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亿川钻井设备制造有限公司



河北亿川  
钻井设备制造有限公司

HEBEI YICHUAN DRILLING EQUIPMENT  
MANUFACTURING CO.,LTD

公司画册

HEBEI YICHUAN DRILLING EQUIPMENT MANUFACTURING CO.,LTD  
河北亿川钻井设备制造有限公司

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# HEBEI YICHUAN

河北亿川钻井设备制造有限公司

## 公司介绍

河北亿川钻井设备制造有限公司具有多年生产经验，是一家研发、设计及制造三牙轮钻头、PDC钻头、扩孔器等钻井工具的专业厂家。我们以优惠的价格向客户提供高质量的产品，帮助客户降低预算，按时完成钻进任务。公司产品远销60多个国家，服务于石油天然气、水井、建筑、矿山、水平定向钻井、地热、环保等行业

公司拥有经验丰富的技术及服务人员，从钻头的选择到运输，为您提供优质贴心的服务。

“以诚为本，以人为本，追求品质、服务大众”是我们的经营理念！即以诚信为根本，以人才为核心，以科学技术提高产品质量，提供高品质的服务面向大众！欢迎新老客户来我厂参观。

Established in the 1990's, Hebei Yichuan Drilling Equipment Manufacturing Co.,Ltd has been engaged in the production of roller-cone bit and PDC bit、Hdd Hole Opener、Drag bit、bit cutter for more than 20 years. we have kept our clients ahead of schedule and under budget by providing the highest quality products at the best possible prices. We ship to more than 60 countries and serve industries such as Oil & Gas, water well,Constructio,Mining, Horizontal Directional Drilling(HDD), Geothermal and Environmental. Our experiented staff is here to assist you with everything from choosing the right bit to shipping around the globe.

Yichuan uses advanced equipments including the latest CNC lathes, milling machiness and drilling machines. All products manufactured in accordance with API standards and clients' requirements.



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# Rubber Sealed Bearing

NO. / 01

## 产品信息

镶齿三牙轮钻头 橡胶密封轴承 Rubber Sealed Bearing

### 切削结构

镶齿钻头采用新配方新工艺的优质硬质合金齿，提高切削齿的综合机械性能。

### 保径结构

采用多重保径结构：牙轮外排齿镶嵌修边齿，轮背爪镶硬质合金齿，爪尖及前侧堆焊耐磨合金，提高钻头的保径能力。

### 轴承结构

采用高精度配合的径向滑动轴向止推轴承，钢珠锁紧。牙爪轴颈焊有耐磨合金，牙轮内孔焊接特殊合金并镀银，增强轴承的耐磨性和抗咬合能力

### 密封润滑

轴承密封选用高性能密封圈，最佳的密封压缩量，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。

### 产品适用

在常规转速下能承受较高的钻压，配合不同齿型齿数和出刃高度的切削结构，可适用各种地层钻进。

### Cutting Structure

High quality tungsten carbide inserts with the latest technology are adopted to improve the comprehensive mechanical properties of the bit.

### Gauge Structure

Multiple gauge protection with gauge trimmers on the heel of cone,tungsten carbides insert and hard facing on the shirttail increases holding capability and bearing life.

### Bearing Structure

High precision journal bearing with two thrust faces.Balls lock the cone.Hard faced 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 HNBR 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.It is suitable for various of formations by matching cutting structure with different tooth shape,tooth density and tooth exposure height.



# Metal Sealed Bearing

NO. / 02

## 产品信息

镶齿三牙轮钻头 金属密封轴承 Metal Sealed Bearings

### 切削结构

镶齿钻头采用新配方新工艺的优质硬质合金齿，提高切削齿的综合机械性能。

### 保径结构

采用多重保径结构：牙轮外排齿镶嵌修边齿，轮背爪镶硬质合金齿，爪尖及前侧堆焊耐磨合金，提高钻头的保径能力。

### 轴承结构

采用高精度配合的径向滑动轴向止推轴承，钢珠锁紧。牙爪轴颈焊有耐磨合金，牙轮内孔焊接特殊合金并镀银，增强轴承的耐磨性和抗咬合能力

### 密封润滑

采用先进的金属密封，金属密封结构由两个金属环和两个弹性橡胶功能圈组成，功能圈受到压缩后产生的弹力使两个金属环的密封面贴合在一起，从而实现轴承密封。在钻进过程中，金属密封面相对运动，而功能圈则分别相对于牙爪轴颈和牙轮密封槽静止，显著提高轴承密封的可靠性和寿命。可限制压差式储油补偿系统提高了轴承润滑的可靠性。采用高性能钻头专用润滑脂。

