDC bit with fewer blades
Medium-soft rock formations (such as sandstone, siltstone)	Medium-aggressive planar tooth or conical tooth PDC bit, with three or four blades
Some medium-hard and uniform rock formations (such as some limestone	Reinforced conical tooth PDC bit, with four or more blades
Hard and abrasive rock formations (such as granite)	It is not recommended to use PDC bits. Instead, tricone bits can be selected
Heterogeneous formations (with a large number of hard nodules and severely developed fractures)	It is not recommended to use PDC bits. Instead, tricone bits or other bits suitable for complex formations can be selected

PDC 钻头 PDC Bit



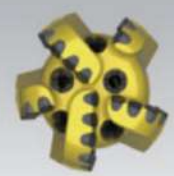






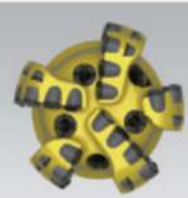

钢体PDC钻头

S1305

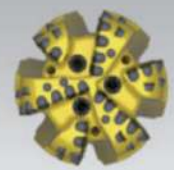
钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
5-1/2"	5	13mm	5	1-1.8"	3-1/2 REG	60-300	20-80	10-25

S1605

钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
6"	5	16mm	5	1.5-2"	3-1/2 REG	60-300	20-80	10-25

S1306

钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
6-3/4"	6	13mm	6	1.5-2"	3-1/2 REG	60-300	20-80	10-25

胎体PDC钻头

Matrix Body PDC Bit

M1307





钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
6"	7	13mm	6	2"	3-1/2 REG	60-300	20-80	10-25

M1906





钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
12-1/4"	6	19mm	6	3"	6-5/8 REG	60-260	20-160	38-62

M1606





钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
8-1/2"	6	16mm	6	2.2"	4-1/2 REG	60-300	20-110	21-35

M1606





钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
12-1/4"	6	16mm	7	3"	6-5/8 REG	60-260	20-160	38-62

M1307





钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
8-1/2"	7	13mm	6	2"	4-1/2 REG	60-300	20-110	21-35

M1607



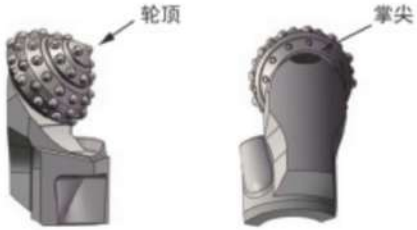


钻头 BIT	钻头参数 SPECIFICATIONS					推荐钻井参数 RECOMMENDED OPERATING PARAMETERS		
尺寸 Size	刀翼数 Number of Blades	主切削齿规格 Primary Cutter Size	喷嘴数 Nozzle Qty	保径长度 Gauge Length	连接扣型 Connection	转速 Rotary Speed (RPM)	钻压 Weight on Bit (KN)	排量 Flow Rate(lps)
12-1/4"	7	16mm	9	3"	6-5/8 REG	60-260	20-160	38-62


牙轮掌片
Cone palm piece

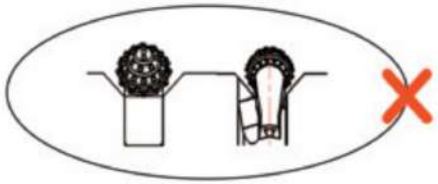
牙轮掌焊接注意事项

1. 筒壁开口宽度以刚刚放入牙掌或者底座为宜，不要留过大间隙；筒壁开口深度应保证焊接后的牙轮露出筒壁约1/2轮高为宜；牙轮两侧筒壁顶端开八字倒角。（参考示意图）
2. 不要混用不同规格牙轮；牙轮安装顺序，最大可能遵循正反交替的原则。
3. 保证牙轮水平高度一致；向外倾斜牙轮边齿切削直径一致；向内倾斜牙轮边齿切削直径一致；无论高度还是水平方向，突出的会提前损坏；筒壁定位法需测量边齿圆心距，减去筒椭圆造成的误差。尽可能保持最小破碎环面，不小于推荐值，不大于120mm。
4. 焊接时遵循牙轮向掌背一侧倾斜的原则，不可向轮顶一侧倾斜，避免掌尖过早磨损。
5. 焊接时应尽量将牙轮掌浸入水中，点焊定位后轮流焊接加固，工地焊接可以通过流动水和湿布包裹结合方式冷却，重点冷却牙掌与牙轮结合处，避免高温造成密封圈或者轴承润滑系统失效。

