MAILIN MATT TECHNOLOGY (XIAMEN) CO., LTD



麦林迈特科技产品手册

MERLINMET TECHNOLOGY PRODUCT BROCHURE

HIGH-TECH INNOVATION RESEARCH AND DEVELOPMENT

MERLIN
MATT TECHNOLOGY

麦林迈特

CONTENTS

目 录

ABOUT THE COMPANY

企业简介 / Company Profile 01

企业愿景 / Company Culture 02

采煤齿系列 / Coal mining teeth series 03

掘进机截齿系列 / Roadheader gear series 09

底座系列 / The base of series 17

铣刨机截齿系列 / Milling machine pick series 21

铣挖机截齿系列/Series of picks for milling machines 23

MLMT旋挖截齿 / Mlmt rotary cutting cutte 25

MLMT牙轮 / Mlmt tooth wheel 33

MLMT工法钻具 / Mlmt drilling tool 35

工法下圈 / Construction method lower circle 37

双底嵌岩捞沙斗 / Double bottomed rock socketed sand bucke 41

MLMT工法服务岩石数据库 / Mlmt construction method service rock database 43

COMPANY PROFILE
企业简介

公司总部位于美丽的海滨城市福建省厦门市,是一家注重科技创新的研发型企业。公司致力于为采矿业、工程建筑、公路施工、隧道掘进等领域,提供高端配套工 具及配件的研发、设计及产品。

公司主要产品:露天及地下采矿用采煤截齿、掘进截齿、齿座和齿套,基础工程及工程隧道用各类钻头、旋挖截齿、掘进截齿和齿座,公路、桥梁及机场跑道等保养维护作业用铣刨刀具、齿座和齿套,以及露天挖沟、非开挖钻进、地质勘探和各类破碎领域,提供优质的工具和配件服务。

产品优势:优质的合金和特钢材料、先进的热处理和焊接工艺、完备的检验设备和标准、优秀的研发和市场服务团队、以及标准化的生产和管理体系。 经营理念:客户为中心,市场为导向,以研发创新和服务需求作为企业发展的驱动力。采矿工具:无论在露天还是地下采矿的应用领域,麦林迈特工具都将高效、 经济和安全的提供解决方案,从截齿工具到齿座、齿套配套,以及各种耐磨方案的提供,让客户在苛刻的矿山采掘作业中,得到使用寿命更长、经济成本更低的安全与高效的产品服务。

工程工具:无论在建筑、桥梁和隧道等各种基础工程领域,麦林迈特工具都将提供高性能的解决方案,从桩基钻头到钻进截齿,以及各种配套配件的提供,同时麦林迈特的服务团队能根据多变的地质状况,快速到现场为客户进行解决方案设计,高性能的硬件供应和高效的软件服务,是让客户盈利和满意的基础。

The company is headquartered in Xiamen City, Fujian Province, a beautiful coastal city. It is a research and development-oriented enterprise that focuses on technological innovation. The company is committed to providing research and development, design and products of high-end supporting tools and accessories for fields such as mining, engineering construction, highway construction, and tunnel excavation.

Main products: Coal mining picks, roadheader picks, tooth holders and tooth sleeves for open-pit and underground mining; various types of drill bits, rotary digging picks, roadheader picks and tooth holders for foundation engineering and engineering tunnels; milling cutters, tooth holders and tooth sleeves for maintenance operations of highways, bridges and airport runways; and providing high-quality tools and accessories services in open-pit trenching, trenchless drilling, geological exploration and various crushing fields.

Product advantages: High-quality alloy and special steel materials, advanced heat treatment and welding processes, complete inspection equipment and standards, excellent R & D and market service teams, and standardized production and management systems.

Business philosophy: Customer-centered, market-oriented, taking R & D innovation and service demand as the driving force for enterprise development.

Mining tools: In both open-pit and underground mining application fields, Merlin Met tools will provide efficient, economical and safe solutions. From cutting tools to tooth holders and tooth sleeve matching, as well as the provision of various wear-resistant solutions, customers can obtain safer and more efficient products and services with longer service life and lower economic cost in harsh mining operations.

Engineering tools: In various foundation engineering fields such as construction, bridges and tunnels, Merlin Met tools will provide high-performance solutions. From pile foundation drill bits to drilling picks and the provision of various supporting accessories. At the same time, Merlin Met's service team can quickly go to the site to design solutions for customers according to the changeable geological conditions. High-performance hardware supply and efficient software services are the basis for customer profitability and satisfaction.

XIAMEN AREA

The company is headquartered in the beautiful coastal city of Xiamen, Fujian

CORPORATE VISION
企业愿景

麦林迈特品牌一直致力于为客户提供最优秀产品与服务,营造独特的麦林迈特工法服务体验。实践是检验产品的唯一标准,凝聚最专业的力量,打造最具有影响力的矿山工具品牌。

公司拥有优秀的团队,包括专业的研发团队、高效的营销服务团队。自创建以来,现全国有50多家合作经营门店,工程/矿山/煤矿合作伙伴上百家企业。麦林迈特科技(厦门)有限公司有望成为行业可持续的高速发展。国内的领军企业,引领矿山工具和相关领域的发展潮流,实现长期可持续的高速发展。

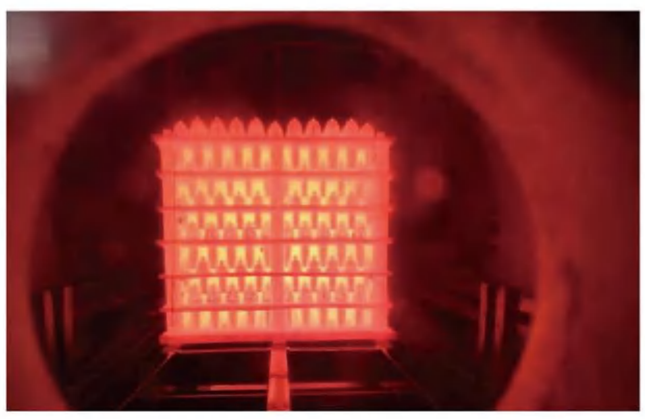
The Merlin Met brand has always been committed to providing customers with the best products and services, and creating a unique Merlin Met construction method service experience. Practice is the only criterion for testing products. Gather the most professional strength and build the most influential mining tool brand.

The company has an excellent team, including a professional R & D team and an efficient marketing service team. Since its establishment, there are now more than 50 cooperative stores nationwide, and there are hundreds of enterprises as engineering/mining/coal mine partners. Merlin Met Technology (Xiamen) Co., Ltd. is expected to become a leading enterprise in the industry with sustainable high-speed development, leading the development trend of mining tools and related fields and realizing long-term sustainable high-speed development.



FACTORY SHOW













COAL MINING TOOTH SERIES

采煤齿系列

MINING GEAR

采煤齿系列

本系列截齿为重型采煤机滚筒而设计,主要针对F8-F10等级煤矸石,硬岩石等工况,效果尤为突出。通过真空钎焊与真空热处理工艺,焊缝剪切力增强从180Mpa提高到330Mpa以上符合重型破岩滚筒的设计理念。通过真空热处理方式增强了齿体热处理的均匀性与硬度精准性,提高了齿体本身的耐磨性能与抗冲击性能,在截割过程中展现了优越综合性能。

The picks in this series are designed for the drums of heavy-duty coal mining machines. They are mainly used for working conditions such as coal gangue and hard rocks of F8 - F10 grades, with particularly outstanding effects. Through the vacuum brazing and vacuum heat treatment processes, the shear strength of the weld is enhanced, increasing from 180 Mpa to over 330 Mpa, which conforms to the design concept of heavy-duty rock-breaking drums. The vacuum heat treatment method has enhanced the uniformity of heat treatment and the accuracy of hardness of the pick body, improved the wear resistance and impact resistance of the pick body itself, and demonstrated superior comprehensive performance during the cutting process.



COAL MINING TOOTH SERIES

U82系列



U82-19A



U82-19HF

U84系列



U84-22A



U84-22HF

U85系列



U85-22A



U85-22HF

U92系列



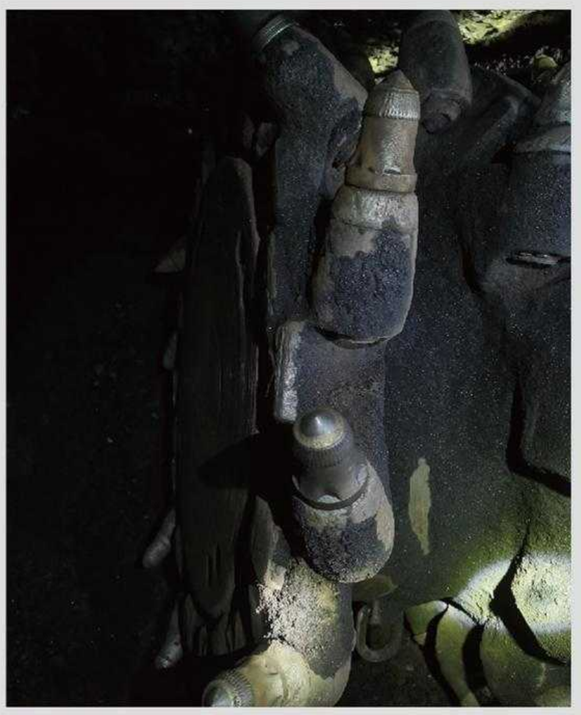
U92-19A



U92-19HF









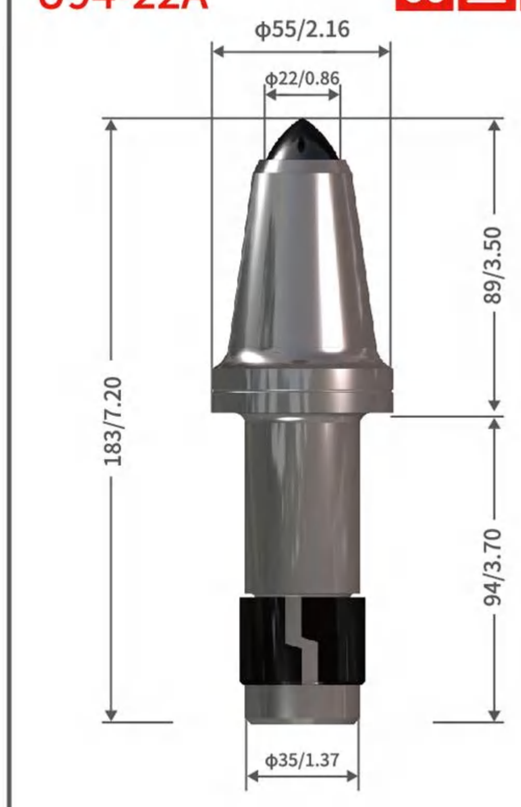
COAL MINING TOOTH SERIES

U94系列 U94-19A22A/HF

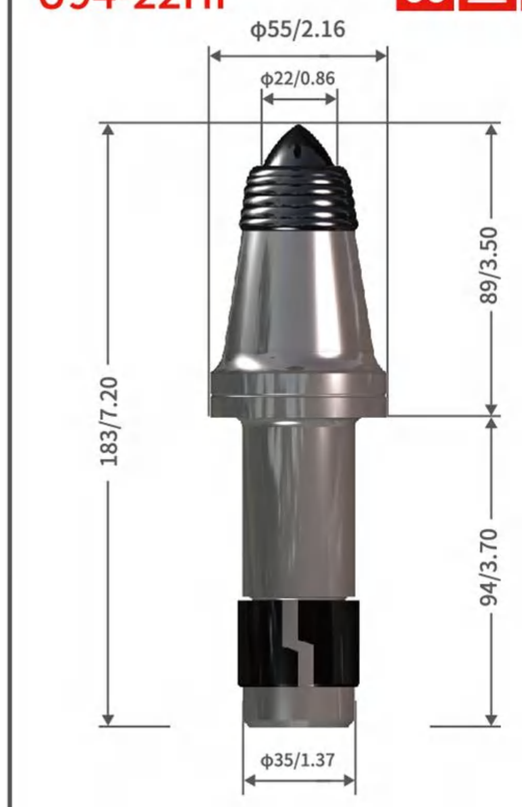
U94-19A



U94-22A

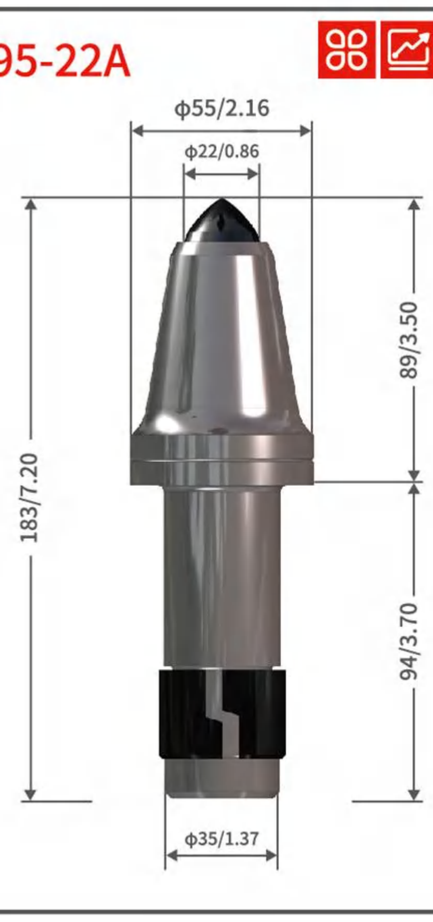


U94-22HF

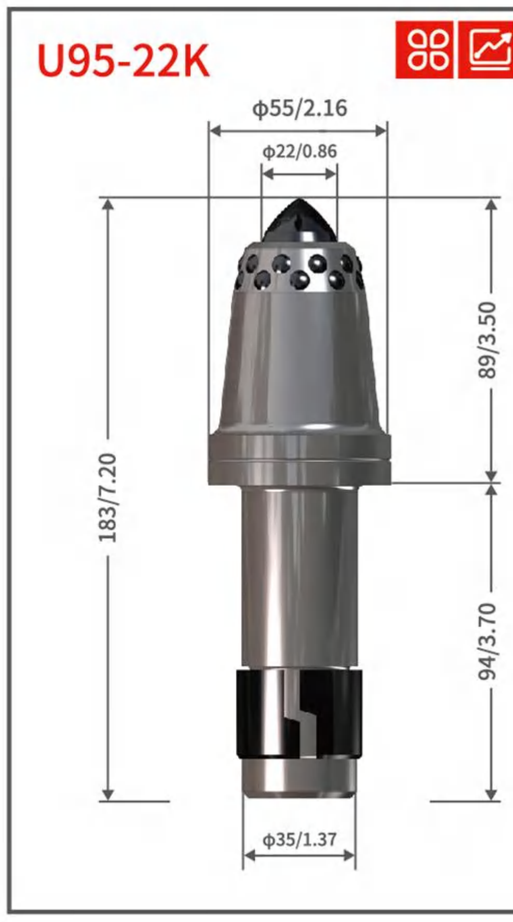


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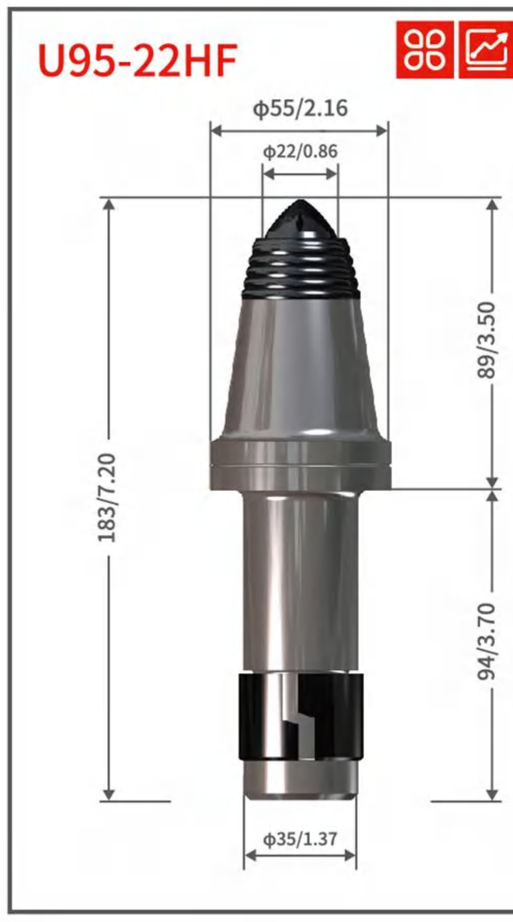
U95-22A