### 产品适用

金属密封钻头密封可靠性能高，适合井下动力钻具和高转速转盘钻井。

### Cutting Structure

High quality tungsten carbide inserts with the latest technology are adopted to improve the comprehensive mechanical properties of the bit.

### Gauge Structure

Multiple gauge protection with gauge trimmers on the heel of cone,tungsten carbides insert and hard facing on the shirttail increases holding capability and bearing life.

### Bearing Structure

High precision journal bearing with two thrust faces.Balls lock the cone.Hard faced 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 seals and two elastic energizers.Compressed energizers ensure good contact being kept on two sealing surfaces of metal rings by elastic force,and achieves the bearing seal.In the 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 down hole motor and high speed applications.

技术参数

IADC	适用地层	推荐参数	
		钻压WOB KN/mm (钻头直径)	转速RPM (r/min)
417/427/437	低抗压强度、高可钻性的极软地层， 如页岩、粘土、砂岩、砾岩等	0.35~0.90	140~70
447	低抗压强度、高可钻性的软地层， 如页岩、粘土、砂岩、软石灰岩、盐岩、石膏等	0.37~1.00	140~60
517	低抗压强度、高可钻性的软地层， 如页岩、粘土、砂岩、软石灰岩等	0.37~1.05	120~50
527	低抗压强度的软地层， 如页岩、粘土、砂岩、软石灰岩、盐岩、硬石膏等	0.35~1.05	120~50
537/547	低抗压强度、中软、有较硬研磨性夹层， 如硬页岩、硬石膏、软石灰岩、砂岩、含夹层白云岩等	0.50~1.05	110~40
617/627	高抗压强度、中硬、有厚的硬夹层， 如硬页岩、硬石膏、软石灰岩、砂岩、白云岩等	0.50~1.05	80~40
637/737	高抗压强度、中硬和研磨性高的地层， 如石灰岩、白云岩、砂岩、燧石等	0.70~1.20	70~40

Technical Parameters

IADC	Applicable Formations	Recommended Parameters	
		WOB KN/mm	RPM (r/min)
417/427/437	Low compressive strength, high drill-ability and extremely soft formation, like shale, clay, sandstone, conglomerate etc	0.35~0.90	140~70
447	Low compressive strength, high drill-ability and soft formation, like shale, clay, sandstone, soft limestone, salt rock, plaster etc.	0.37~1.00	140~60
517	Low compressive strength, high drill-ability and soft formation, like shale, clay, sandstone, soft limestone, salt rock, etc	0.37~1.05	120~50
527	Soft formation with low compressive, like Low compressive strength, high drill-ability and soft formation, like shale, clay, sandstone, soft limestone, salt rock, anhydrite etc.	0.35~1.05	120~50
537/547	Low compressive strength, medium hard formation with hard abrasive interlayer, like Hard shale, anhydrite, soft limestone, sandstone, dolomite with mezzanine, etc.	0.50~1.05	110~40
617/627	High compressive strength, medium hard and thick hard interlayer, like hard shale, limestone, sandstone, dolomite, etc.	0.50~1.05	80~40
637/737	High compressive strength, medium hard and high abrasive formation, like limestone, dolomite, sandstone, chert, etc.	0.70~1.20	70~40



# Metal Sealed Bearing

NO. / 03

产品信息

钢齿三牙轮钻头 金属密封轴承

切削结构

钢齿钻头齿面敷焊新型耐磨合金，增强切削齿耐磨性。

保径结构

采用多重保径结构：牙轮外排齿镶嵌修边齿，轮背爪镶硬质合金齿，爪尖及前侧堆焊耐磨合金，提高钻头的保径能力

轴承结构

采用高精度配合的径向滑动轴向止推轴承，钢珠锁紧。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密封圈，最佳的密封压缩量，有效地提高轴承密封的性能。采用高性能钻头专用润滑脂。

