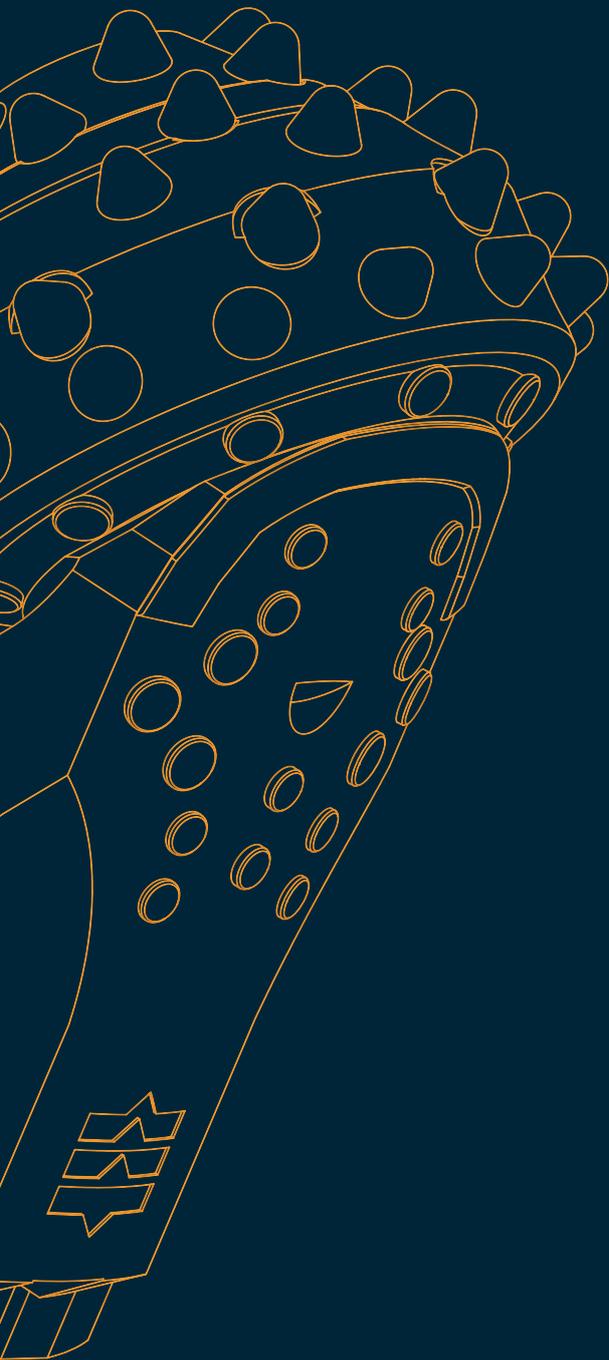




ROLLER BIT | ROUND SHANK CHISEL



www.drillnova.com

DRILLNOVA



Welcome to DRILLNOVA

Established as a subsidiary of FIRMTECH, Drillnova carries forward the same spirit of drilling innovation and reliability. Based in Hebei, China, we specialize in the manufacturing of roller bits and bullet teeth for Foundation Piling, Mining, and HDD, providing trusted solutions for demanding drilling environments.

With a global footprint extending from Shenzhen and Guangzhou to Europe, South Asia, and the Middle East, Drillnova products are recognized by customers worldwide. Backed by solid field experience, we focus on enhancing drilling efficiency, reducing operational costs, and keeping you competitive in the marketplace.

At Drillnova, we are more than a tool manufacturer — we are your drilling solutions partner. Leveraging industry expertise and advanced technology, we help you stay **"ALWAYS ONE TURN AHEAD"** in every project.

Join us as we continue to support your success with professional knowledge, reliable products, and a commitment to solving the toughest drilling challenges.

Your Trusted Partner On-Site

- 2009**
 - Established in 2009. Branch office in the Dubai.
 - Trading PDC or TCI bits, supply to water well drilling market in China
- 2015**
 - Firmtech adjusted its production line and focused on piling roller bit production due to the growing foundation drilling market.
- 2023**
 - Currently, Firmtech has built its own production line for bullet teeth to meet the needs of most clients.
- 2024**
 - Drillnova was established at the end of 2024, providing customers with one-step drilling tool.



ROLLER BIT MH-3

PREMIUM TYPE

52-Inserts Full Coverage

Ensures optimal rock contact for higher penetration and extended working life, boosting overall field performance.

Wear-Resistant Alloy Bearings

Bearings coated with a high-durability alloy, providing longer service life and stable performance - even under harsh drilling conditions.

Real-world tests show an average depth increase from 35m to 45m per run.

Beyond standard O-ring seals, we add a protective layer using high-precision machinery. This design shields the O-ring from cutting wear, further extending the bit's overall lifespan.



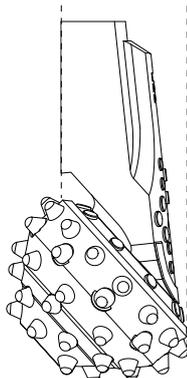
3rd Generation Cone



4th Generation Body

Preloaded Welding Angle

Specially engineered for piling operations, each leg arrives preset with the optimal welding angle. No measuring or adjustments needed—just place it on the cutting ring.