U95-22K



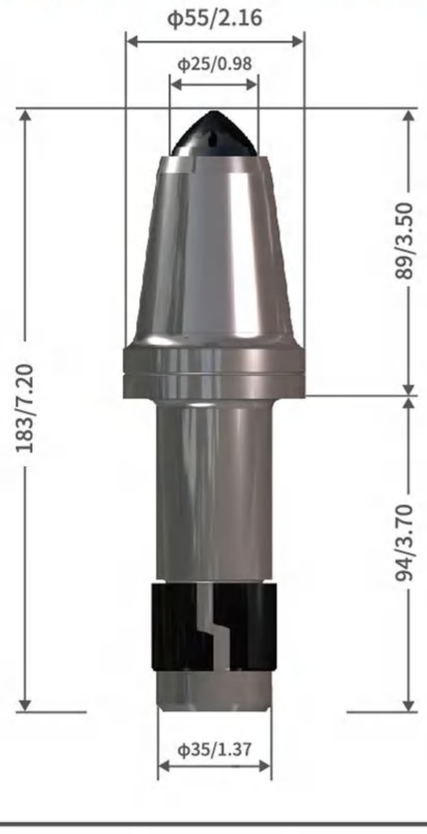
U95-22HF



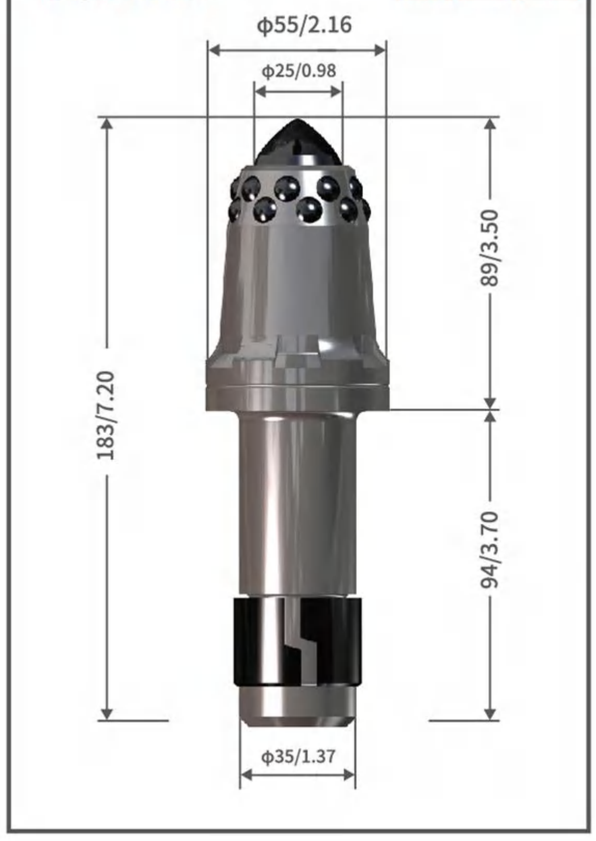


U95系列 U95-25A/K/HF

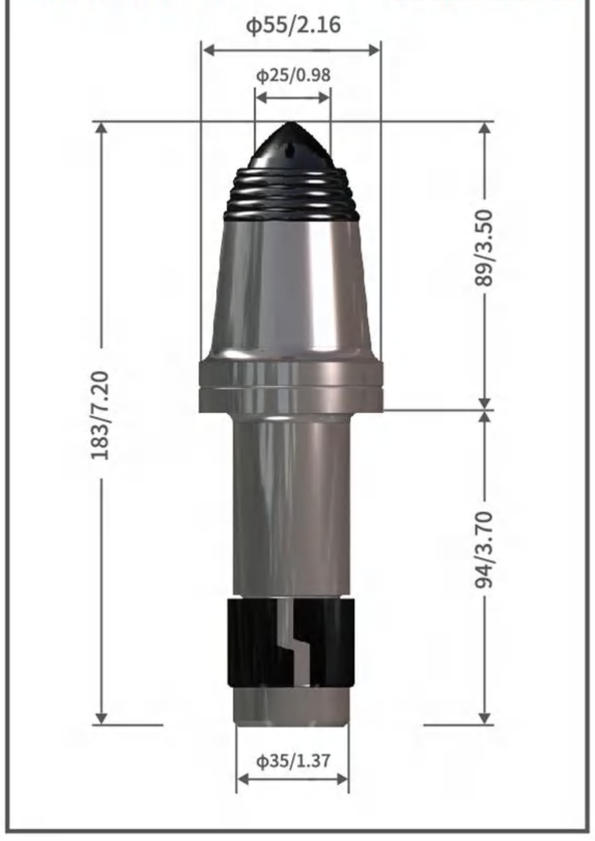
U95-25A



U95-25K

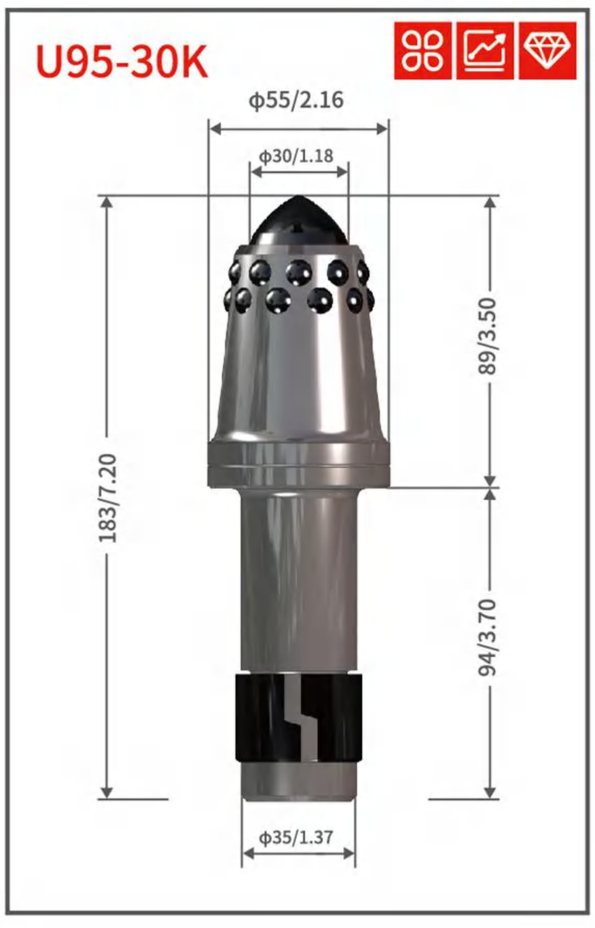


U95-25HF

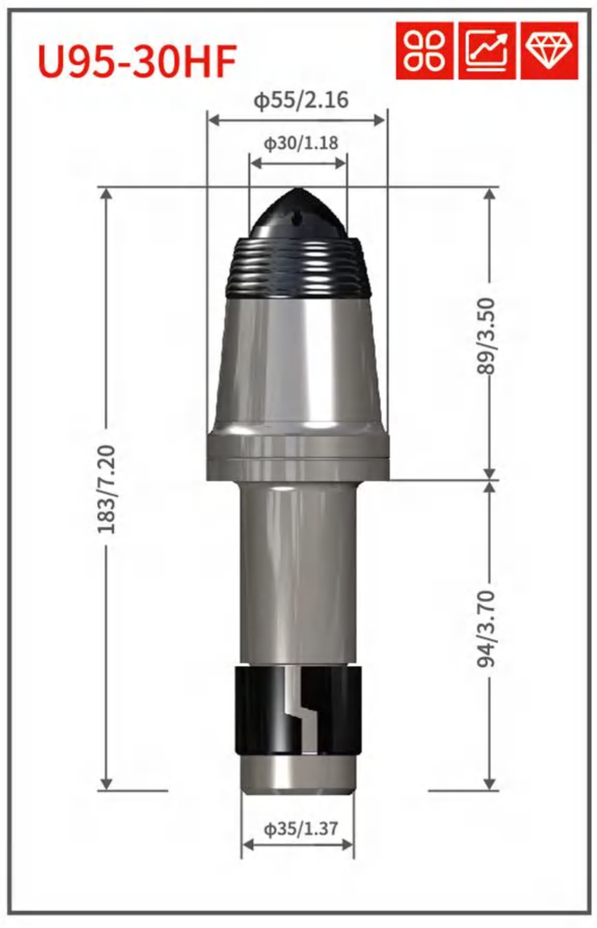


U95系列 U95-30K/HF

U95-30K



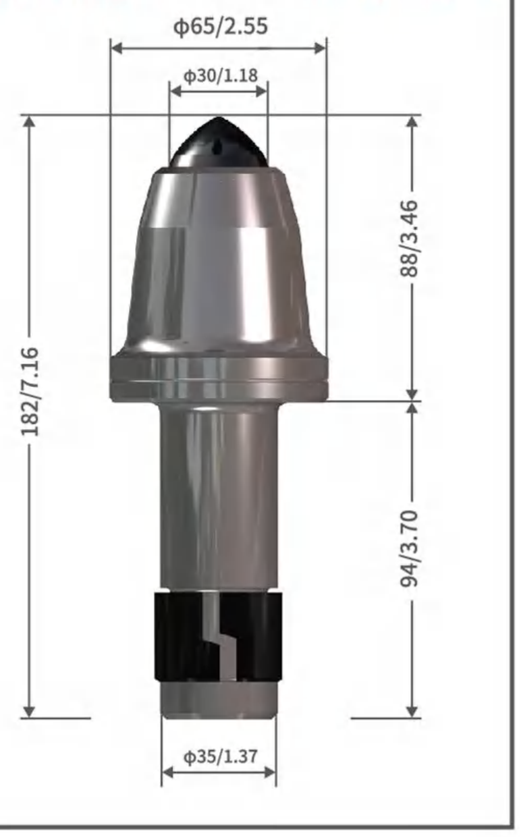
U95-30HF



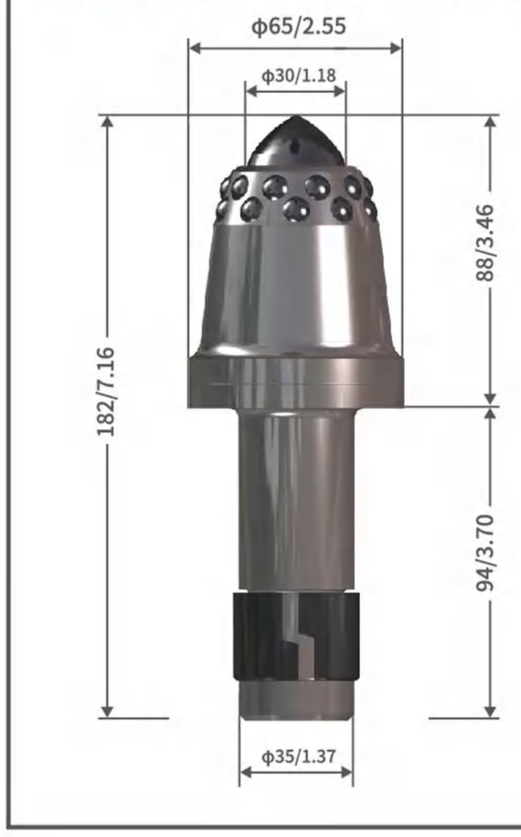
2024>>>
COAL MINING TOOTH SERIES

U95系列 U95-30A/K/HF

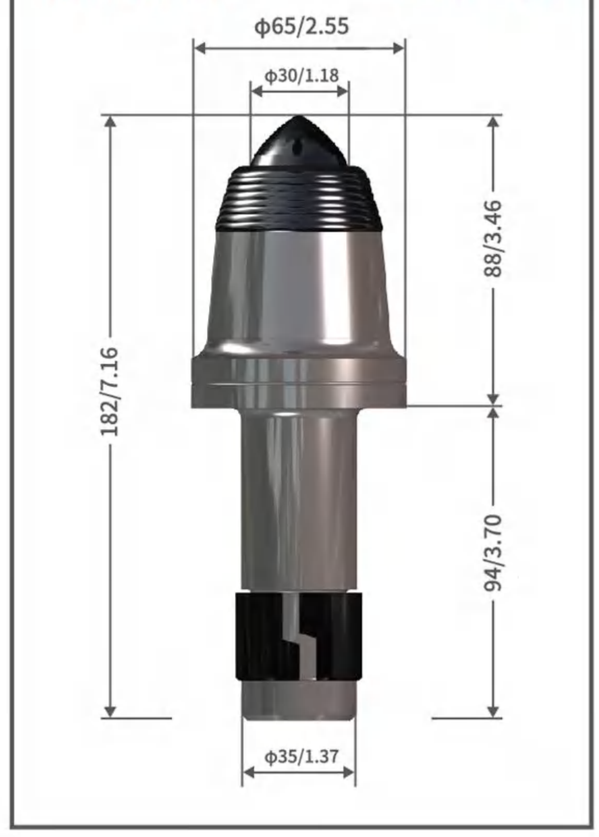
U95-30A



U95-30K



U95-30HF

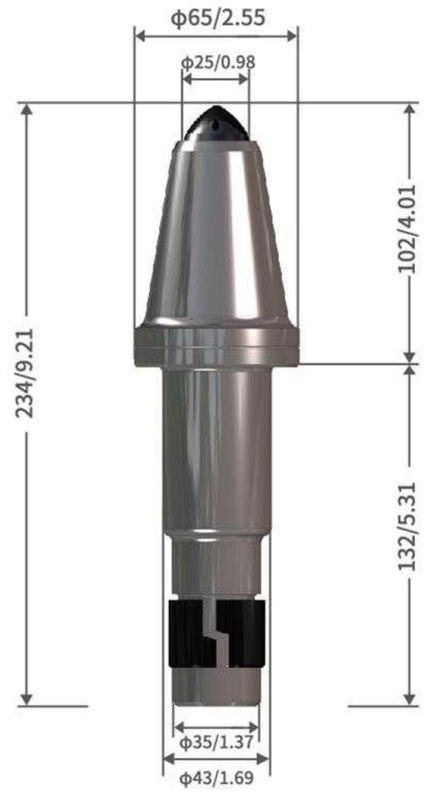


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COAL MINING TOOTH SERIES

U170系列 U170-25A/K/HF

U170-25A



U170-25K

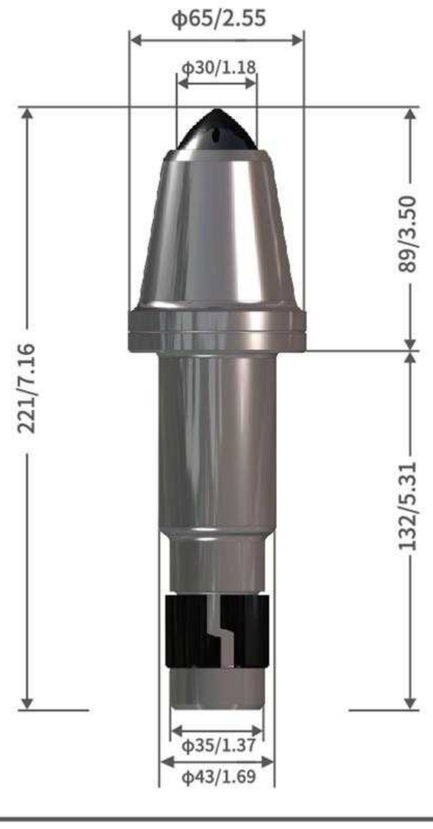


U170-25HF

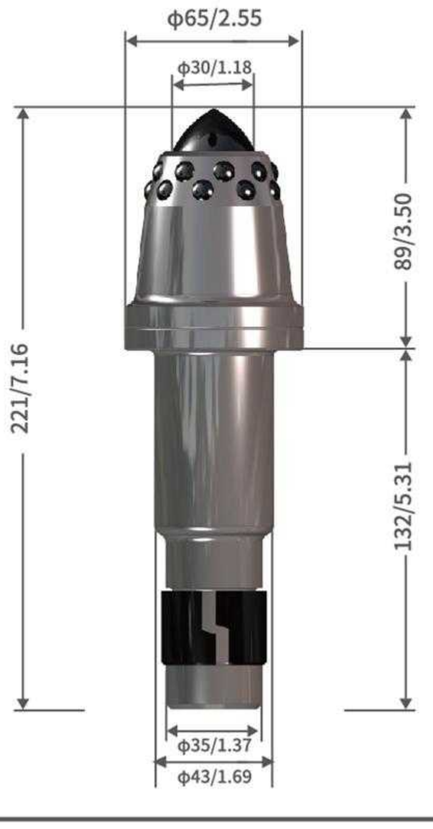


U170系列 U170-30A/K/HF

U170-30A



U170-30K



U170-30HF



ROADHEADER PICK SERIES

掘进机截齿系列



ROADHEADER PICK SERIES

掘进机截齿系列

主要用于煤矿巷道与桥梁隧道开采等领域，通过截齿的作用力，使得坚硬岩石破裂。对安全、高效、低成本的追求是当今采矿业面临的挑战，对截齿的性能要求也会更高。我公司主要根据不同的硬岩、极硬岩设计生产具备高性能的截齿,解决客户在施工中遇到的各种复杂性岩层。

Mainly used in fields such as coal mine roadways and bridge and tunnel mining. Through the force of cutting picks, hard rocks are fractured. The pursuit of safety, high efficiency, and low cost is a challenge faced by the mining industry today, and the performance requirements for cutting picks will also be higher. Our company mainly designs and produces cutting picks with high performance according to different hard rocks and extremely hard rocks to solve various complex rock formations encountered by customers during construction.