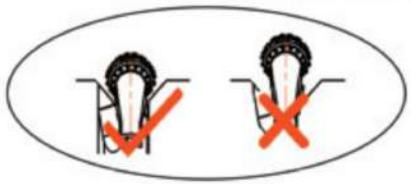


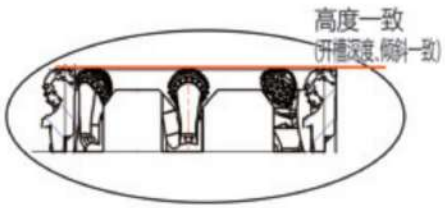
焊接示意图

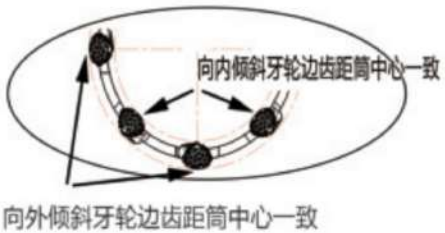
不推荐混用不同规格牙轮



约半个轮子进入筒端面

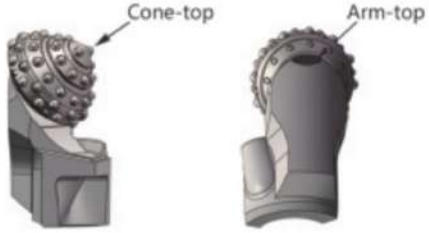






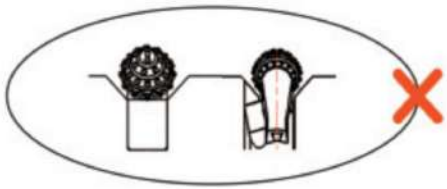
Welding Notes

1. All gaps must be same width & depth; cone should be 1/2 or 2/3 out of barrel edge; gap should not be too big.
2. All cones in one barrel should be same model.
3. All the Arm-top of cones should be same distance to Circle-Center. All the height should be same.
4. Rock breaking-ring-width should not be smaller than advised minimum breaking-ring-width, and it should not be bigger than 120mm.
5. Cool the cones by water when welding; welding each cones in turns to lower temperature of cones.