Vacuum Grease System

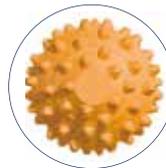
Upgraded lubrication system outperforms traditional methods, optimizing grease flow and effectively reducing heat from friction.

“This design innovation has simplified our daily workflow, allowing us to focus on productivity rather than tedious angle checks.”

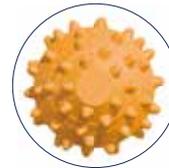
— On-Site Feedback

Select Cone Design

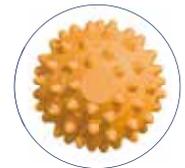
3rd Generation



Chisel
60-110MPa
Medium-Hard



Conical
100-180MPa
Balanced Option



Spherical
150-280MPa
Ultra-Hard

Faster, More Accurate Welding

Real-world tests show up to 20% less setup time and fewer alignment errors, boosting both workshop and on-site

DESIGN EVOLUTION

Continuous innovation for better penetration, simpler welding, and stronger durability

Cone Generation

Smarter Insert Layouts, Better Penetration



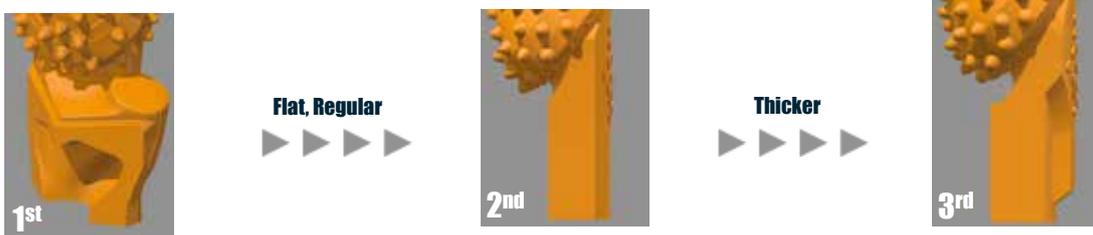
- **Tricone Bit Structure** (OD 118mm)
- **Limited Inserts** → Low penetration rate
- **Blind grooves** → Basic layout, less durability

- **Piling Bit Structure** (OD 118mm)
- **Increased Inserts** → Reduced blind spots, better cutting contact
- **Challenges** → Medium penetration, still room for improvement

- **Full Coverage Inserts** (OD 120mm)
- **No Blind Spot** → Maximized penetration, longer lifespan
- **Field Result** → +10% Drilling Efficiency vs. 2nd Gen

Body Generation

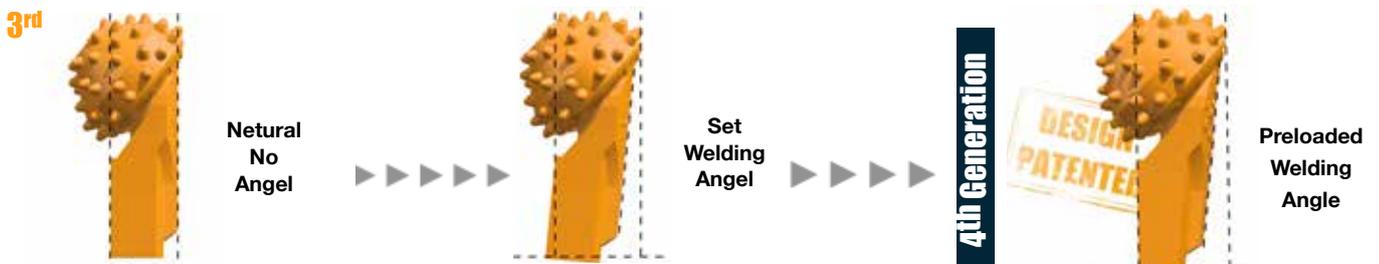
Refining shape & welding angles for robust performance



- **Shape:** Irregular 120° & nozzle segment
- **Challenges:**
 - Difficult welding & positioning
 - Risk of heat damage when cutting nozzle

- **Shape:** Flat, regular body
- **Advantages:** Fast welding to cutting ring
- **Challenges:** Reduced strength due to thinner body

- **Shape:** Flat & thicker body
- **Advantages:** Better drilling weight tolerance
- **Challenges:** Manual angle alignment still needed



- Automatic alignment
- Higher load capacity
- +20% Faster welding

DRILLNOVA - ALWAYS ONE TURN AHEAD

ROLLER BIT DATA SHEET

DRILLNOVA offers multiple Roller Bit models to tackle varied formations



MH-1
Entrance-level



MH-2
Traditional



MH-3
Flagship



MH-3C
Qui-Change Holder



MH-3B
Qui-Change Bolts



MH-3H
Large Pile Dia.