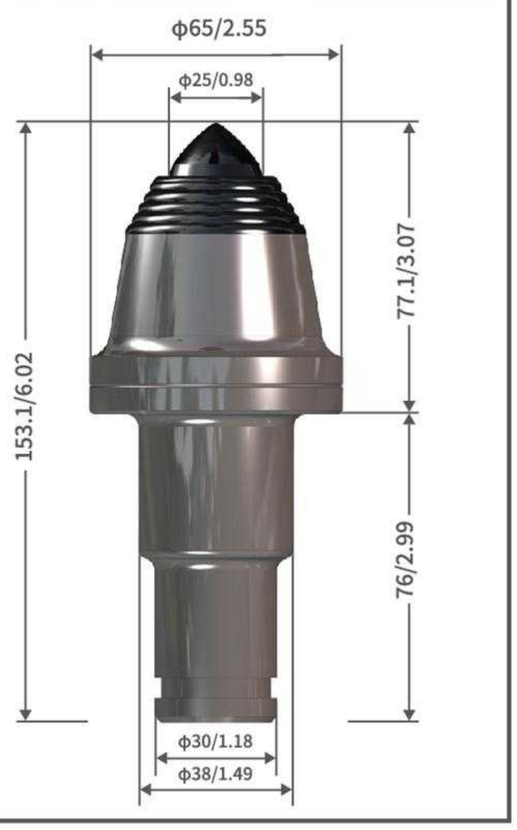
ROADHEADER PICK SERIES

U47系列 U47-65-25K/HF

U47-65-25K

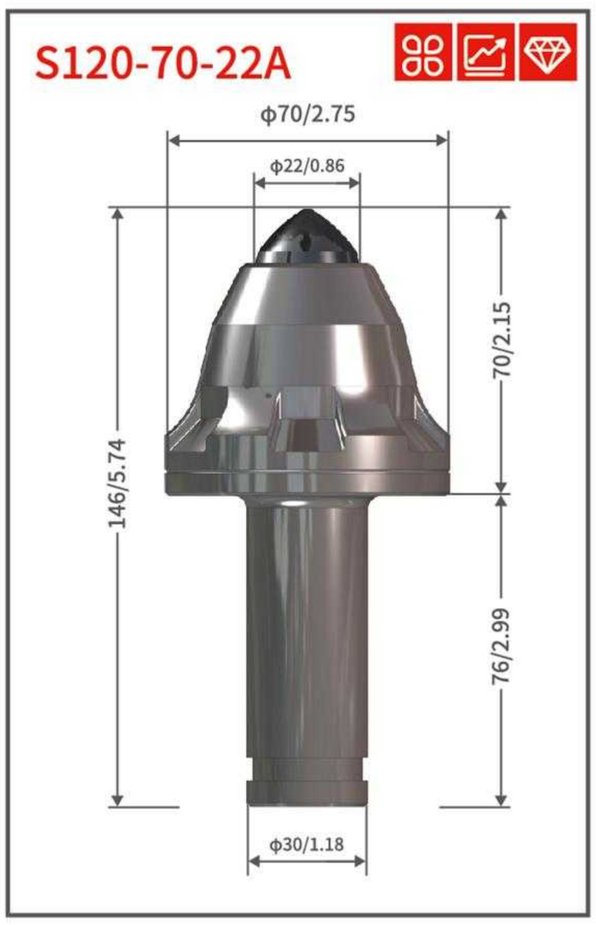


U47-65-25HF

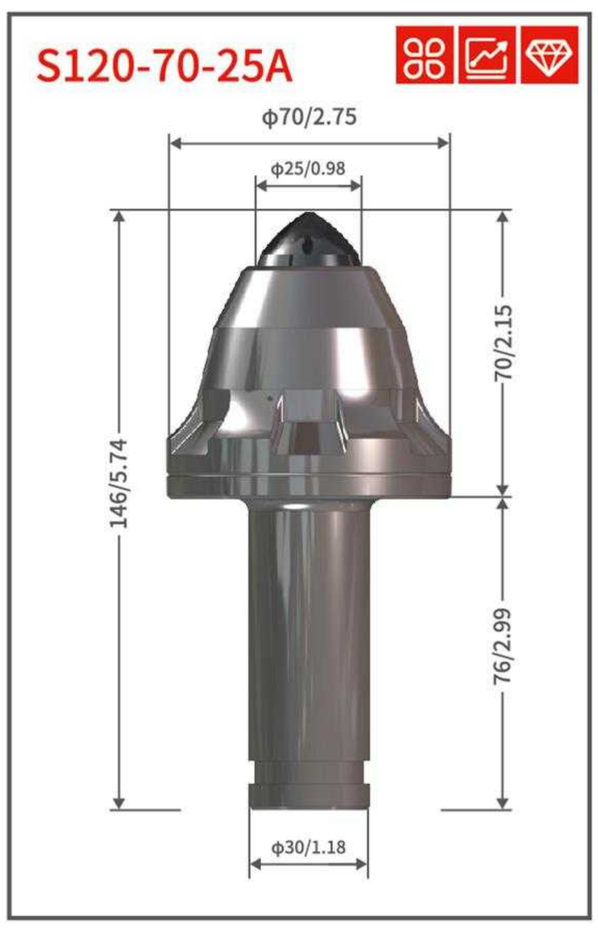


S120系列 120-70-22A/25A/K

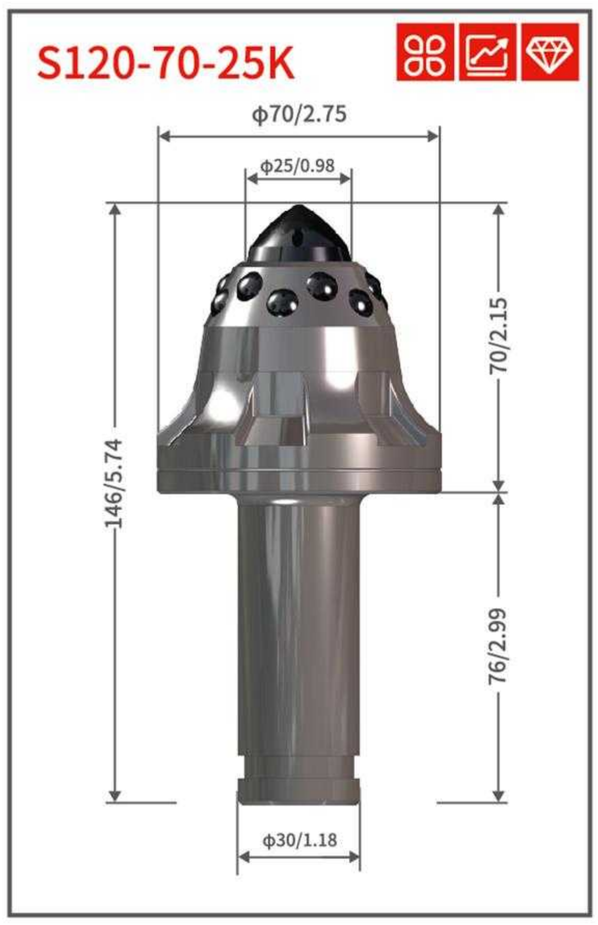
S120-70-22A



S120-70-25A



S120-70-25K

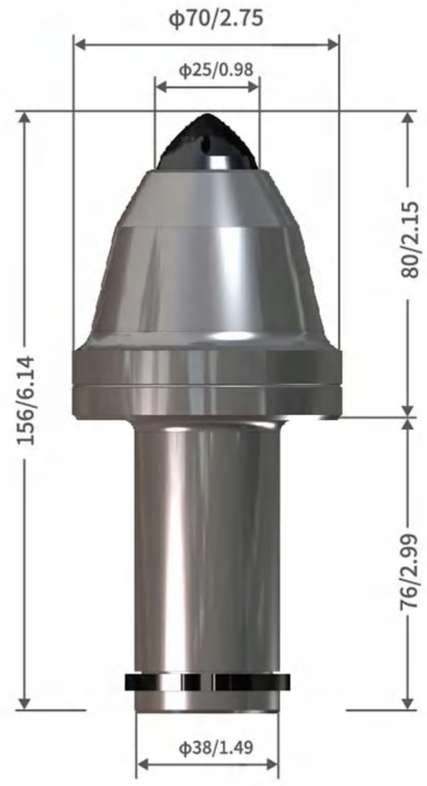




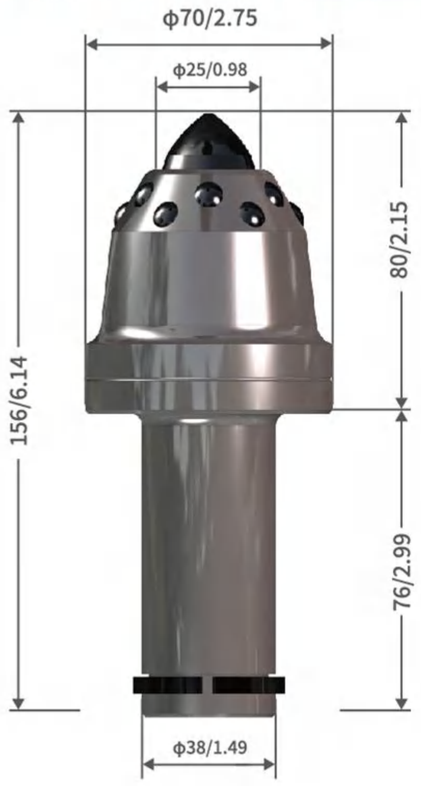
ROADHEADER SERIES

S135系列 135-70-38-25A/K/HF

S135-70-38-25A



S135-70-38-25K

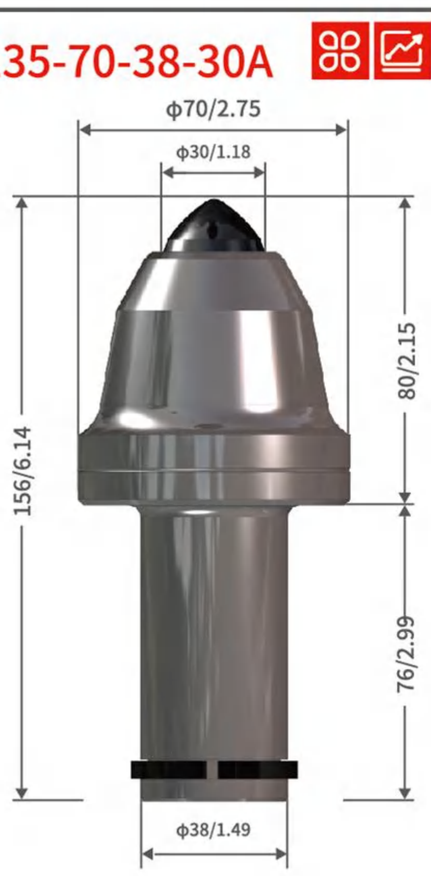


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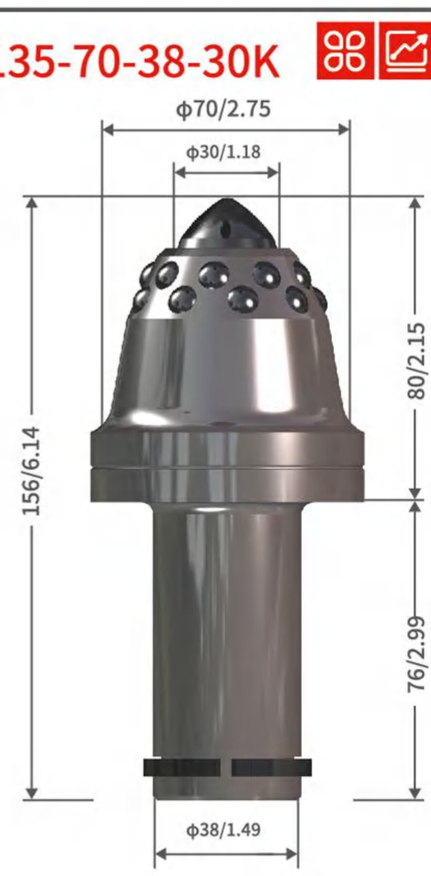


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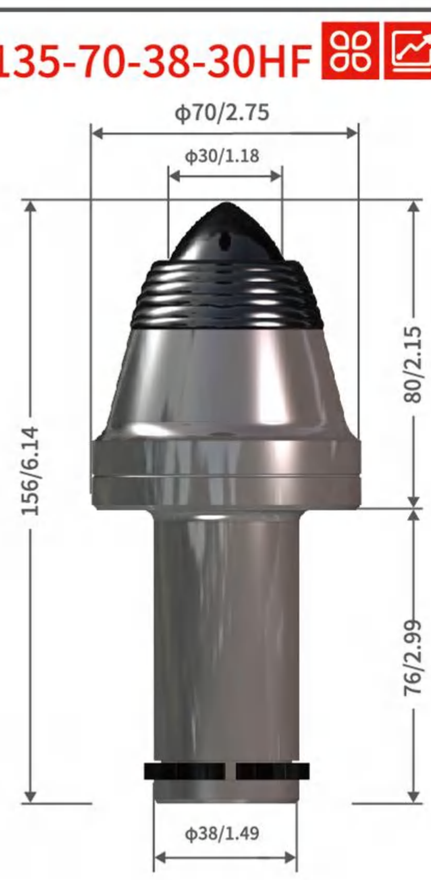
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S135-70-38-30K



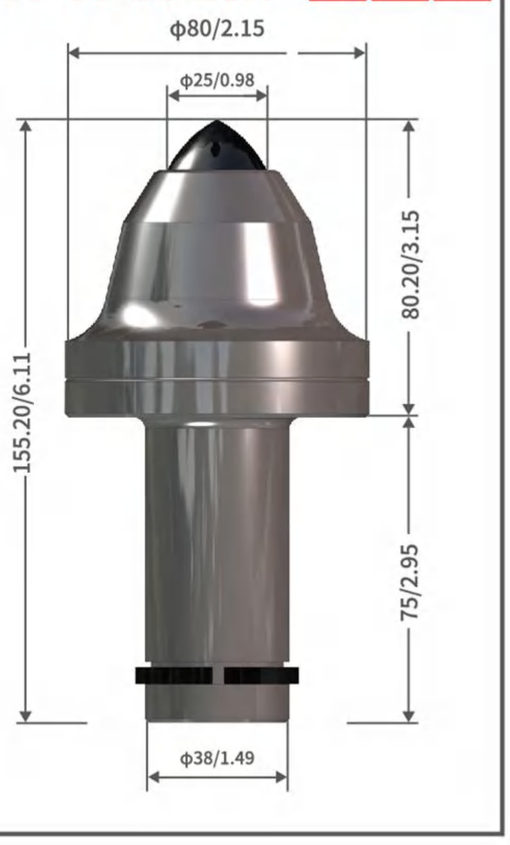
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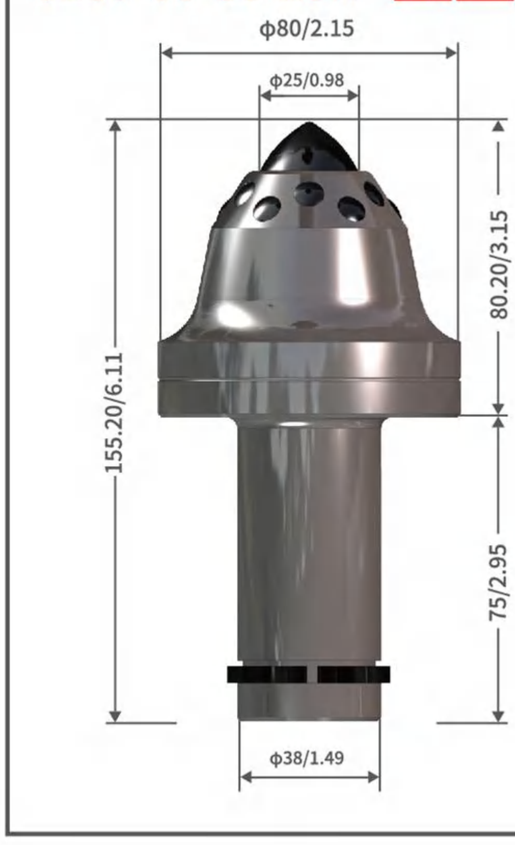


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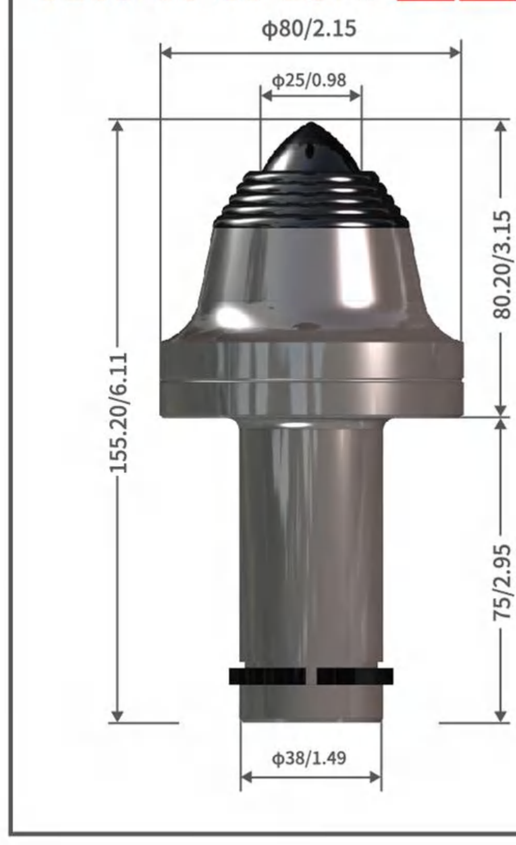
S135-80-38-25A



S135-80-38-25K

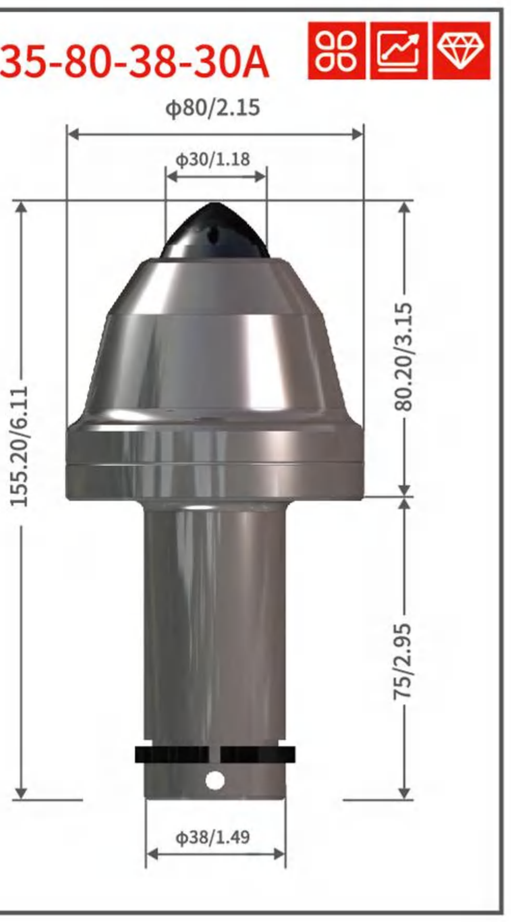


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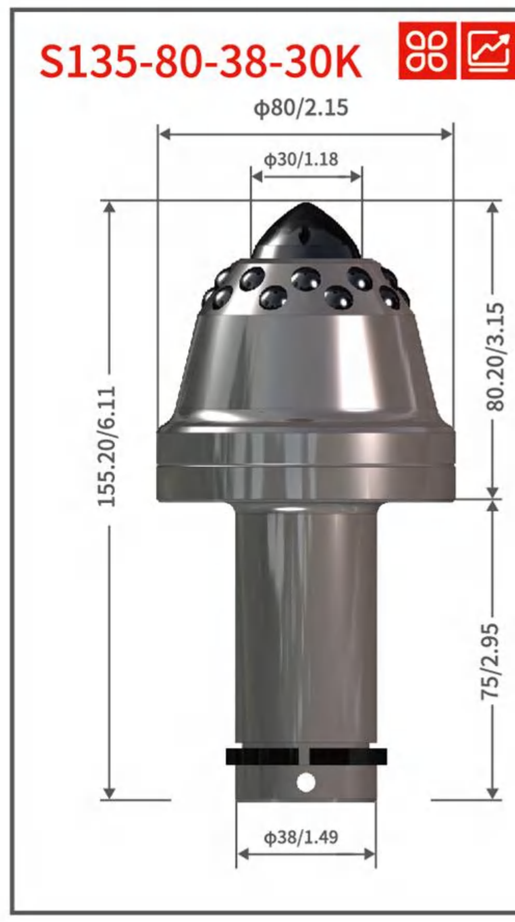


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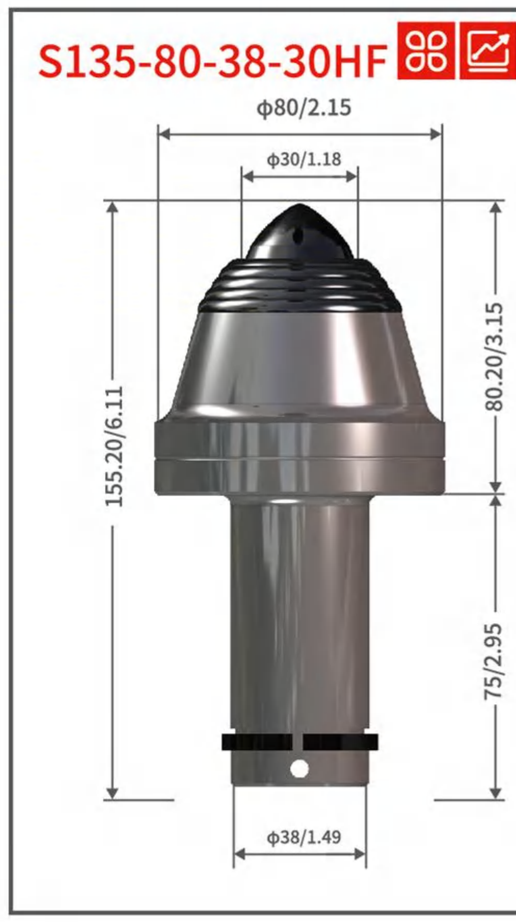
S135-80-38-30A