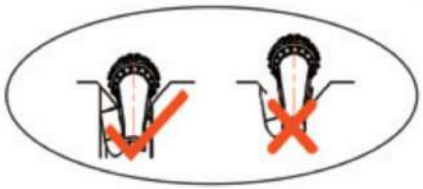


Referenced Drawings

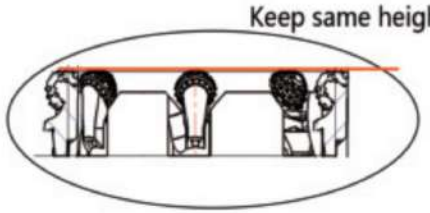
Different cones

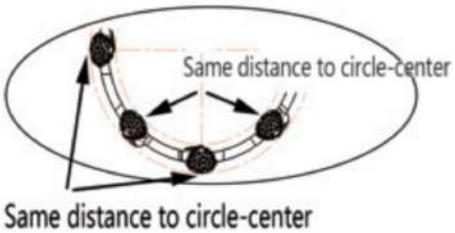


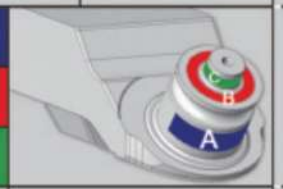
Half cone inside is right



Keep same height





MODEL		新一代 (56/9) NG1 (56/9)	新一代 (52/10) NG1 (52/10)	新一代 (49/7.7) NG1 (49/7.7)	新二代 (56/9) NG2 (56/9)	新二代 (52/10) NG2 (52/10)	新二代 (49/7.7) NG2 (49/7.7)	新二代 (537) NG2 (537)
材质 RAW MATERIAL	牙轮 Cone	15MnNi4Mo	15MnNi4Mo	15MnNi4Mo	15MnNi4Mo	15MnNi4Mo	15MnNi4Mo	15MnNi4Mo
	牙掌 Arm	20CrNiMo	20CrNiMo	20CrNiMo	15CrNiMo	15CrNiMo	15CrNiMo	15CrNiMo
	牙齿 Tooth	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts
牙齿 TOOTH	齿数量/直径 Tooth Qty.&Diameter	56PCS/14mm	52PCS/14mm	49PCS/14mm	56PCS/14mm	52PCS/14mm	49PCS/14mm	45PCS/15mm
	主齿总高度 Total Tooth Height	20.3mm	21.3mm	19mm	20.3mm	21.3mm	19mm	18.5mm
	埋深 Inside Height	11.3mm	11.3mm	11.3mm	11.3mm	11.3mm	11.3mm	10.5mm
	露出 Outside Height	9mm	10mm	7.7mm	9mm	10mm	7.7mm	8mm
轴承 BEARING AND LUBRICATION	轴承耐磨合金 Tungsten Carbide Enhanced On Bearing	A √ B √ C √			A √ B √ C √			
	注油方式 Grease Lubrication & Bearing Seal	真空注油机注油 Inject Grease By Vacuum Machine, O-ring Seal			真空注油机注油 Inject Grease By Vacuum Machine, O-ring Seal			



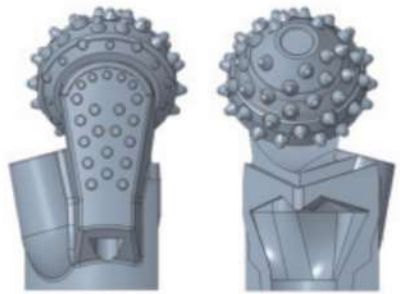
新一代 (49/7.7)
NG1 (49/7.7)



新二代 (49/7.7)
NG2 (49/7.7)



新二代 (537)
NG2 (537)



新二代 (52/10)
NG2 (52/10)

MODEL		C120	C133	C142-537	C169
材质 RAW MATERIAL	牙轮 Cone	20CrNiMo	20CrNiMo	15MnNi4Mo	20CrNiMo
	牙掌 Arm	20CrNiMo	20CrNiMo	20CrNiMo	20CrNiMo
	牙齿 Tooth	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts	硬质合金镶齿 Tungsten Carbide Inserts
牙齿 TOOTH	齿数量/直径 Tooth Qty. &Diameter 一轮 Cone1	38PCS/12mm	43PCS/13mm	45PCS/15mm	50PCS/17mm
	二轮 Cone2	41PCS/12mm	45PCS/13mm		
	三轮 Cone3	44PCS/12mm	41PCS/13mm		
	主齿总高度 Total Tooth Height	14.5mm	17mm	18.5mm	26mm
	埋深 Inside Height	8.5mm	10.5mm	10.5mm	15mm
	露出 Outside Height	6mm	6.5mm	8mm	11mm
轴承 BEARING AND LUBRICATION	轴承耐磨合金 Tungsten Carbide Enhanced On Bearing	A √ / B √ / C ×		A √ / B √ / C ×	
	注油方式 Grease Lubrication & Bearing Seal	非真空注油 O-ring Seal. Inject Grease NOT By Vacuum Machine.		非真空注油 O-ring Seal. Inject Grease NOT By Vacuum Machine.	