产品适用

在中低钻压下能实现较高转速，可适合各种地层钻进。

Cutting Structure

The wear-resistance of the teeth is enhanced with premium tungsten carbide hard facing on the tooth surfaces for the steel tooth bit. 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 trimmers on the heel and gauge inserts on the gauge surface of the cone, tungsten carbide inserts and hard facing on the shirrtail increases gauge holding capability and bearing life

Bearing Structure

High precision roller bearing with two thrust faces. Balls lock the cone, The leg bearing can get larger by arranging the roller in groove of the cone hole, so it can receive more WOB, and suitable for high RPM. Thrust faces hard faced with wear resistant alloy, Abrasion resistance and seizure resistance of the bearing are improved.

Seal and Lubrication

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

Product Application

It can bear higher WOB and faster rotary speed than conventional roller bearing bits. It is suitable for high RPM applications.

## 产品信息

### 钢齿三牙轮钻头

#### 技术参数

IADC	适用地层	推荐参数	
		钻压WOB KN/mm (钻头直径)	转速RPM (r/min)
116/117	低抗压强度、高可钻性的极软地层， 如页岩、粘土、盐岩等	0.35~0.90	180~80
126/127	低抗压强度、高可钻性的软地层， 如页岩、粘土、盐岩、软石灰岩等	0.35~1.00	180~80
136/137	低抗压强度的软至中软地层或软岩层中有较硬的夹层， 如硬石膏、软石灰岩、砾岩等	0.35~1.05	130~60
216/217	抗压强度较高的中等硬度，并有硬夹层， 如硬页岩、砾岩、石灰岩等	0.5~1.20	100~50

#### Technical Parameters

IADC	Applicable Formations	Recommended Parameters	
		WOB KN/mm	RPM (r/min)
116/117	Low compressive strength, high drill-ability and extremely soft formation, like soft shale, clay, salt rock, etc.	0.35~0.90	180~80
126/127	Low compressive strength, high drill-ability and soft formation, like shale, clay, salt rock and soft limestone, etc.	0.35~1.00	180~80
136/137	Soft to medium soft with low compressive strength or soft with hard interlayer, like anhydrite, soft limestone, sandstone, etc.	0.35~1.05	130~60
216/217	Soft to medium soft with low compressive strength or soft with hard interlayer, like anhydrite, soft limestone, sandstone, etc.	0.5~1.20	100~50
216/217	Medium hard formation with relatively high compressive strength and hard interlayer, like hard shale, sandstone, limestone, etc.	0.5~1.20	100~50



# Roller Cone Cutter

NO. / 04

## 产品信息

### 工程系列钻头 Roller Cone Cutter

#### 结构特点:

针对各类岩层，经优化设计，运用不同齿形、齿高及合理布齿，有较好的可钻性能；对轴承系统有针对性的进行优化，承载能力强，寿命长。广泛用于旋挖市场，非开挖市场，可取得高钻进效率。

#### Main structure features :

Optimal designs for various applicable formations, with different teeth shape, teeth height, and teeth placement, provide better drilling performance.

Individualized optimized design for bearing system guarantees and excellent performance of bearing capacity and a long working life.

Widely used in rotary drilling and HDD drilling markets, with high drilling efficiency.



# Rock Reamer

NO. / 05

## 产品信息

### 岩石扩孔器 Rock Reamer

扩孔器用于扩大预钻孔的直径。它们是根据规格定制的，并且有各种尺寸。扩孔器有时称为铰刀。用于在水平方向钻孔 (HDD)

HDD中扩大导向孔

扩孔器的范围从12到66，分为两种类型：镶齿牙轮刀片，用于各种抗压强度的地层。该产品用于石油，天然气，石化，污水，电力和光纤管道在无挖掘水平定向钻井中的扩孔。

扩孔器具有更好的齿分布，抗磨损能力，更大的切割面积和更高的效率。

内外防滴装置应用于开孔器，减少了钻井环境恶劣的牙掌下落事故。

滚子轴承和更大截面应用于切割器和橡胶密封，提高开孔器的使用寿命。

定向件在机身上用于导向和支撑，耐磨合金在表面上提高了耐磨性和抗冲击性能

Hole Openers are used to enlarge the diameter of a pre-drilled hole. They are made according to customer requirements, and come in a wide variety of sizes. A Hole Opener is sometimes referred to as a Reamer.