S135-80-38-30K



S135-80-38-30HF

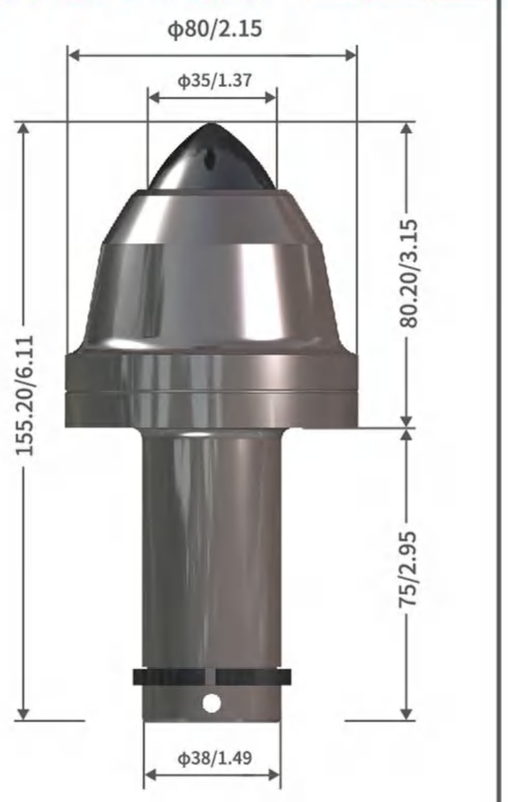




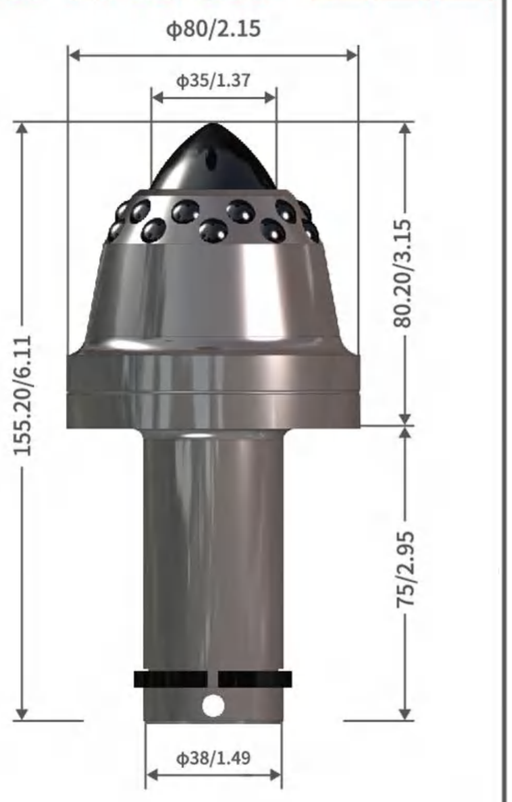
ROADHEADER SERIES

S135系列 135-80-38-35A/K/HF

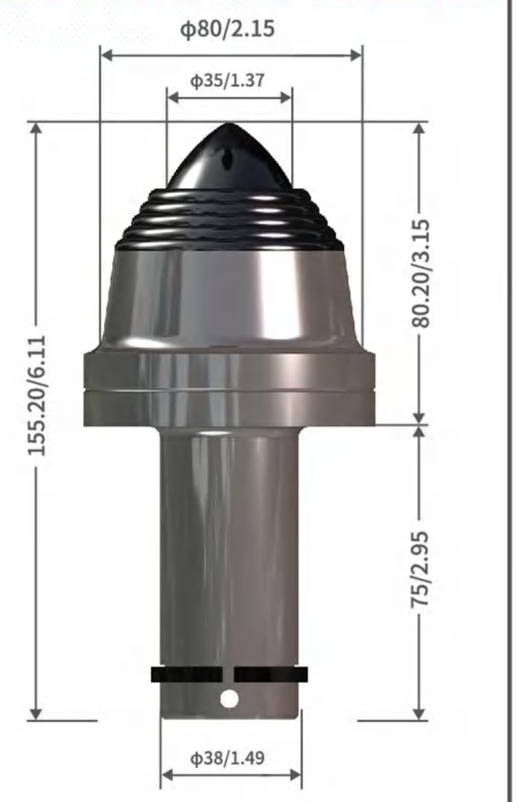
S135-80-38-35A



S135-80-38-35K



S135-80-38-35HF

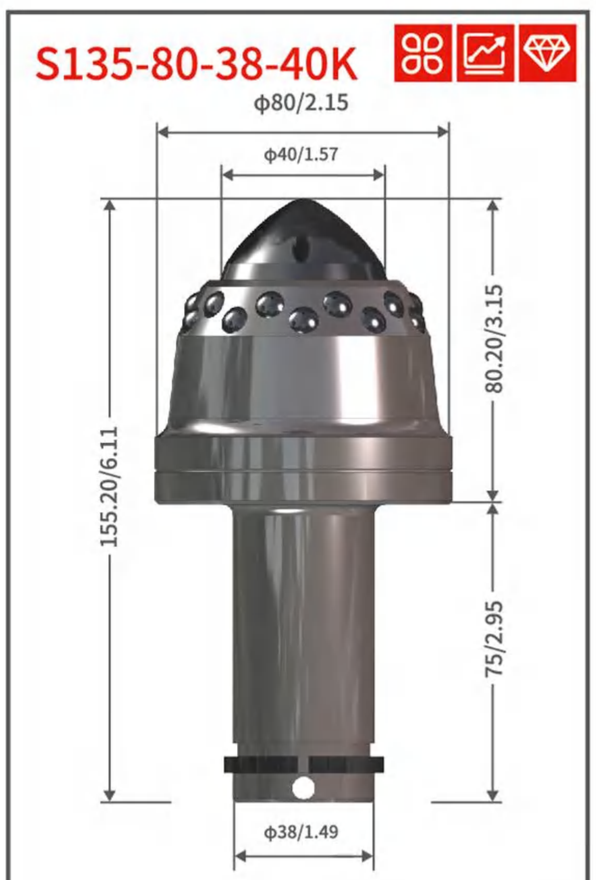


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S135-80-38-40A



S135-80-38-40K



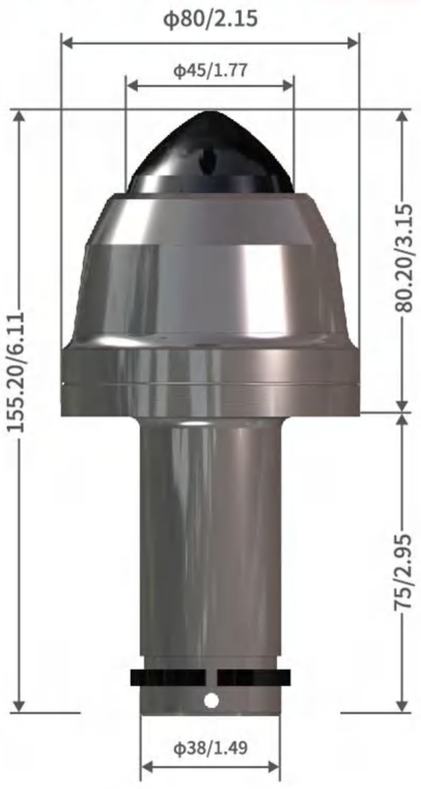
S135-80-38-40HF



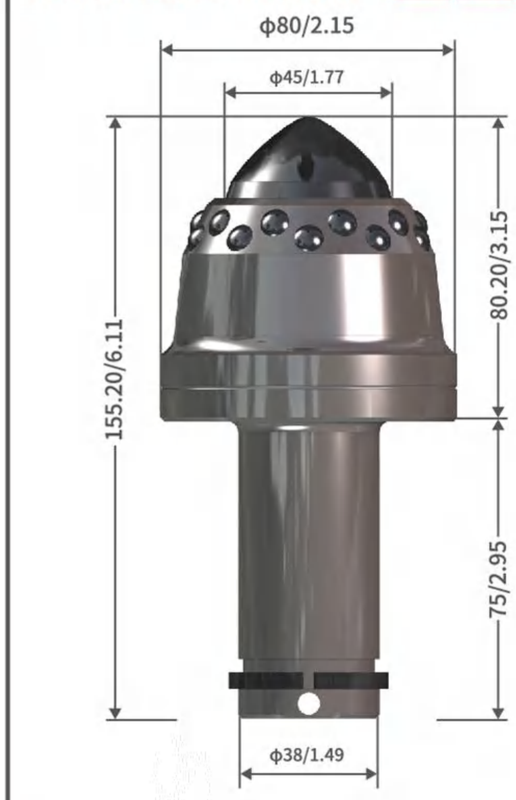


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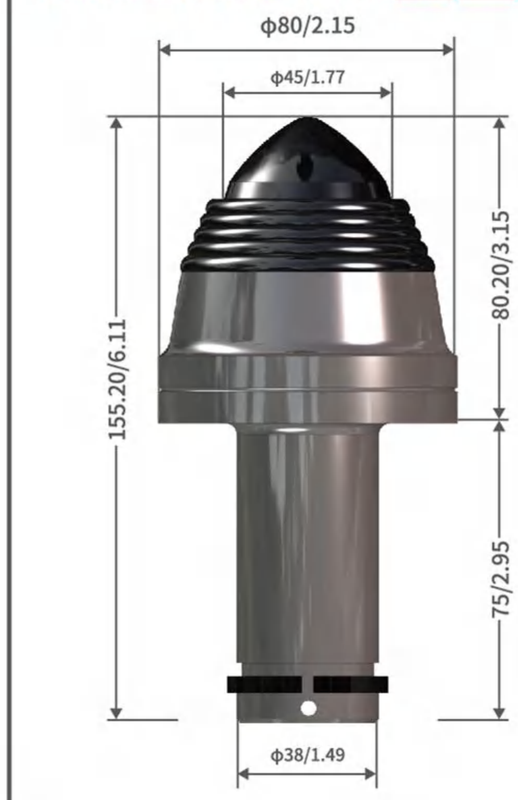
S135-80-38-45A



S135-80-38-45K

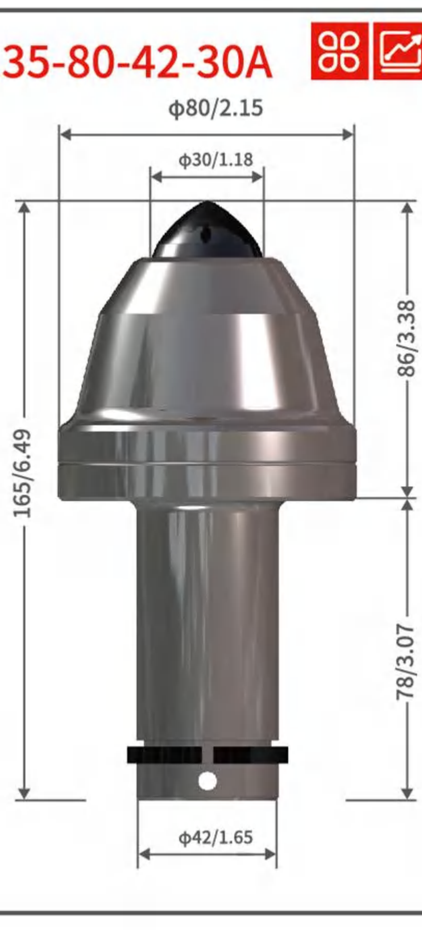


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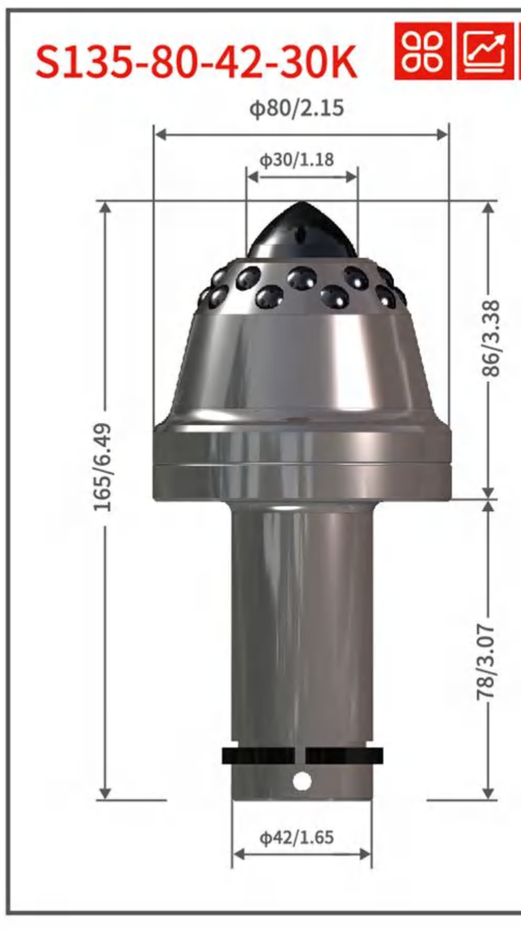


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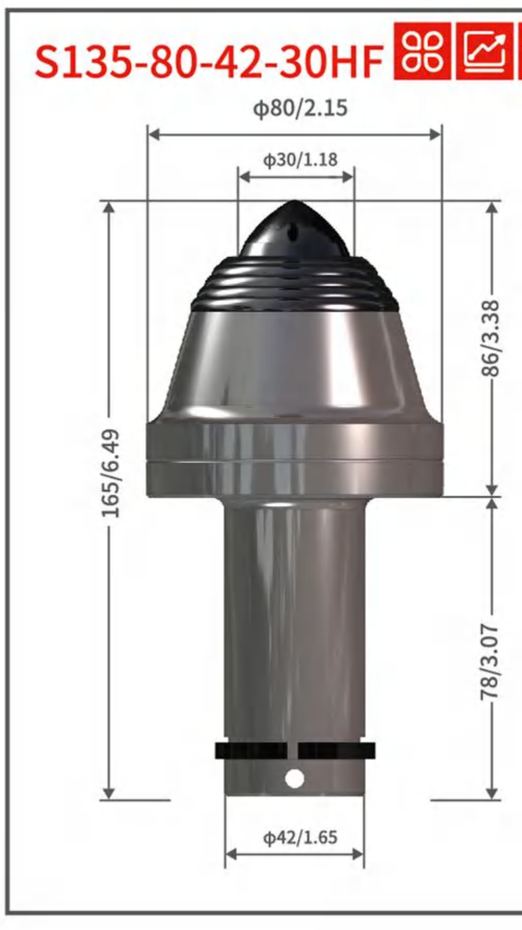
S135-80-42-30A



S135-80-42-30K



S135-80-42-30HF

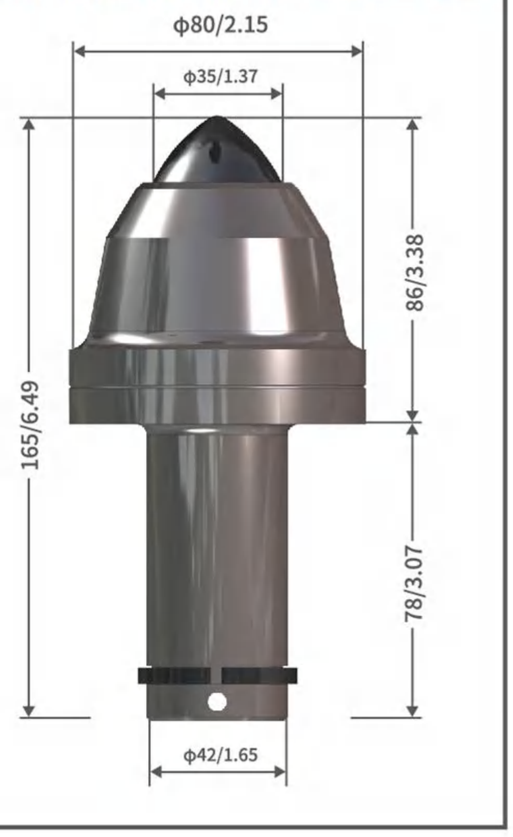




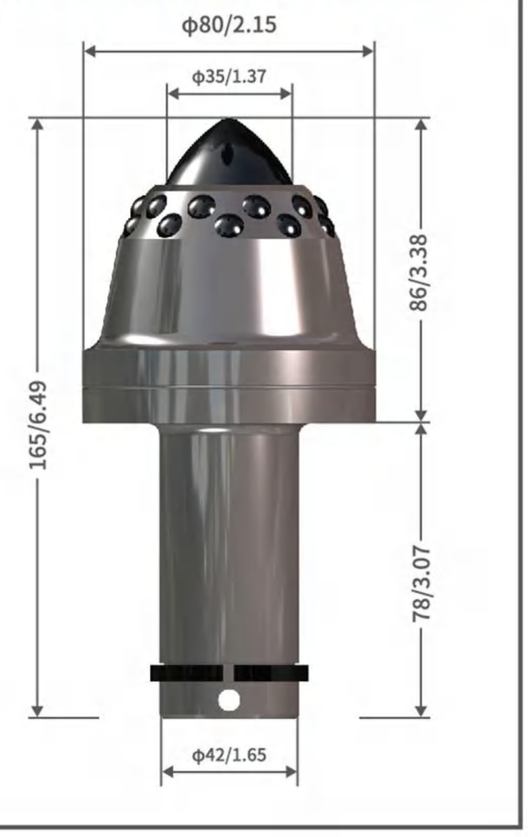
ROADHEADER SERIES

S135系列 135-80-42-35A/K/HF

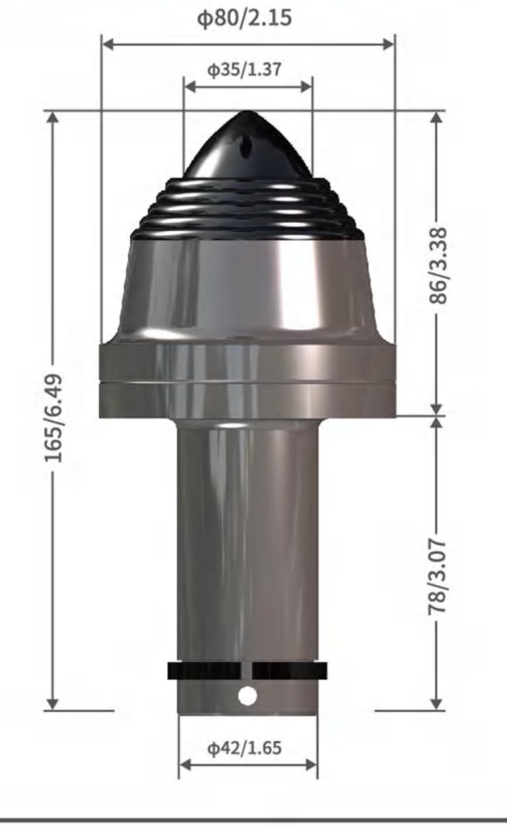
S135-80-42-35A



S135-80-42-35K



S135-80-42-35HF

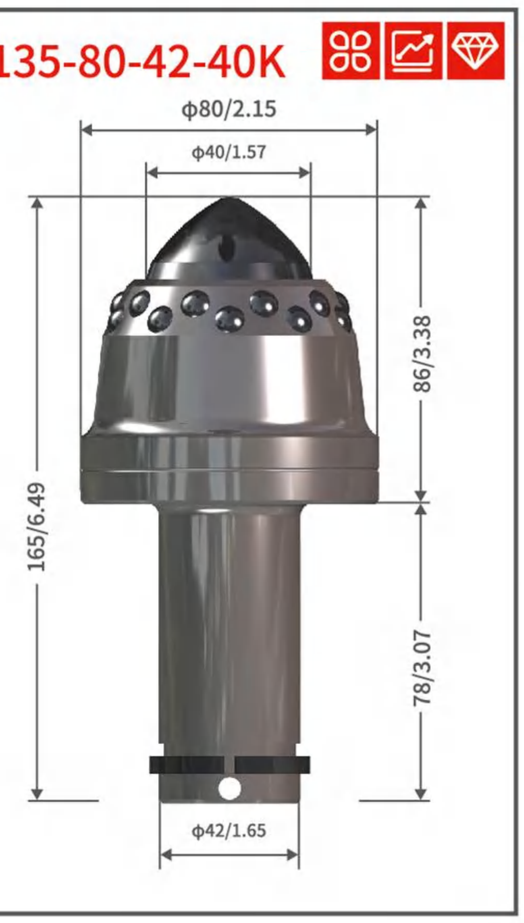


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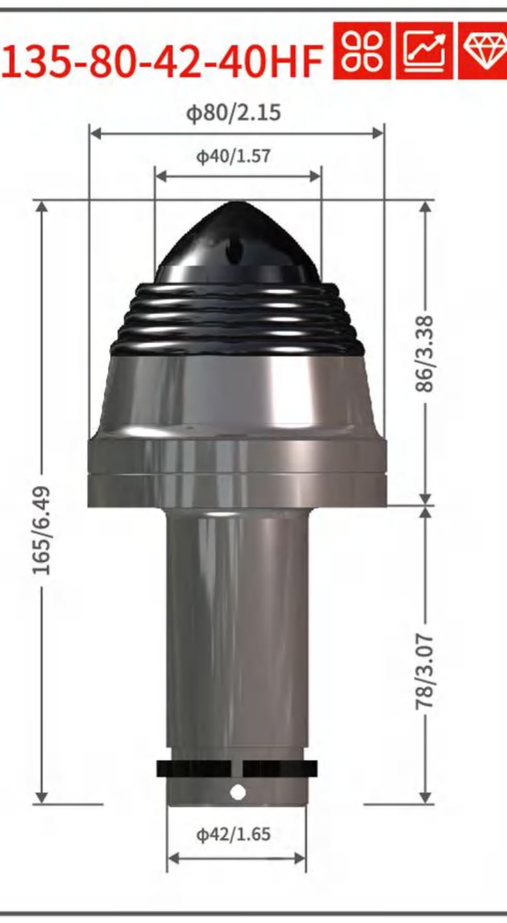
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S135-80-42-40K