C120



C133



C142-537



C169

牙轮掌片 Cone palm piece











展示图 Presentation chart







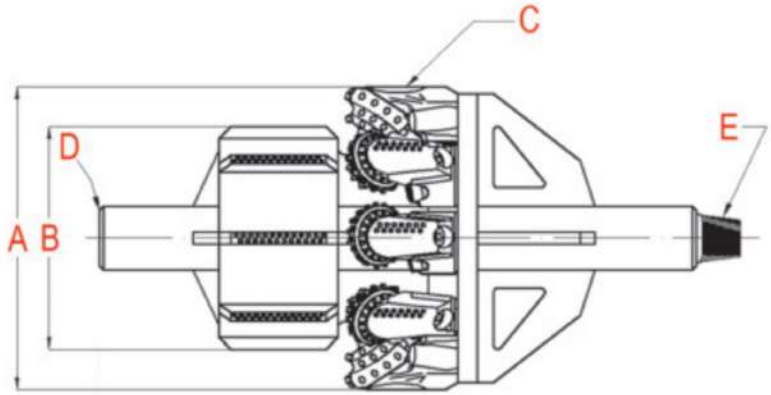


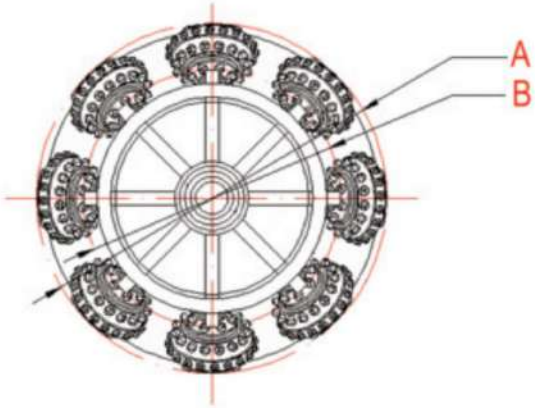







扩孔钻头
reaming bit

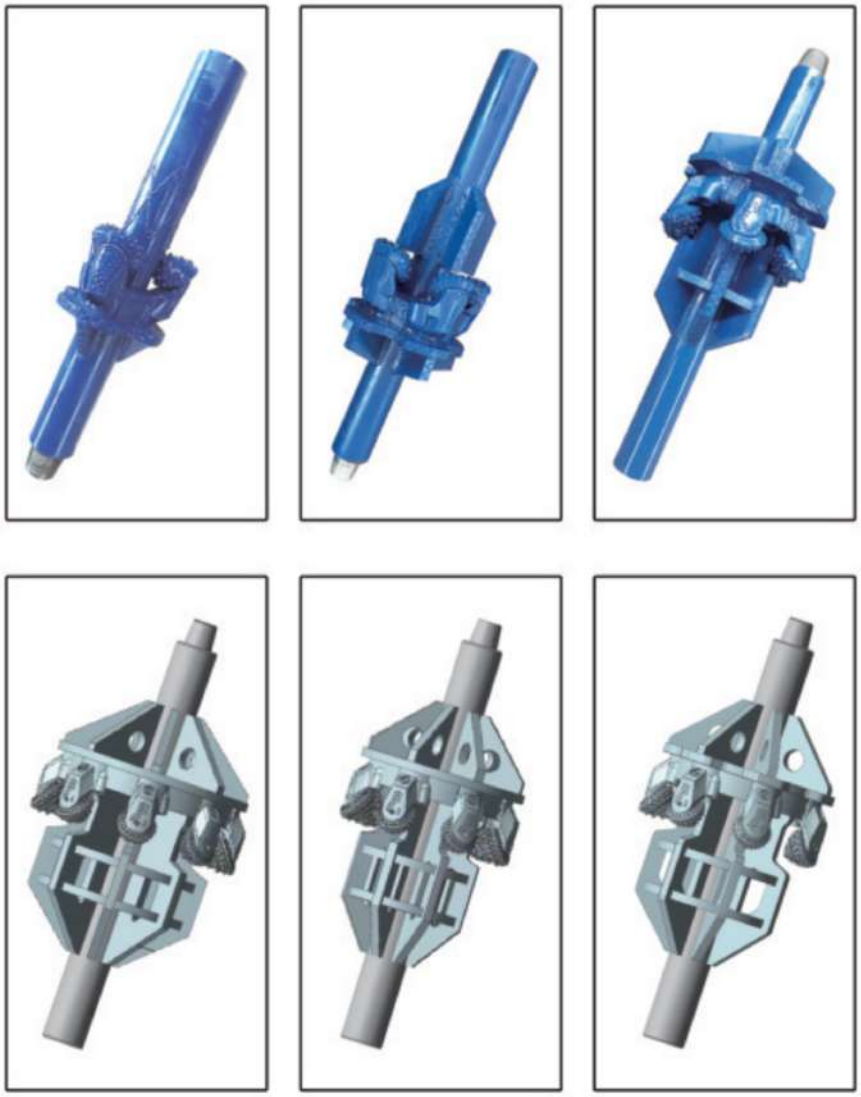