Used to enlarge the pilot hole in Horizontal Directional Drilling(HDD) - HDD

Hole opener ranging from 12 to 66 that is divided into two types: TCI cutter, and is used in various compressive strength of the formations. The product is used for the reaming of the oil, gas, petrochemical, sewage, power and fiber optic pipelines in the no-dig horizontal directional drilling.

Hole opener takes its advantages in its better teeth distribution, wearing resistance ability, bigger cutting area and higher efficiency.

Inner and outer anti-drop device are applied in the hole opener to reduce the dropping accident of cutter under bad drilling environment.

Roller bearing and bigger section are applied in cutter and rubber seals improving the running life of the hole opener.



# Hole Opener Series

产品信息

组合牙轮钻头系列 Hole Opener

NO. / 06

组合牙轮钻头主要应用于桥梁、高楼的钻孔桩基钻进，用户遍及全国三十个省市的地勘、铁道、水利、建筑等各个系统，深受广大用户所信赖。

使用范围：

组合牙轮钻头适用于灌溉基岩钻进，水井和通风孔钻进，适应地层为强、中、微风化岩石和卵砾石，如花岗岩、片麻岩、砂岩、灰岩、页岩等。

组合牙轮钻头具有以下特点：

- 1、利用水利学原理清除孔底沉渣。
- 2、掌背防磨损结构。
- 3、独特合理的牙轮分布方式
- 4、护筒保护块，使钻头稳定性进一步增强，并延长钻头寿命

PZ系列组合牙轮钻头有以下几点性能：

尖锐性、耐磨性、坚固性、稳定性、自洁性、安全性。

Products can be customized according to customer requirements. Large diameter products are available.

Size:300mm~2500mm

1. Adopting anti-falling design to reduce fall accidents in poor drilling environment
2. Anti-wear structure on palms
3. Reasonable cones distribution mode
4. Enhanced bit stability, longer working life



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# PDC bit

NO. / 07

产品信息

PDC 钻头 PDC BIT

### 胎体式PDC钻头

胎体式金刚石复合片(PDC)钻头是将金刚石复合片通过钎焊方式焊接在钻头胎体上的一种切削型钻头。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

钢体PDC钻头，是用镍、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。

### Matrix-body

"Matrix" is a very hard, rather brittle composite material comprising tungsten carbide grains metallurgically bonded with a softer, tougher, metallic binder. Matrix is desirable as a bit material, because its hardness is resistant to abrasion and erosion. It is capable of withstanding relatively high compressive loads, but, compared with steel, has low resistance to impact loading.

Matrix is relatively heterogeneous, because it is a composite material. Because the size and placement of the particles of tungsten carbide it contains vary (by both design and circumstances), its physical properties are slightly less predictable than steel.

### Steel-body

Steel is metallurgically opposite of matrix. It is capable of withstanding high impact loads, but is relatively soft and, without protective features, would quickly fail by abrasion and erosion. Quality steels are essentially homogeneous with structural limits that rarely surprise their users.



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# PDC Drag Bit

## 产品信息

NO. / 08

PDC 复合片刮刀式钻头 PDC Drag Bit

### 地质勘探用复合片钻头

主要用于地质勘察勘探的复合片钻头，适用于软到中硬岩层，现在有些厂家新研发的新型复合片可以应用到十级硬度的岩层。

### 煤田钻采用复合片钻头

主要是用于煤矿上煤层钻探采挖。一般来讲煤田的岩层相对较软，复合片钻头被大量应用，如锚杆钻头，三翼钻头等。

### 石油勘探用复合片钻头

主要是应用在油气田的钻采用钻头。目前来说，油田用复合片钻头是所有复合片钻头里面造价最高，要求最高的。可以说是复合片钻头里面的贵族了。

PDC bits are used for water well drilling, geotechnical and environmental drilling, mineral exploration, geothermal drilling, construction, etc.