S135-80-42-40HF

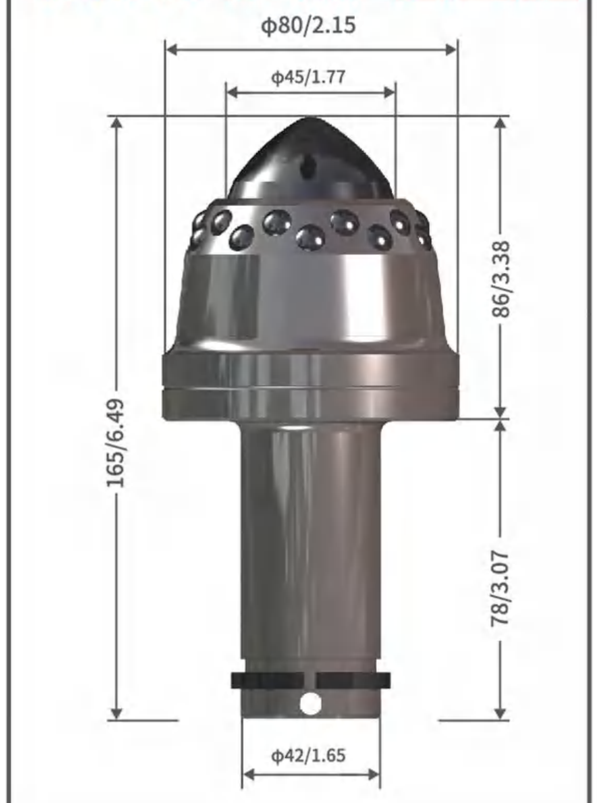


S135系列 135-80-42-45A/K/HF

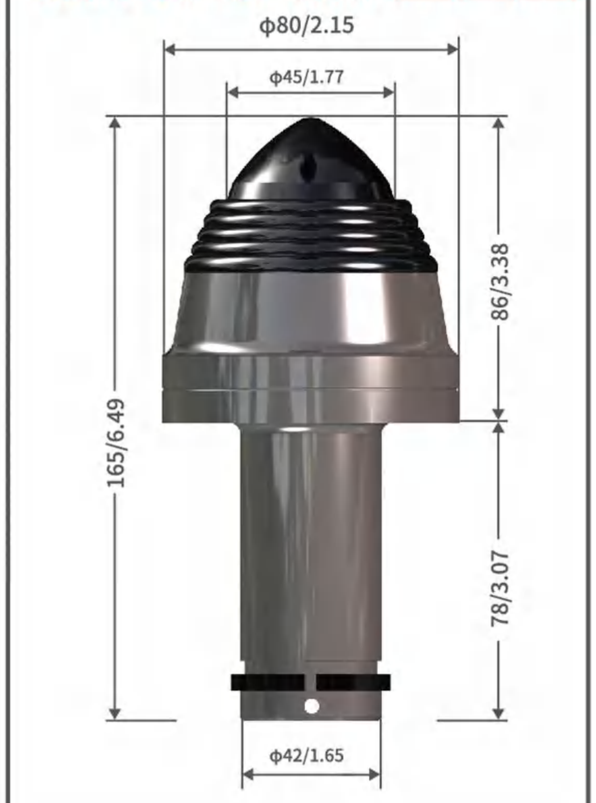
S135-80-42-45A



S135-80-42-45K



S135-80-42-45HF





THE BASE OF SERIES



U8O-齿套

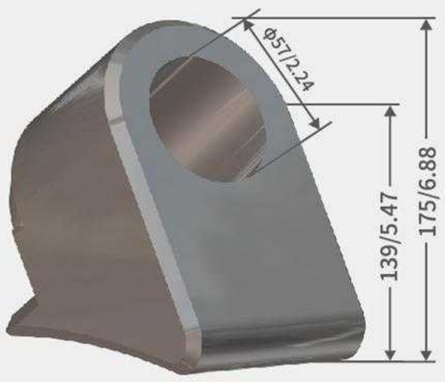


U90齿套

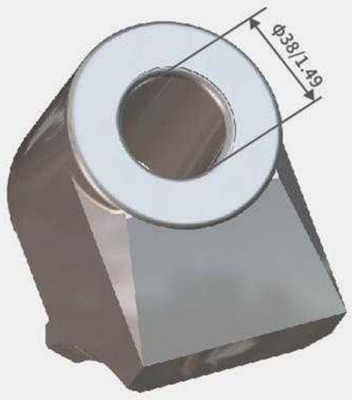


U170齿套

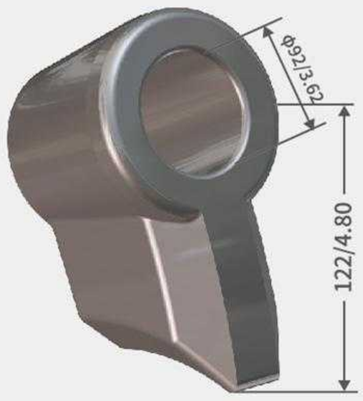
THE BASE OF SERIES



170齿座



135齿座



U82齿座



U92

THE BASE OF SERIES
底座系列

截齿齿座是属于安装在采煤机滚筒、掘进机螺旋炮头、旋挖钻头上的重要机械零部件。齿座（齿套）钢体选用锻造工艺，经过热处理的合金工具钢，具备较高强度和高韧性，针对各种硬岩极硬岩层截割时，大大缩短了设备停机的时间，在施工中发挥了重要的作用。

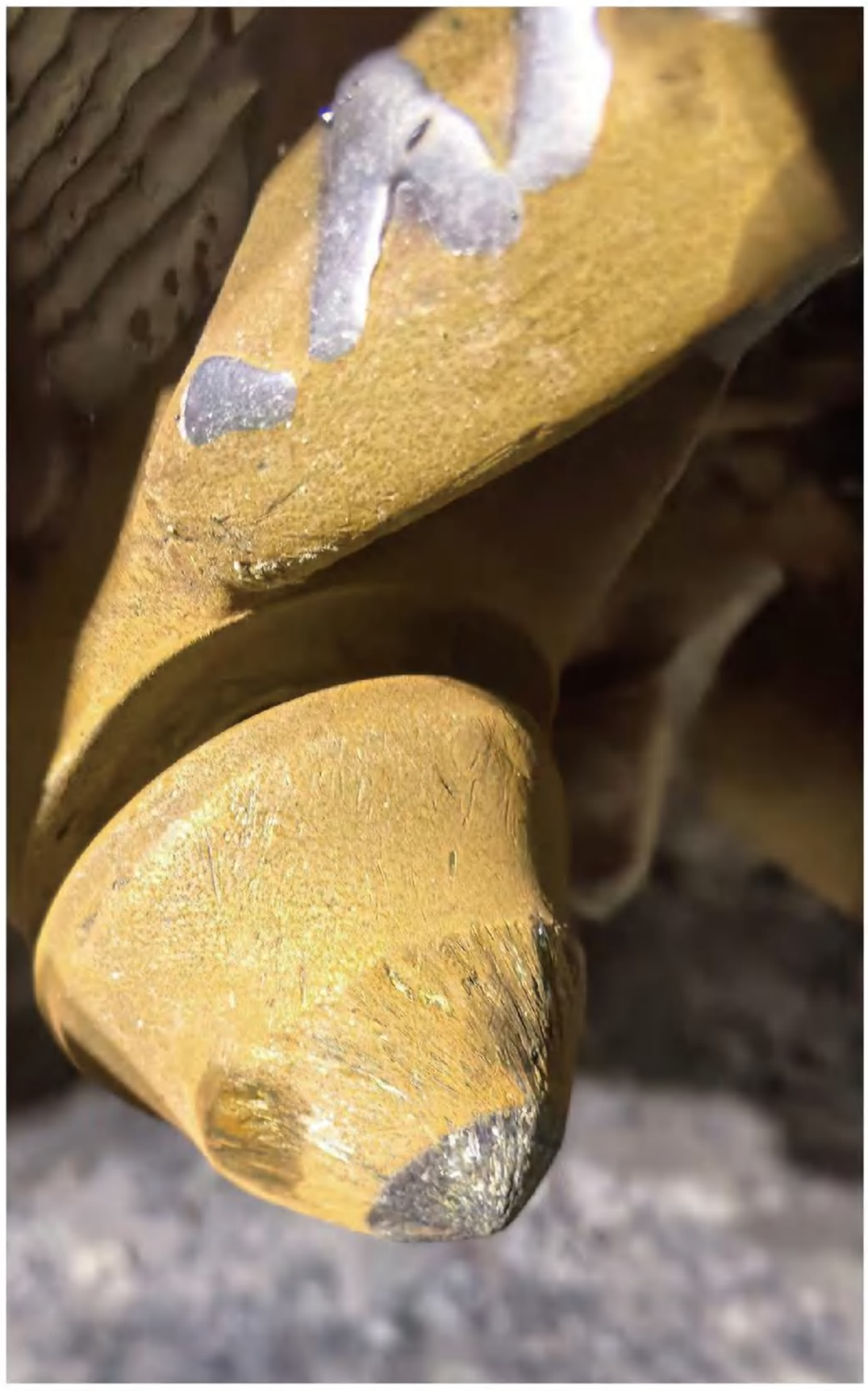
The cutting pick holder of a roadheader is an important mechanical part installed on the shearer drum, the spiral cutter head of a roadheader, and the rotary drilling bit. The steel body of the pick holder (tooth sleeve) is made of alloy tool steel through forging process and heat treatment. It has high strength and high toughness. When cutting various hard and extremely hard rock strata, it greatly shortens the downtime of equipment and plays an important role in construction.

CASE OF ROADHEADER PICKS

掘进机截齿案例











CASE OF ROADHEADER PICKS

掘进机截齿案例











ACCESSORIES FOR PILE DRIVING MACHINERY
桩工机械配件

- MLMT截齿
  MLMT cutting pick
- MLMT牙轮
  MLMT cone
- MLMT工法钻具
  Drilling tools for MLMT construction method
- 工法下圈
  Lower ring for construction method
- 双底嵌岩捞沙斗
  Double-bottom rock-socketed sand-grabbing bucket
- 岩石数据库
  Rock database



MILLING MACHINE PICKSERIES

铣刨机截齿系列

MILLING MACHINE PICK SERIES

铣刨机截齿系列

铣刨机截齿的功能是对各种路面材料（如沥青混凝土、水泥混凝土等）进行切削。当铣刨机工作时，截齿以高速旋转或移动的方式与路面接触，利用其尖锐的头部和合适的刃角切入路面材料。例如，在道路翻新工程中，铣刨截齿能够像一把把小刀具一样，将旧路面的表层材料一层一层地削下来，其切削深度可以根据工程要求进行调节，一般可以达到几厘米到几十厘米不等。

The function is to cut various pavement materials (such as asphalt concrete, cement concrete, etc.). When the milling machine is working, the picks come into contact with the pavement in a high-speed rotating or moving manner, using their sharp heads and appropriate cutting angles to cut into the pavement materials. For example, in road renovation projects, the milling picks can shave off the surface materials of the old pavement layer by layer like small knives. The cutting depth can be adjusted according to the project requirements, and generally it can range from several centimeters to dozens of centimeters.

MILLING MACHINE PICKSERIES

铣刨齿系列 M4-16 M5-17 M6-19

M4-16



M5-17



M6-19



铣刨齿系列 M7-20 M8-22 MS-13

M7-20



M8-22



MS-13





SERIES OF PICKS FOR MILLING MACHINES

铣挖机截齿系列

SERIES OF PICKS FOR MILLING MACHINES

铣挖机截齿系列

铣挖机截齿主要作用在道路施工和维护工程中，铣挖机截齿可以对路面材料进行切削。对于沥青路面，截齿能够精确地将损坏的路面表层切削掉，以便进行重新铺设。其切削深度可以通过铣挖机的控制系统进行精确调节，例如在进行路面病害处理时，如车辙修复，截齿可以将车辙部分的沥青路面切削到合适的深度，一般精度可以控制在毫米级别。对于水泥混凝土路面，铣挖机截齿同样能够有效地切削，将需要维修或改造的路面部分去除。

The picks of the milling excavator mainly play a role in road construction and maintenance projects. They can cut the road surface materials. For asphalt pavements, the picks can accurately cut off the damaged surface layer of the road for re - paving. The cutting depth can be precisely adjusted through the control system of the milling excavator. For example, when dealing with road surface diseases, such as rut repair, the picks can cut the asphalt pavement in the rut part to an appropriate depth, and the general precision can be controlled at the millimeter level. For cement - concrete pavements, the picks of the milling excavator can also effectively cut and remove the parts of the road surface that need to be repaired or reconstructed.