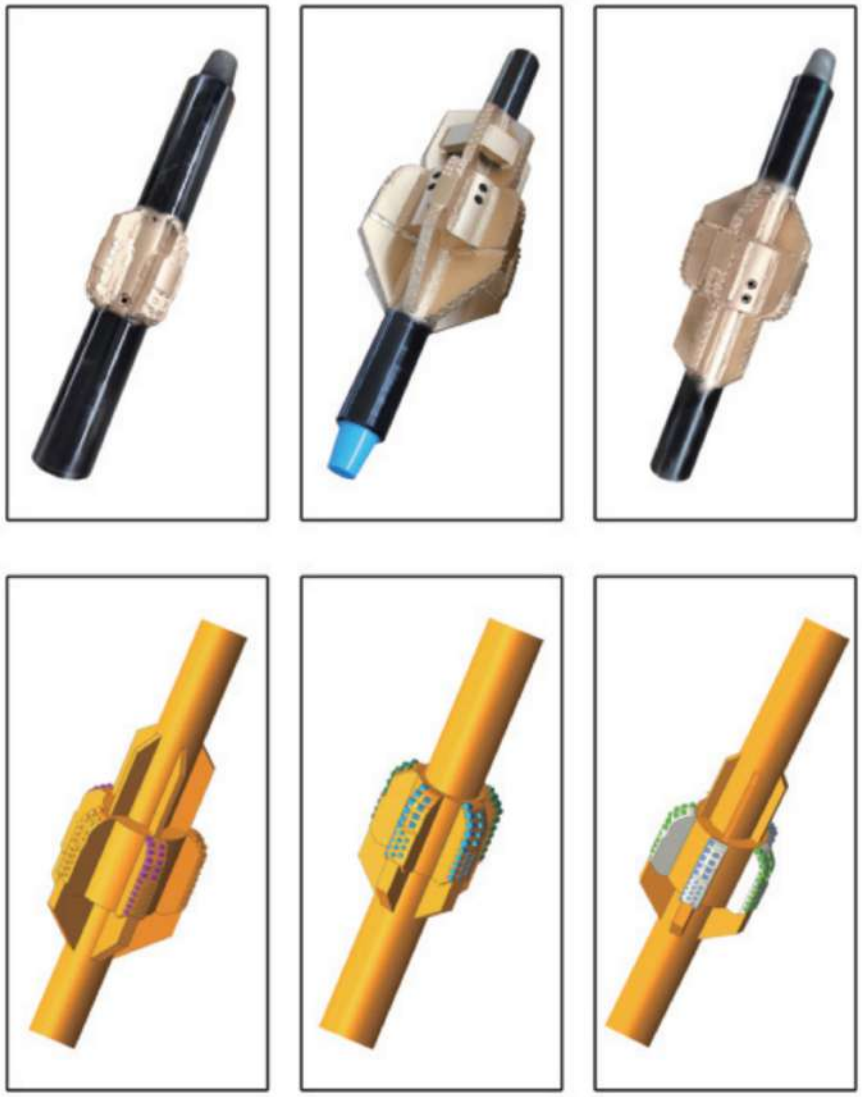
A.扩孔器直径/Diameter of hole opener	
B.稳定器直径/Diameter of stabilizer	
C.牙轮掌型号/Type of roller cones	
D/E.连接螺纹（前/后）/Thread connection(pulling/trailing)	
扩孔器钻压（吨）WOB（Ton）	
扩孔器转速（转/分）RPM（r/min）	
适用地层/Application Formations	
备注/Remarks	