Standard size : 56, 65, 75, 94, 113, 133, 153mm, 165mm 171mm ect (2inch to 6inch)

Number of wings / blades : 3-4

Thread size : as requested

Product character: adopting high quality PDC cutters to enhance wear resistance and prolong service life



# Drag bit

## 产品信息

NO. / 09

刮刀钻头 Drag bit

### 刮刀钻头

是修井作业中常用的一种工具，用来钻水泥塞、冲钻砂桥、盐桥、刮去套管壁上脏物和硬蜡与一些矿物结晶。还可刮削井眼，使井壁光洁整齐，可用于衬管内钻进、侧钻时钻进（可以破坏侧钻时形成的键槽）或对射孔炮弹垫子的钻磨等。在钻压作用下，底部吃入水泥等被钻物，再通过旋转，使吃入部分在圆周方向进行切削，逐步将被钻物钻去。侧部将被钻物磨铣，形圆柱体空间，较好地修整所钻出的井眼。

### 多翼刮刀

在软岩层中钻进效率极高，适合开孔使用。冠部翼片数量随钻头口径大小变化而增减。此类型可满足大口径钻孔需要。φ65——φ450 侧翼刮刀：适用于小口径钻孔。φ50 φ56 φ60 φ65 内凹三翼刮刀钻头：在复杂岩层中钻进适应力强，具有较好的稳定性，是完成一般钻孔的首选工具。φ75——φ153 PDC锥形刮刀钻头

A drag bit is a drill bit usually designed for use in soft formations such as sand, clay, or some soft rock. However, they will not work well in coarse gravel or hard rock formations. Uses include drilling water wells, mining, geothermal and environmental exploration drilling. Whenever possible, they should be used to drill pilot holes because they produce cuttings that are easiest to log.



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# Cross Over Sub

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## 产品信息

### 转换接头 Cross-over Sub

转换接头在石油、天然气和地质钻井作业中起钻柱构伯的转换连接作用，是连接上部钻具与下部钻具的主要工具之一，分钻柱转换接头和油管转换接头。A型（同径式）、B型（异径式）和C型（左旋式）。在钻井过程中，下部钻具的扣型与上部钻具的扣型连接不上，这就需要用转换接头来连接。

Cross-over sub acts for switching and connection of drill stem in petroleum,natural gas and geology drilling work. During drilling operations,cross-over sub is mainly used to connect upper and lower drilling tools in different connectors.

## 技术参数

种类	适用地层	适用地层	适用地层	型号
1	方钻杆转换接头	方钻杆	钻杆	A or B
2	钻杆转换接头	钻杆	钻杆	A or B
3	过渡转换接头	钻杆	钻铤	A or B
4	钻铤转换接头	钻铤	钻铤	A or B
5	钻头转换接头	钻铤	钻头	A or B
6	水龙头转换接头	水龙头下接头	方钻杆	C
7	打捞用转换接头	方钻杆	钻杆	C
		钻杆	打捞工具	C

## Technical Parameters

Sort	Description	Upper Connection Part	Lower Connection Part	Type
1	Kelly Cross-over Sub	Kelly	Drill Pipe	A or B
2	Drill Pipe Cross-over Sub	Drill Pipe	Drill Pipe	A or B
3	Interim Cross-over Sub	Drill Pipe	Drill Collar	A or B
4	Drill collar Cross-over Sub	Drill Collar	Drill Collar	A or B
5	Drill bit Cross-over Sub	Drill Collar	Drill Bit	A or B
6	Swivel	Swivel Lower Sub	Kelly	C
7	Fishing Cross-over Sub	Kelly	Drill Pipe	C
		Drill Pipe	Fishing Tool	C

# Construction

## Cases

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### 施工案例

### 施工案例 Construction cases



### 生产车间

### 生产车间 Production workshop

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