PAGE
COUNT /23

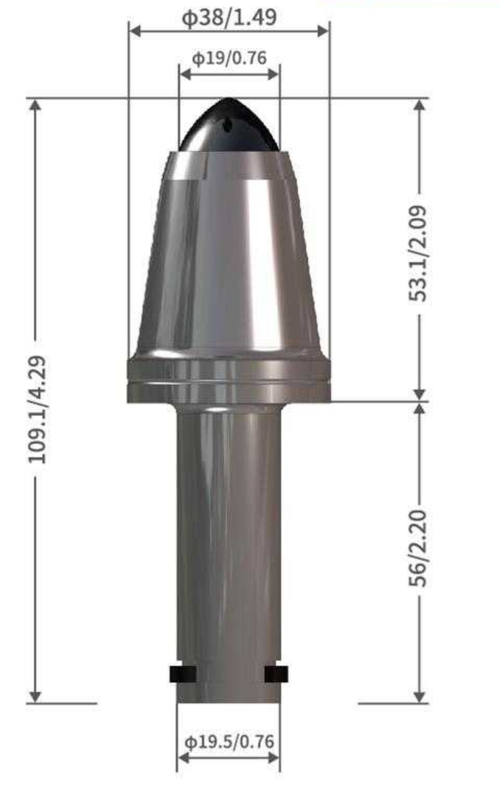
SERIES OF PICKS FOR MILLING MACHINES

铣挖齿系列 2038-16A/19A/22A

MX2038-16A



MX2038-19A

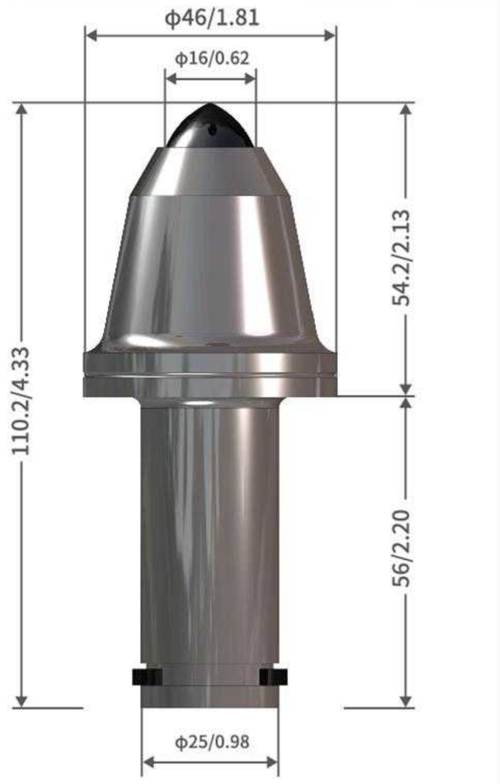


MX2038-22A

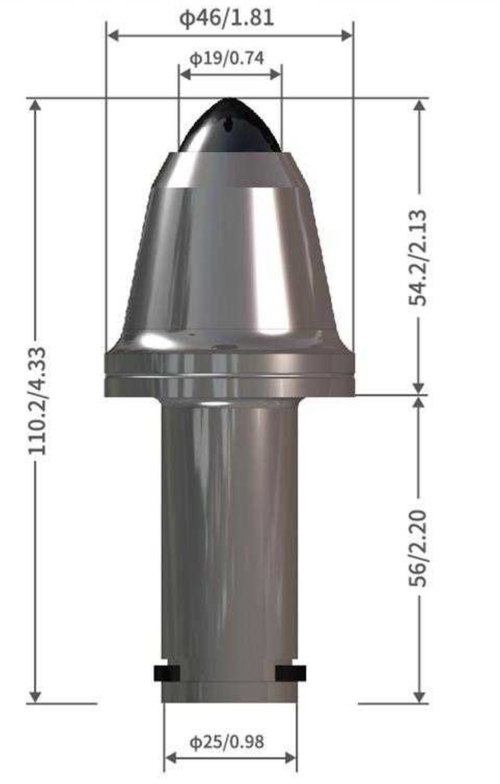


铣挖齿系列 2545-16A/19A/22A

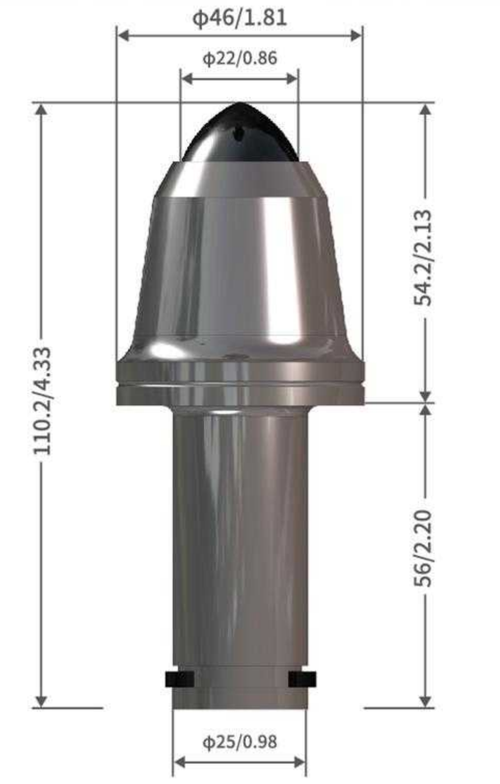
MX2545-16A



MX2545-19A



MX2545-22A



MLMT CUTTING PICK

MLMT旋挖截齿



1:硬质合金
Cemented carbide

2:钎焊片
Brazing sheet

3:硬质合金豆
Cemented carbide bean

4:合金结构钢齿体
Alloy structural steel tooth body

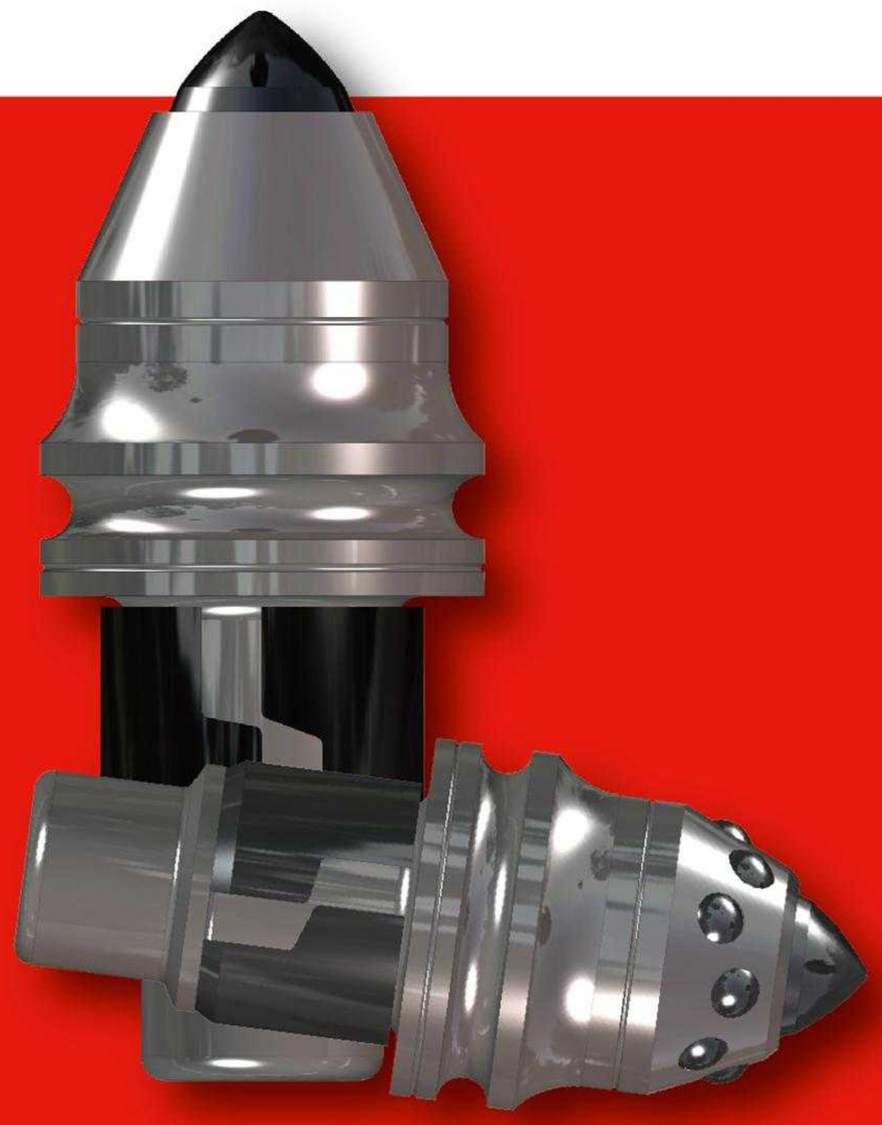
5:卡簧
Snap ring

MLMT ROTARY DIGGING PICK

MLMT旋挖截齿

旋挖截齿是旋挖钻机施工中非常重要的破岩工具，主要应用在各种桥梁、房建、水利等领域的地基基础。打桩过程中，对各种岩石的钻进与取芯。根据地下岩石的复杂情况，对截齿的品质要求非常的高。麦林迈特截齿可以提升入岩速度与施工效率，并且降低损耗。

Rotary cutting picks are very important rock-breaking tools in the construction of rotary drilling rigs. They are mainly used in the foundation of various fields such as bridges, building construction, and water conservancy. During the piling process, for drilling and coring various rocks, according to the complex situation of underground rocks, the quality requirements for cutting picks are very high. Merlin Met cutting picks can increase the rock-entry speed and construction efficiency and reduce wear and tear.