Rock UCS (PSI)	Rock Type	Tungsten Carbide Insert Tricone Bit Series
0	Claystone,Mudstone	40 Series 4-1 to 4-4
	Chalky Limestone	
4000	Soft Shale	
	Loose Sandstones	50 Series 5-1 to 5-4
8000	Limestone,Siltstone	
	Solid Sandstones	
12,000	Medium Shales	
	Tuff,Soft Schist	
16,000	Andesite,Rhyolite	
	Quartzite(Sand,Silt)	
20,000	Limestone,Marble	
	Monzonite,Granite	
24,000	Gneiss	
	Diorite,Diabase	
28,000	Hard Shale,Slate	
	Limestone,Dolomite	60 Series 6-1 to 6-4
32,000	Basalt	
	Tactite,Skarn	
36,000	Granodiorite	
	Taconite	
40,000	Quartzite	
	Syenite	
44,000	Gabbro	
		70 Series 7-1 to 7-4
48,000	Banded Iron Formation	
52,000	Chert	
56,000	Quartzite	
		80 Series 8-1 to 8-4
60,000	Amphibolite	
64,000	Hornfels	
68,000	Hematite Ore	
Higher	Lava,Basalt,Biwabic,Quartzite	

牙轮扩孔器 · HDD hole opener



PDC扩孔器 · PDC hole opener



扩孔钻头 reaming drill bit



















工作原理：

取芯钻头的工作原理基于旋转切削和挤压。当钻头旋转时，切削刃逐渐切入被钻材料，同时中心的芯筒将切削下来的芯样包裹并保留。其旋转速度、切削刃的角度和形状以及施加的压力都会影响钻取的效果和效率。

类型：

金刚石取芯钻头：适用于坚硬的岩石地层，金刚石的高硬度使其能够高效地切削岩石。

硬质合金取芯钻头：常用于混凝土、砖块等相对较软的材料。

复合片取芯钻头：结合了多种材料的优点，具有较好的综合性能。

影响取芯质量的因素：

钻头的选择：根据被钻材料的性质选择合适类型和规格的钻头。

钻进参数：包括转速、进给速度和钻进压力等。

冷却和润滑：良好的冷却和润滑可以减少钻头磨损，提高取芯质量和钻头寿命。

展示图



Working Principle:

The working principle of the core drill bit is based on rotary cutting and extrusion. When the drill bit rotates, the cutting edge gradually cuts into the material to be drilled, and the core barrel in the center wraps and retains the cut core sample. Its rotational speed, the angle and shape of the cutting edge, and the applied pressure will all affect the drilling effect and efficiency.

Types:

Diamond core drill bit: Suitable for hard rock formations. The high hardness of diamond enables it to cut rocks efficiently.

Carbide core drill bit: Commonly used for relatively soft materials such as concrete and bricks.

Composite core drill bit: It combines the advantages of multiple materials and has better comprehensive performance.

Factors Affecting Core Samplin取芯g Quality:

Drill bit selection: Choose the appropriate type and specification of the drill bit according to the nature of the material to be drilled.

Drilling parameters: Include rotational speed, feed rate, and drilling pressure, etc.

Cooling and lubrication: Good cooling and lubrication can reduce drill bit wear, improve core sampling quality, and extend the drill bit's lifespan.

Exhibition diagram



接头



三牙轮水眼 Three-cone wheel water nozzle



PDC水眼 PDC water orifice



钻头装卸器 Drill bit loader