PAGE
COUNT /25

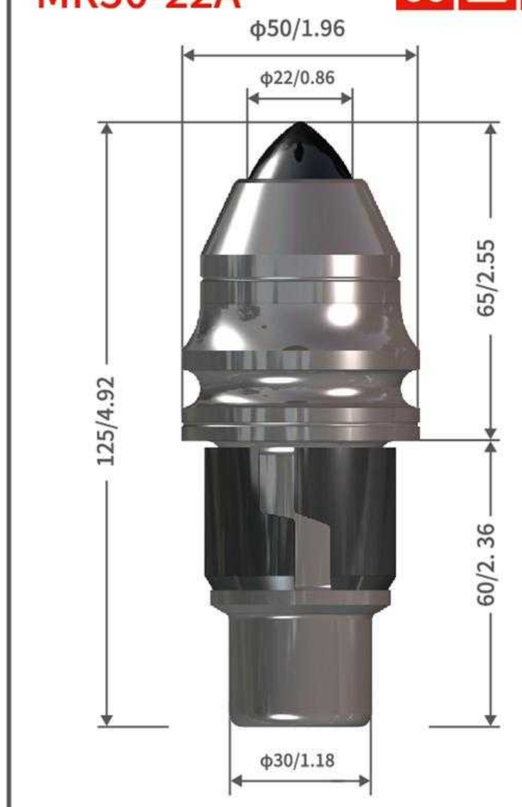
MLMT CUTTING PICK

MR50系列 MR50-19A-22A

MR50-19A



MR50-22A

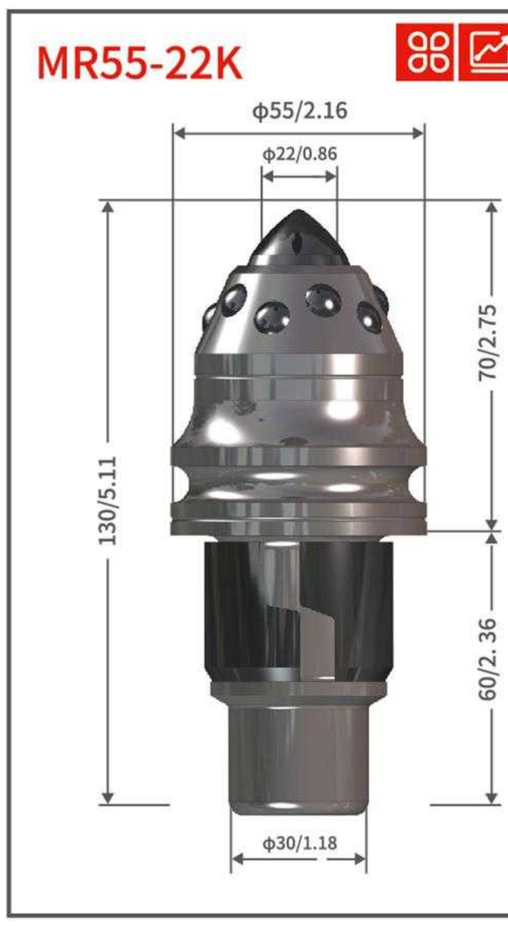


MR50系列 MR55-22A/K

MR55-22A



MR55-22K





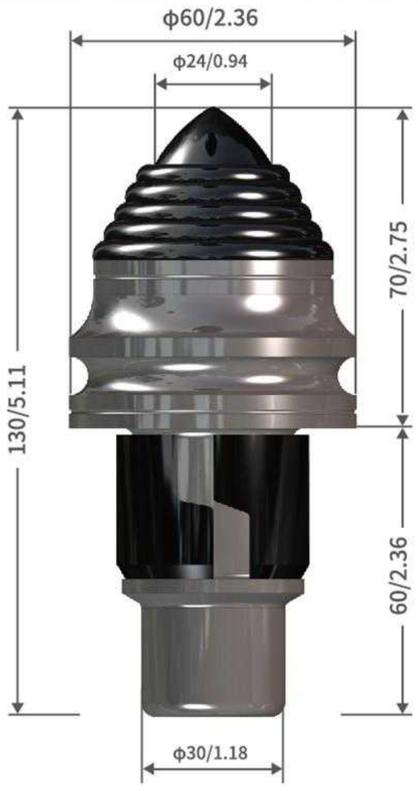
MLMT CUTTING PICK

MR60系列 MR60-24A/HF

MR60-24A

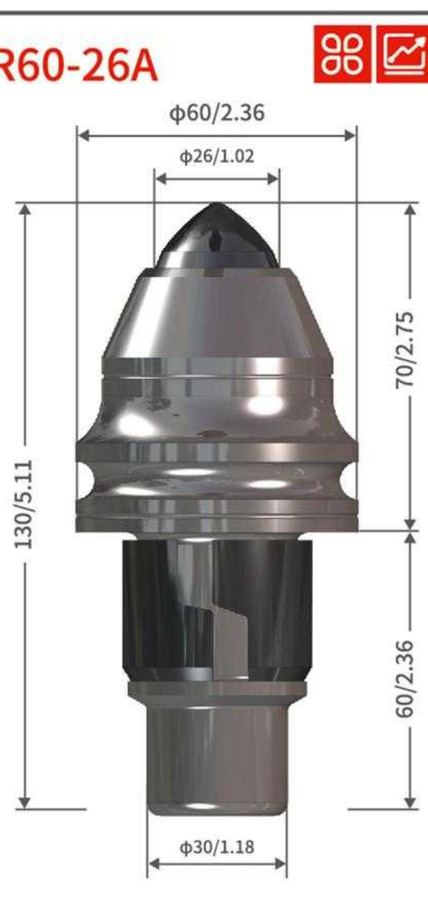


MR60-24HF

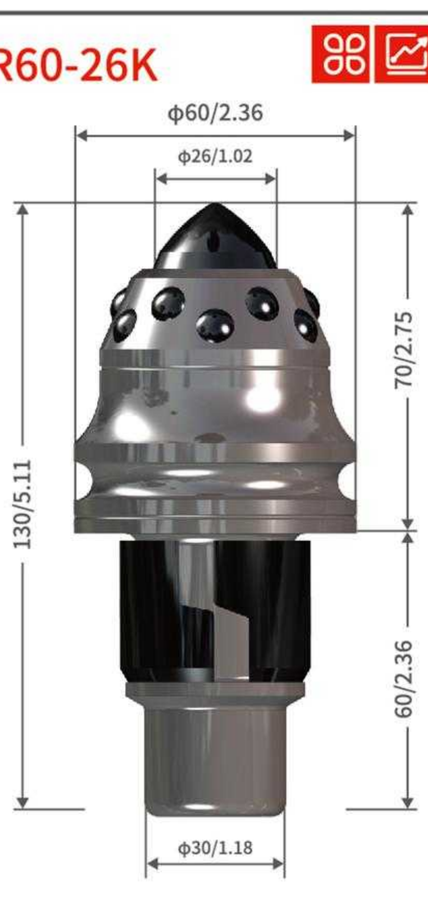


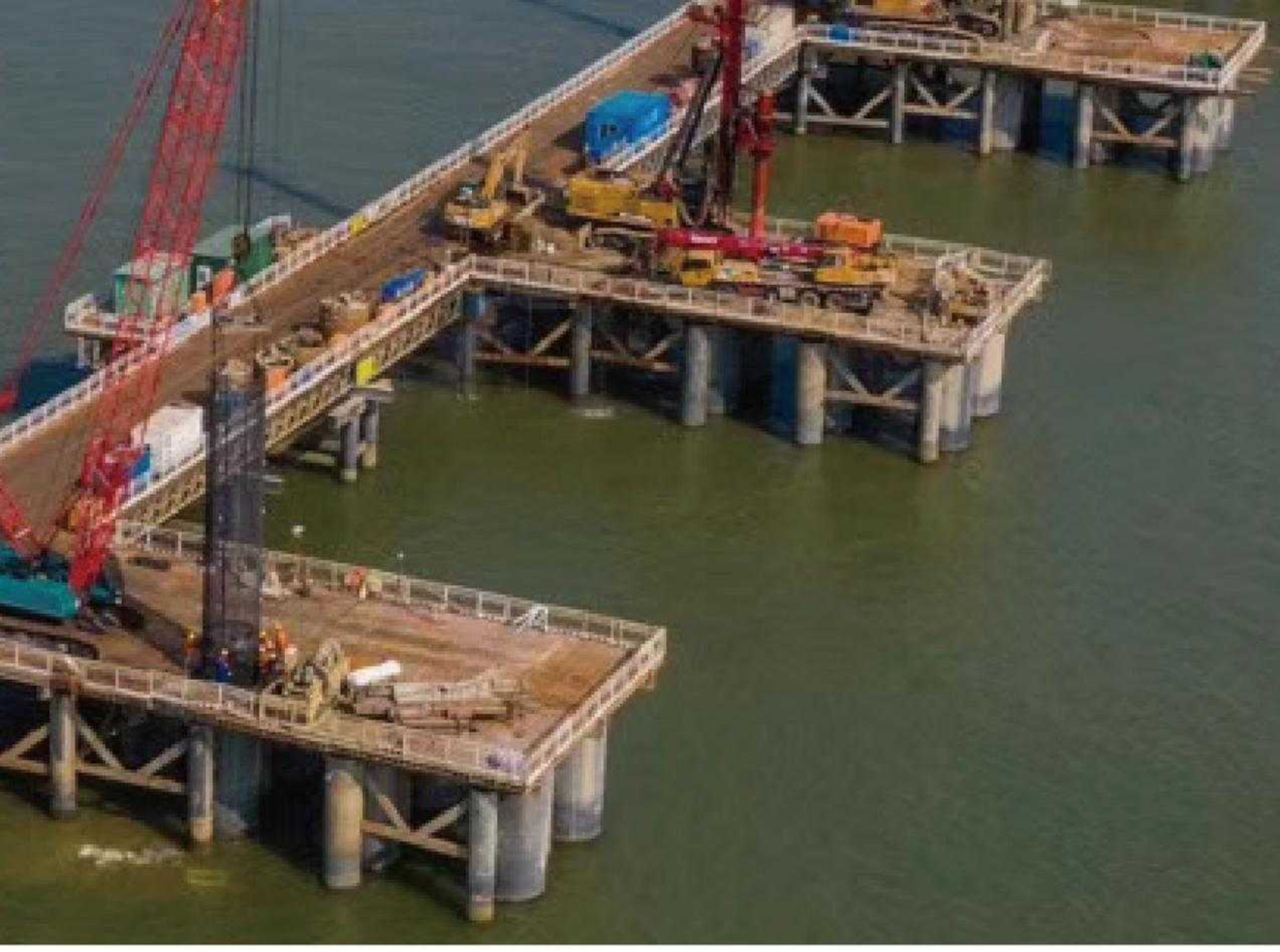
MR60系列 MR60-26A/K

MR60-26A



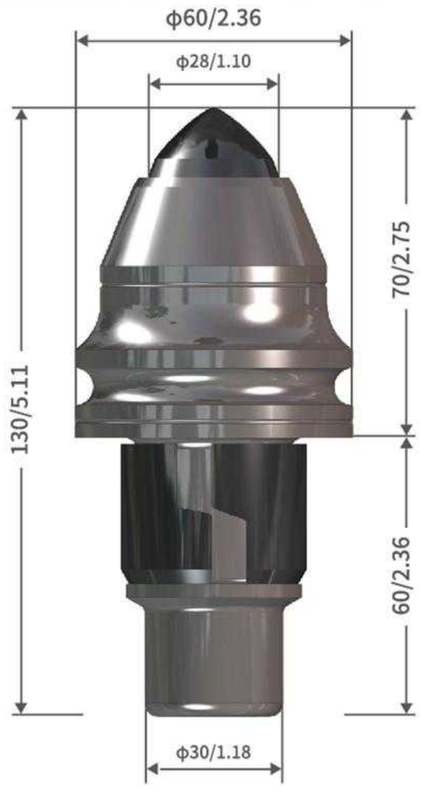
MR60-26K





MR60系列 MR60-28A/K

MR60-28A

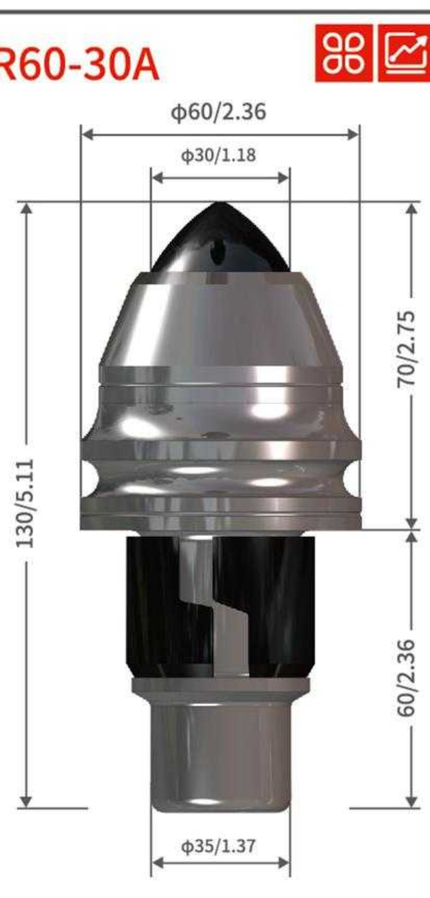


MR60-28K

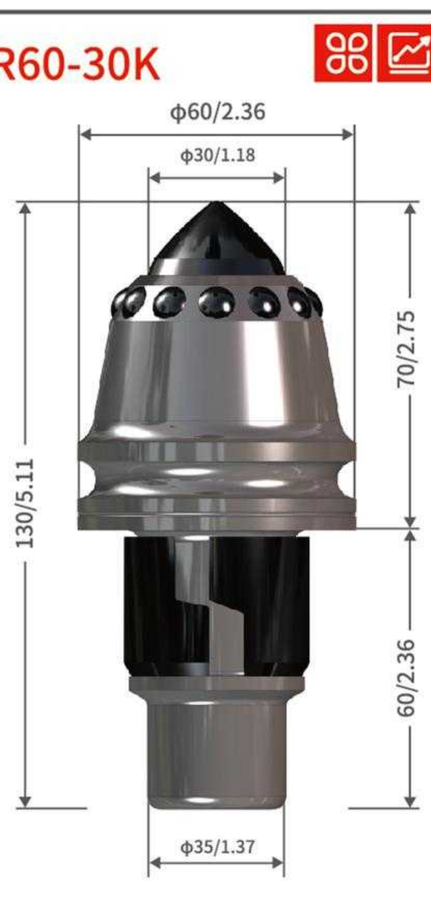


MR60系列 MR60-30A/K

MR60-30A



MR60-30K





MLMT CUTTING PICK

MR60系列 MR60-32A/K

MR60-32A

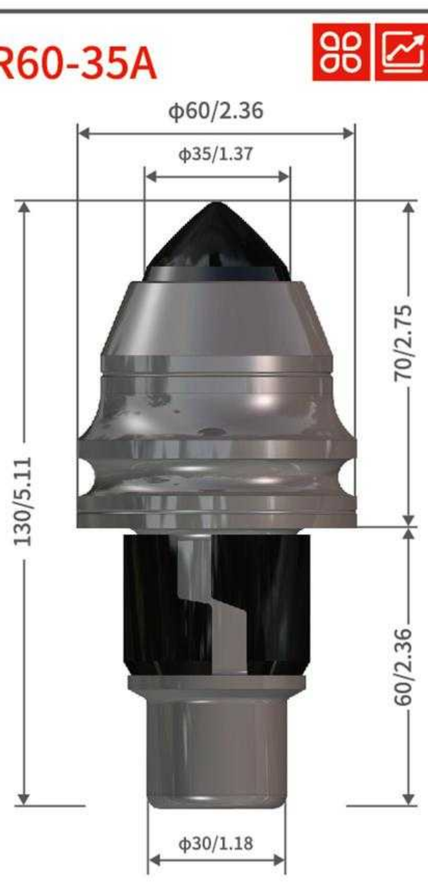


MR60-32K

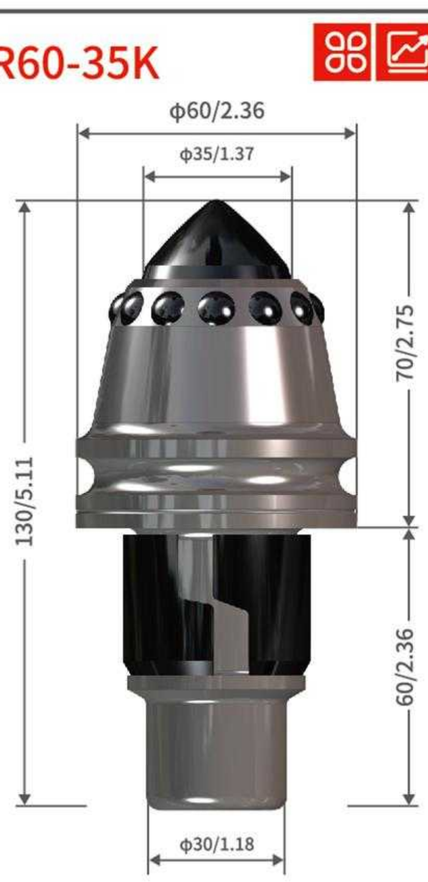


MR60系列 MR60-35A/K

MR60-35A



MR60-35K





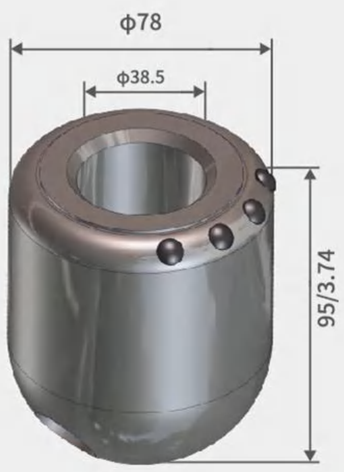
截齿齿座 PICKER SEAT



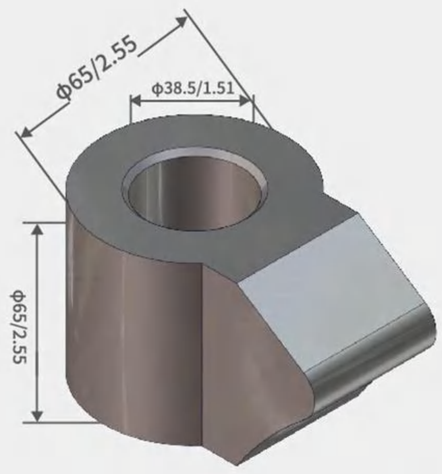
大圆座72-95



大圆座78-95



合金大圆座78-95



方座



PROJECT ENGINEERING CASE

旋挖截齿案例











PROJECT ENGINEERING CASE

旋挖截齿案例





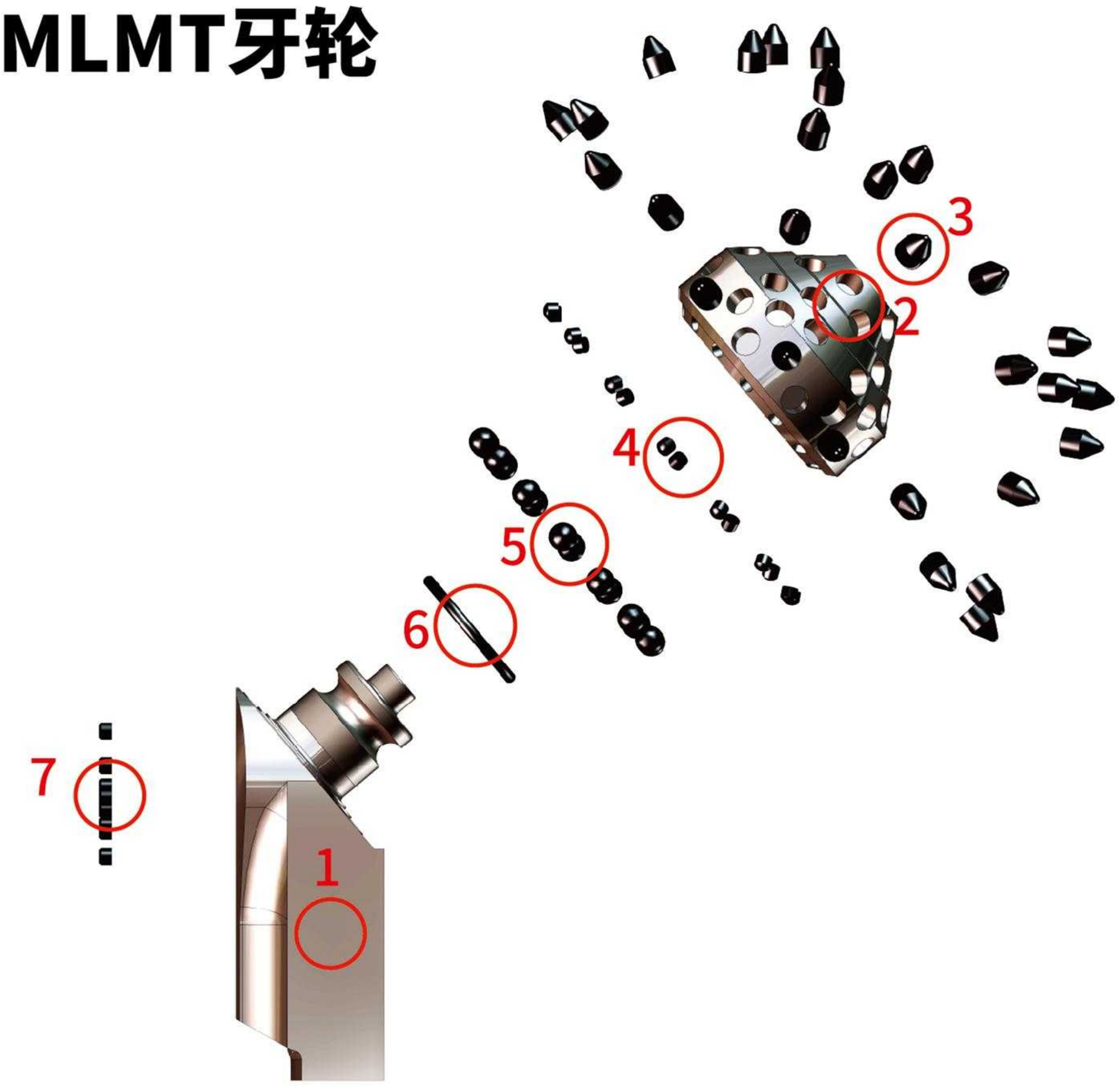






MLMT ROCK ROLLER BIT

MLMT牙轮



1:牙轮本体
Roller body

2:牙掌轮体
Tooth palm wheel body

3:硬质合金
Cemented carbide

4:轮体保径合金
Gauge protection alloy for wheel body

5:轴承滚珠
Bearing ball

6:密封圈
Sealing ring

7:牙轮背部合金
Alloy on the back of the cone

ROTARY DIGGING
MLMT牙轮

旋挖专用牙轮掌片，主要借鉴石油钻井技术改进而来，随着国内对施工建筑要求越来越高，旋挖钻机在施工中为了更好地对极硬岩石的钻进，采用牙轮进行施工。牙轮钻头在破碎岩石过程中受顶部钻压、自身动载荷以及孔底接触岩石的随机冲击碰撞作用，使牙齿与岩石交替压入的破岩方式，对比截齿筒钻针对完整岩石的钻进，牙轮筒钻施工效率更高，损耗更低。

The special cone pad for rotary drilling is mainly improved by referring to petroleum drilling technology. As the domestic construction requirements become higher and higher, in order to better drill extremely hard rocks during the construction of rotary drilling rigs, cone bits are used for construction. During the process of crushing rocks, the cone bit is affected by the top drilling pressure, its own dynamic load and the random impact and collision of the bottom of the hole contacting the rock, so that the teeth and the rock are alternately pressed in. Compared with the drilling of the full rock by the cutting pick cylinder drill, the cone cylinder drill has higher construction efficiency and lower wear and tear.



PROJECT ENGINEERING CASE

MLMT 牙轮















EXPLODED VIEW OF ROTARY CUTTING PICK

MLMT工法钻具

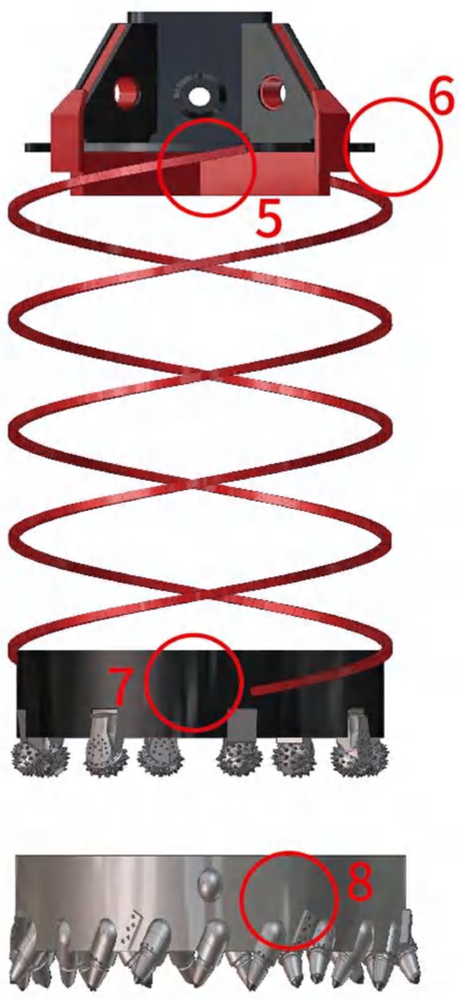
1:链接方头150/200/250
1.Link square head 150/200/250

2:双层耳板/单层耳板
2.Double-layer ear plate / single-layer ear plate

3:筒体厚度20/25/30
3.Cylinder thickness: 20/25/30

4:全护条/间断式护条
4.Full guard strip / intermittent guard strip





5:顶板加强筋
5.Top plate stiffener

6:内镶圆顶板/横梁顶板
6.nlaid circular top plate / top plate of crossbeam

7:牙轮下圈
7.Lower ring of cone

8:常规破岩、中重型破岩、重型破岩
8.Conventional rock breaking, medium-heavy rock breaking, heavy rock breaking

CONSTRUCTION METHOD

MLMT工法钻具

截齿筒钻在旋挖钻机施工过程中使用的频率非常高,尤其是在硬岩、极硬岩地层中发挥重要的作用。取芯筒钻主要分为两种:截齿取芯筒钻、牙轮取芯筒钻,对坚硬岩石进行施工作业。截齿取芯筒钻,主要对破碎岩石、裂隙多的岩石、斜岩溶洞等地层的钻进,有很高的施工效率。匹配不同的截齿与排齿方式,可以为客户提升入岩速度,降低损耗。牙轮筒钻主要针对比较完整的硬岩、极硬岩、少部分裂隙岩石进行施工作业,牙轮钻头工作时切削齿接替接触岩石,破岩扭矩小,切削齿与岩石接触面积小,比压高,易于压入岩石,因而相对减少磨损,施工效率较高。

The cutting pick core barrel is used very frequently in the construction process of rotary drilling rigs, especially playing an important role in hard rock and extremely hard rock formations. There are mainly two types of core barrels: cutting pick core barrel and cone core barrel, which are used for construction in hard rocks. The cutting pick core barrel is mainly used for drilling in formations such as broken rocks, rocks with many fissures, and inclined rock karst caves, and has high construction efficiency. Matching different cutting picks and tooth arrangements can increase the rock-entry speed and reduce wear and tear for customers. The cone barrel is mainly used for construction in relatively complete hard rocks, extremely hard rocks, and a small number of fissured rocks. When the cone bit is working, the cutting teeth take turns contacting the rock. The rock-breaking torque is small, the contact area between the cutting teeth and the rock is small, the specific pressure is high, and it is easy to press into the rock. Therefore, the wear is relatively reduced and the construction

MELINMAI DRILLING TOOLS

MLMT工法钻具











DATA REFERENCE FORM DETAILED TABLE

桩径 pile diameter	厚壁 Wall thickness	截齿筒体外径 Outer diameter of the cutting pick cylinder	方头 square head	截齿数量/排齿方式 Number of arranged teeth / Arrangement method of teeth	牙轮筒体外径 Outer diameter of the cutting pick cylinder	牙轮数量 Number of cones	说明 Instruction
∅600	20+40	500	200	麦林迈特工法排齿	520	4	根据实际工况排齿可以解决入岩速度与损耗等问题 According to the actual working conditions, arranging teeth can solve problems such as rock ent ry speed and wear and tear.
∅700	20+40	600	200	麦林迈特工法排齿	620	6	
∅800	20+40	700	200	麦林迈特工法排齿	720	6	
∅900	20+40	800	200	麦林迈特工法排齿	820	6	
∅1000	20+40 20+50	900	200/250	麦林迈特工法排齿	920	8	
∅1100	20+40 20+50	1000	200/250	麦林迈特工法排齿	1020	8	
∅1200	20+40 20+50	1100	200/250	麦林迈特工法排齿	1120	10	
∅1250	20+40 20+50	1150	200/250	麦林迈特工法排齿	1170	10	
∅1400	20+40 20+50	1300	200/250	麦林迈特工法排齿	1320	12	
∅1500	20+40 20+50	1400	200/250	麦林迈特工法排齿	1420	14	根据实际工况排齿可以解决入岩速度与损耗等问题 According to the actual working conditions, arranging teeth can solve problems such as rock ent ry speed and wear and tear.
∅1600	20+40 20+50	1500	200/250	麦林迈特工法排齿	1520	14	
∅1800	20+40 20+50	1700	200/250	麦林迈特工法排齿	1720	16	
∅2000	20+40 20+50	1900	200/250	麦林迈特工法排齿	1920	16	
∅2200	20+40 20+50	2100	200/250	麦林迈特工法排齿	2120	18	
∅2500	20+40 20+50	2400	200/250	麦林迈特工法排齿	2420	20	
∅2800	20+40 20+50	2700	200/250	麦林迈特工法排齿	2720	22	
∅3000	20+40 20+50	2900	250	麦林迈特工法排齿	2920	24	

EXPLODED VIEW OF ROTARY CUTTING PICK

工法排齿/快速破岩下圈



■ 钢板卷圆/锻打下圈推荐
厚度40mm/50mm
Steel plate coil rounding/forged lower ring
Recommended thickness: 40mm/50mm

■ 截齿筒钻专用下圈
Special lower ring for cutting pick cylinder drill.

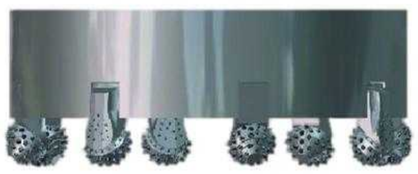


■ 齿座推荐型号
68-95，72-95，78-95
Recommended models of tooth holders:
68-95, 72-95, 78-95



■ 截齿根据客户需求匹配
The cutting picks are matched according to customer needs

■ 牙轮筒钻专用下圈
推荐厚度40mm
Recommended thickness of the special lower ring for cone bit cylinder drill is 40mm



■ MLMT牙轮
MLMT cone bit

ROTARY DIGGING
工法下圈

为了帮助客户解决施工中所遇到的:筒钻入岩速度慢,截齿偏磨严重,截齿角度偏差过大,截齿损耗过高、钻机振动力过大等一系列问题,我们推出工法系列筒钻下圈。在每次设计生产制造下圈的同时,有工法服务工程师详细了解客户在施工中所遇到的问题,收集工地详细的施工数据,然后交由麦林迈特工法服务团队,进行详细的分析,并且出具可行性解决方案。

In order to help customers solve a series of problems encountered in construction, such as slow rock-entry speed of core barrels, serious eccentric wear of cutting picks, excessive deviation of cutting pick angles, excessive wear and tear of cutting picks, and excessive vibration force of drilling rigs, we launch the lower ring of the construction method series core barrel. While designing, producing and manufacturing the lower ring each time, the construction method service engineer will understand in detail the problems encountered by the customer during construction, collect detailed construction data on the construction site, and then hand it over to the Merlin Met construction method service team for detailed analysis and issue a feasible solution.

BARREL DRILL STRUCTURE INTRODUCTION

工法下圈

麦林迈特工法系列筒钻以及筒钻下圈，广泛应用在各个厂家旋挖钻机设备上，面对各种硬岩、极硬岩石为客户节约了施工成本，降低了损耗，提升了入岩速度。通过工法服务团队设计的筒钻与筒钻下圈主要解决以下几个在施工中遇到的几个问题：

The cylinder drill and lower ring of the MLMT construction method series are widely used on the rotary drilling rig equipment of various manufacturers. Facing various hard rocks and extremely hard rocks, they have saved construction costs for customers, reduced losses, and increased the rock-entry speed. The cylinder drill and the lower ring of the cylinder drill designed by the construction method service team mainly solve the following problems encountered in construction:

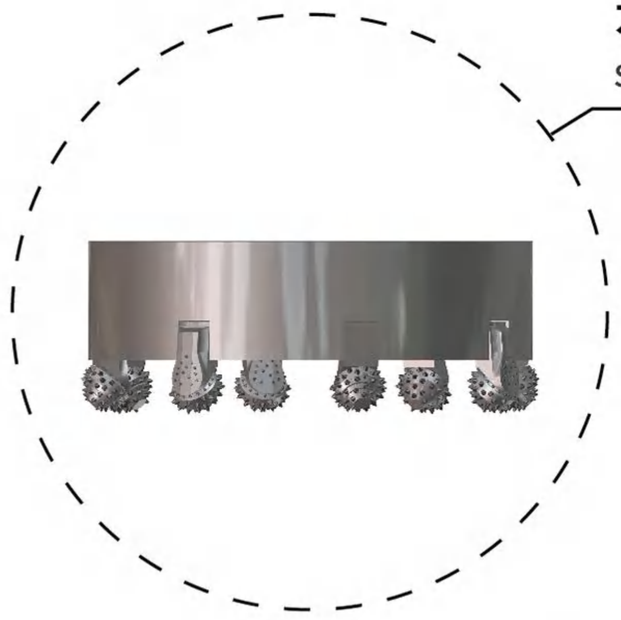
- **截齿偏磨严重** The cutting picks are severely unevenly worn
- **入岩速度慢** The speed of entering the rock is slow
- **截齿角度矫正** Correction of cutting pick angle
- **钻机震动异常** The drilling rig vibrates abnormally
- **齿座异常开裂** Abnormal cracking of tooth holder
- **截齿损耗过大等** Excessive wear and tear of cutting picks
- **齿座焊缝撕裂** The weld seam of the tooth holder is torn
- **筒壁齿座磨损过快** The tooth holders on the cylinder wall wear out too quickly

DATA REFERENCE FORM DETAILED TABLE

下圈规格 Specification of lower ring	厚壁 Wall thickness	高度 Height	截齿筒体外径 Outer diameter of the cutting pick cylinder	齿间距 Tooth spacing	截齿数量/排齿方式 Number of arranged teeth / Arrangement method of teeth	牙轮筒体外径 External diameter of cone cylinder	牙轮数量 Number of cones	说明 Instruction
∅600	40	200	500	580	麦林迈特工法排齿	520	4	根据实际工况排齿可以解决入岩速度与损耗等问题 According to the actual working conditions, arranging teeth can solve problems such as rock ent ry speed and wear and tear.
∅700	40	200	600	680	麦林迈特工法排齿	620	6	
∅800	40	200	700	780	麦林迈特工法排齿	720	6	
∅900	40	200	800	880	麦林迈特工法排齿	820	6	
∅1000	40/50	200/250	900	980	麦林迈特工法排齿	920	8	
∅1100	40/50	200/250	1000	1080	麦林迈特工法排齿	1020	8	
∅1200	40/50	200/250	1100	1180	麦林迈特工法排齿	1120	10	
∅1250	40/50	200/250	1150	1230	麦林迈特工法排齿	1170	10	
∅1400	40/50	200/250/300	1300	1380	麦林迈特工法排齿	1320	12	
∅1500	40/50	200/250/300	1400	1480	麦林迈特工法排齿	1420	14	根据实际工况排齿可以解决入岩速度与损耗等问题 According to the actual working conditions, arranging teeth can solve problems such as rock ent ry speed and wear and tear.
∅1600	40/50	200/250/300	1500	1580	麦林迈特工法排齿	1520	14	
∅1800	40/50	200/250/300	1700	1680	麦林迈特工法排齿	1720	16	
∅2000	40/50	200/250/300	1900	1880	麦林迈特工法排齿	1920	16	
∅2200	40/50	200/250/300	2100	2080	麦林迈特工法排齿	2120	18	
∅2500	40/50	250/300	2400	2380	麦林迈特工法排齿	2420	20	
∅2800	40/50	250/300	2700	2680	麦林迈特工法排齿	2720	22	
∅3000	40/50	300	2900	2980	麦林迈特工法排齿	2920	24	

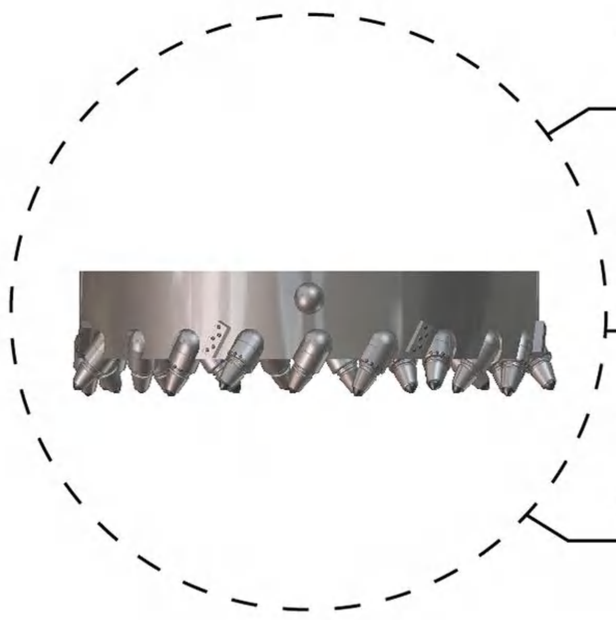
DRILL DOWN RING CLASSIFICATION

筒钻下圈分类



花岗岩专用下圈
Special lower ring for granite

牙轮筒钻下圈
Lower ring of cone bit cylinder drill



常规型破岩筒钻下圈
Lower ring of conventional rock-brea king cylinder drill

中重型破岩筒钻下圈
Lower ring of medium and heavy rock-breaking cylinder drill

重型破岩筒钻下圈
Lower ring of heavy rock-breaking cylinder drill

破岩截齿筒钻下圈
Lower ring of rock-breaking cutting pick cylinder drill

DATA REFERENCE FORM DETAILED TABLE

分类 Classification	规格型号 Specification and model	厚度+高度 Thickness height	钻机扭矩 Drilling rig torque	匹配截齿型号 Match the model of cutting picks	排齿 tooth row	适应地层 Adapt to stratum
常规型破岩筒钻下圈 Lower ring of conventionalrock-breaking cylinder drill	600-1500	40x150 40x200	150-280	MR55-19A/K MR55-22A/K MR55-25A/K	工法排齿 Construction method row of teeth	适用于强风化-中风化50兆帕，灰岩、硬砂岩、碎石、角砾岩等截齿损耗与入岩速度可以通过工法排齿进行调节 Suitable for strongly weathered to moderately weathered strata with a compressive strength of 50 MPa, such as limestone, hard sandstone, gravel, and breccia. The wear and tear of cutting picks and the rock penetration speed can be adjusted by the construction method row of teeth
中重型破岩筒钻下圈 Lower ring of medium and heavy rock-breaking cylinder drill	20+40	700	280-360	MR55-22A/K MR55-25A/K MR60-26A/K	工法排齿 Construction method row of teeth	适用于中风化-微风化80兆帕以内的裂隙岩石，主要针对破碎花岗岩、破碎火山岩、岩浆岩、玄武岩、破碎硅质岩、白云岩、石英砂岩等等截齿损耗与入岩速度可以通过工法排齿进行调节 Suitable for moderately weathered to slightly weathered fissured rocks within 80 MPa. Mainly for broken granite, broken volcanic rock, magmatic rock, basalt, broken siliceous rock, dolomite, quartz sandstone, etc. The wear and tear of cutting picks and the rock penetration speed can be adjusted by the construction method row of teeth
重型破岩筒钻下圈 Lower ring of heavy rock-breaking cylinder drill	20+40	600	400 550 1200	MR60-26A/K MR60-28A/K MR60-30A/K	工法排齿 Construction method row of teeth	适用于微风化100兆帕以内的裂隙岩石，主要针对裂隙花岗岩、裂隙火山岩、岩浆岩裂隙玄武岩、破碎硅质岩、石英砂岩等等,截齿损耗与入岩速度可以通过工法排齿进行调节 Suitable for slightly weathered fissured rocks within 100 MPa. Mainly for fissured granite, fissured volcanic rock, magmatic rock, fissured basalt, broken siliceous rock, quartz sandstone, etc. The wear and tear of cutting picks and the rock penetration speed can be adjusted by the construction method row of teeth
牙轮筒钻及下圈 Lower ring of cone bit cylinder drill	20+40	800	150 550 1200	MLMT牙轮	精准焊接 Precise welding	适用于微风化80-200兆帕左右的完整花岗岩石，少部分裂隙花岗岩、花岗岩孤石、以及其他比较完整的坚硬岩石 Suitable for slightly weathered complete granite with a compressive strength of about 80-200 MPa, a small amount of fissured granite, granite boulders, and other relatively complete hard rocks

PROJECT ENGINEERING CASE

案例











BARREL DRILL STRUCTURE INTRODUCTION

双底嵌岩捞沙斗





1:链接方头/顶板150/200/250
1.Link square head/top plate 150/200/250

2:筒体
2.Cylinder body

3:开锁机构
3.Unlocking mechanism

4:单层耳板/双层耳板
4.Single-layer ear plate/Double-layer ear plate

5:旋转底板50
5.Rotating base plate 50

6:固定底板40
6. Fixed base plate 40

7:中心底板齿
7.Center base plate tooth

ROTARY DIGGING

双底嵌岩捞沙斗

双底嵌岩捞沙斗，是旋挖钻机施工中广泛应用的钻具之一，主要针对强风化中风化等破碎岩石沙土进行捞取作业双底嵌岩捞沙斗根据不同的齿板形状与角度以及跟齿的加减可以调节钻进速度与较硬岩石的钻进。

The double-bottom rock-socketed sand-dredging bucket is one of the drilling tools widely used in the construction of rotary drilling rigs. It is mainly used for dredging broken rocks and sandy soil such as strongly weathered and moderately weathered rocks. The double-bottom rock-socketed sand-dredging bucket can adjust the drilling speed and drilling in harder rocks according to different tooth plate shapes and angles as well as the addition and subtraction of side teeth.

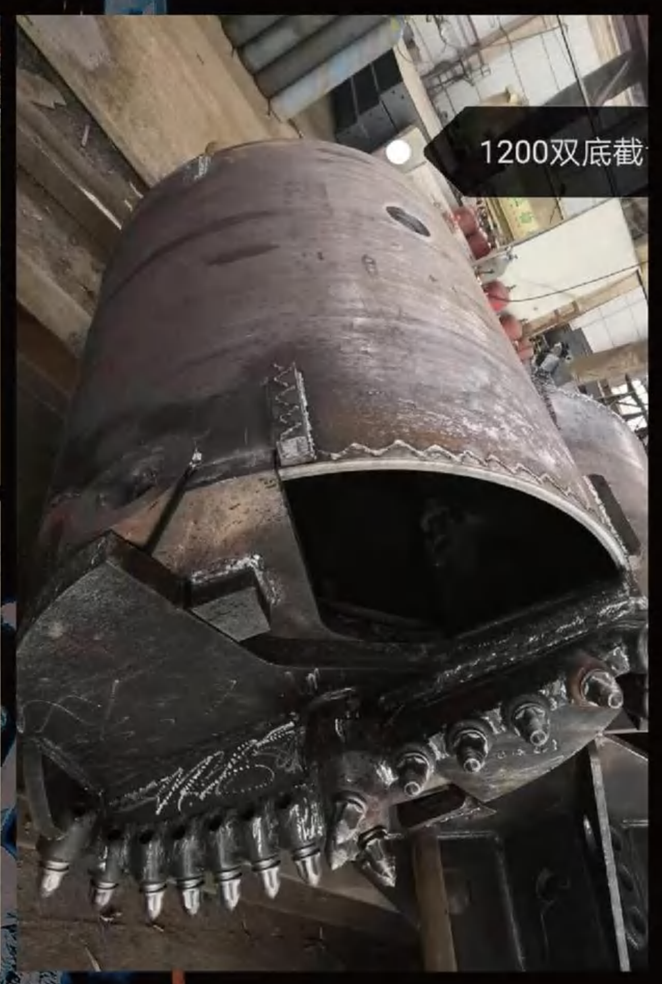
BARREL DRILL STRUCTURE INTRODUCTION

筒钻结构介绍









DATA REFERENCE FORM DETAILED TABLE

钻头规格(mm) Drill bit specification (mm)	壁厚(mm) Wall thickness (mm)	高度(mm) Height (mm)	截齿筒体外径(mm) Outer diameter of the cutting pick cylinder (mm)	齿间距(mm) Tooth spacing (mm)	底板厚度(mm) Thickness of base plate (mm)	齿数(个) Number of teeth	说明 Instruction
∅600	20	1200	500	580	上40+下50	6	根据实际工况调整齿板形状与边齿加强可解决施工效率与截齿损耗等问题 Adjusting the shape of the tooth plate and strengthening the side teeth according to the actual working conditions can solve problems such as construction efficiency and cutting pick wear
∅700	20	1200	600	680	上40+下50	8	
∅800	20	1200	700	780	上40+下50	8	
∅900	20	1200	800	880	上40+下50	12	
∅1000	20	1200	900	980	上40+下50	13	
∅1100	20	1200	1000	1080	上40+下50	14	
∅1200	20	1200	1100	1180	上40+下50	15	
∅1250	20	1200	1150	1230	上40+下50	16	
∅1400	20	1200	1300	1380	上40+下50	17	
∅1500	20	1400	1400	1480	上40+下50	22	
∅1600	20	1200	1500	1580	上40+下50	23	根据实际工况调整齿板形状与边齿加强可解决施工效率与截齿损耗等问题 Adjusting the shape of the tooth plate and strengthening the side teeth according to the actual working conditions can solve problems such as construction efficiency and cutting pick wear
∅1800	20	1200	1700	1680	上50+下50	26	
∅2000	20	1200	1900	1880	上50+下50	28	
∅2200	20	1200	2100	2080	上50+下50	30	
∅2500	20	1200	2400	2380	上50+下50	33	
∅2800	20	1200	2700	2680	上50+下50	36	
∅3000	20	1200	2900	2980	上50+下50	37	

MALIMER CONSTRUCTION METHOD

MLMT工法服务岩石数据库

PAGE COUNT /43

2014-2024

MAILIN MATT TECHNOLOGY (XIAMEN) CO., LTD.

麦林迈特工法服务自2014-2023年专门针对极硬岩石、坚硬岩石、较硬岩石等地层截齿与钻具匹配问题，进行深入研究。主要研究截齿在筒钻与双底嵌岩捞沙斗钻具的磨损形式与角度设计，在不同钻机扭矩下针对不同的岩石所表现得磨损形式大不相同，反复调整角度，不断改进截齿设计与合金匹配，专业研破岩原理通过理论与实践的结合，总结出来了很多经验与方法，并建立了相对较完善的麦林迈特工法服务数据库。

From 2014 to 2023, Merlin Met's construction method service has conducted in-depth research on the matching problem of cutting picks and drilling tools for formations such as extremely hard rocks, hard rocks, and relatively hard rocks. Mainly study the wear form and angle design of cutting picks in drilling tools such as core barrels and double-bottom rock-socketed sand-dredging buckets. Under different drilling rig torques, the wear forms exhibited for different rocks are very different. Repeatedly adjust the angle, continuously improve the cutting pick design and alloy matching, and professionally study the rock-breaking principle. Through the combination of theory and practice, a lot of experience and methods have been summarized, and a relatively complete Merlin Met construction method service database has been established.

通过大量的现场跟进,反复测试,收集了全国不同地区大量针对极硬岩、坚硬岩、较硬岩、的岩石标本,通过归纳建立了麦林迈特岩石数据库,我们从岩石对截齿合金磨损的速度,以及易产生高温的岩石特点,以及影施工进度等特点分为三大类:极硬岩石、坚硬硬岩、较硬岩石。

Through a large number of on-site follow-ups and repeated tests, a large number of rock specimens for extremely hard rocks, hard rocks, and relatively hard rocks in different regions across the country have been collected. Through induction, the Merlin Met rock database has been established. We classify rocks into three categories according to the speed at which rocks wear out the cutting pick alloy, as well as the characteristics of rocks that are prone to generating high temperatures and affecting construction progress: extremely hard rocks, hard rocks, and relatively hard rocks.

EXTREMELY HARD ROCK
极硬岩

此类岩石特点分为完整岩石与破碎岩石,厦门为代表的中细颗粒较交完整的花岗岩(推荐牙轮),破碎石英岩、石英砂岩(推荐截齿)普通截齿10-30分钟内就会磨损非常严重,由于石英含量较高,很多情况地勘报告显示中风化石英砂岩,或者硅质石英岩等,俗称:磨刀石。面对此类地层需要根据实际地层定制匹配钻具与截齿,常规钻具无法完成施工作业。

The characteristics of this kind of rock are divided into complete rock and broken rock. The relatively complete granite with medium and fine particles represented by Xiamen (recommended cone bit). Broken quartzite and quartz sandstone (recommended cutting pick). Ordinary cutting picks will be severely worn within 10-30 minutes. Due to the high quartz content, in many cases, the geological exploration report shows moderately weathered quartz sandstone or siliceous quartzite, etc., commonly known as: whetstone. Facing such strata, it is necessary to customize and match drilling tools and cutting picks according to the actual strata. Conventional drilling tools cannot complete construction operations.

















HARD ROCK
坚硬岩

此类坚硬岩石在施工作业中可以很好的进行钻进,以深圳、广州、青岛、潍坊、湖北的花岗岩相对较完整,根据目前国内施工经验首选牙轮筒钻可以更好,更快的完成施工作业。针对坚硬不完整的地层,截齿在钻进过程中施工难度较大、损耗较高,可以通过工法服务匹配截齿与钻具进行解决。

This kind of hard rock can be drilled well during construction operations. The granite in Shenzhen, Guangzhou, Qingdao, Weifang, and Hubei is relatively complete. According to the current domestic construction experience, the cone barrel drill is the first choice to complete construction operations better and faster. For hard and incomplete strata, it is more difficult and has higher wear and tear for cutting picks during the drilling process. This problem can be solved by matching cutting picks and drilling tools through construction method services.

















HARDER ROCK
较硬岩石

此类岩石是目前国内比较常规的硬岩,完整与破碎岩结合,对钻具与截齿的性能要求也是较高的,随着国内旋挖钻机技术水平不断提高,出现了很多大扭矩大加压力的设备,所以面对此类岩石,还是要根据实际工况提升截齿合金与齿体耐磨性能优化钻具角度,才能更好地完成施工作业。

This kind of rock is a relatively common hard rock in China at present, combining complete and broken rocks. The performance requirements for drilling tools and cutting picks are also relatively high. With the continuous improvement of the technical level of domestic rotary drilling rigs, many equipments with large torque and high pressure have emerged. Therefore, in the face of such rocks, it is still necessary to improve the wear resistance of the cutting pick alloy and the tooth body and optimize the angle of the drilling tool according to the actual working conditions in order to better complete the construction work.




















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