Model	Cone Type	Cone (Teeth Dia.×Qty-Dia.)	Body Type	Connect	Selection Advice
MH-1	2 nd	13×45-132	4 th	Welding	Smaller piles / moderate rock; cost-effective in construction
MH-2	3 rd	14×52-139	1 st	Welding	Widely used in oil & gas; stable penetration in mediumhard formations
MH-3	3 rd	14×52-139	4 th	Welding	For tough, abrasive rock; +20% faster drilling in field tests
MH-3H	3 rd	17×74-191	4 th	Welding	Large-diameter boreholes (OD>2000mm); robust torque capacity
MH-3C	3 rd	14×52-139	Holder	Qui-Change	Holder-based quick-change; easy on-site swaps, minimal downtime
MH-3B	3 rd	14×52-139	Bolts	Qui-Change	Bolt-type quick replacement; extra stability for specialized core barrels

* MH-1 Raw Material 20CrNiMo

* All models come standard with Journal bearing, Double sealing, and a Vacuum grease system.



ROUND SHANK CHISEL

Bullet Teeth

Ultra-Coarse Carbide of World-Class Top Level

DRILLNOVA round shank chisel features top-grade, Ultra-coarse tungsten carbide, offering superior heat transfer capabilities. Even in hard and highly abrasive formations, the inserts effectively maintain a relatively low temperature, ensuring exceptional performance and durability.

Master of Brazing Technology

DRILLNOVA utilizes state-of-the-art automatic welding technology for the production of bullet teeth. The advanced welding system ensures precise control of brazing temperatures, maintaining a strict tolerance of ± 10 degrees Celsius. By seamlessly combining brazing and heat treatment into a single, efficient heating process, it effectively reduces decarburization and enhances the overall quality and durability of the product.

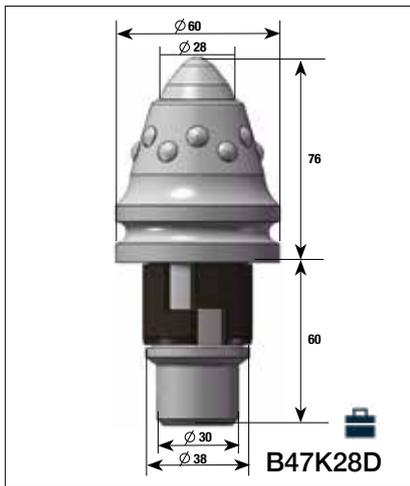
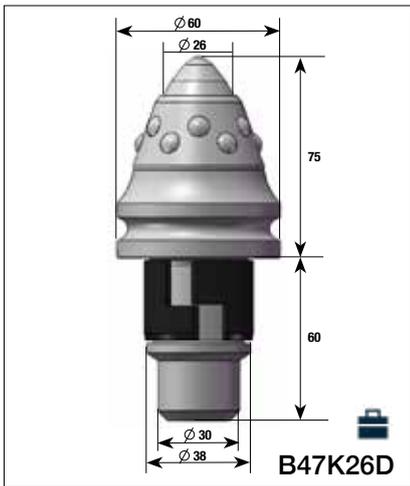
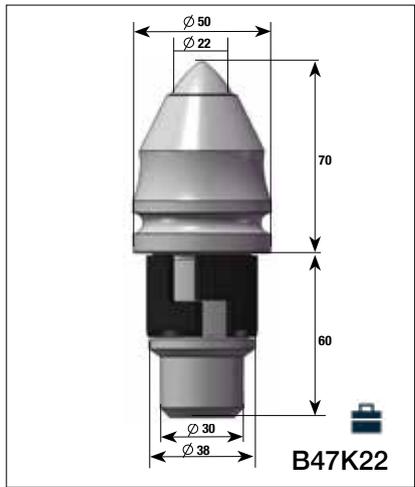
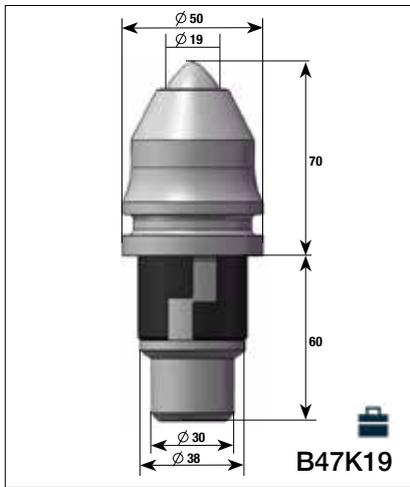
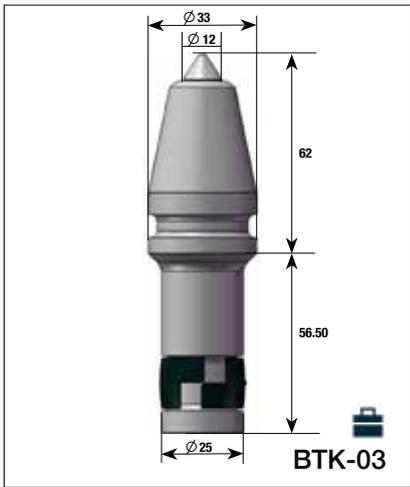
Superior Wear-Resistant Body

Crafted from advanced wear-resistant materials and refined through low-temperature forging, the body achieves exceptional surface hardness while preserving internal toughness.

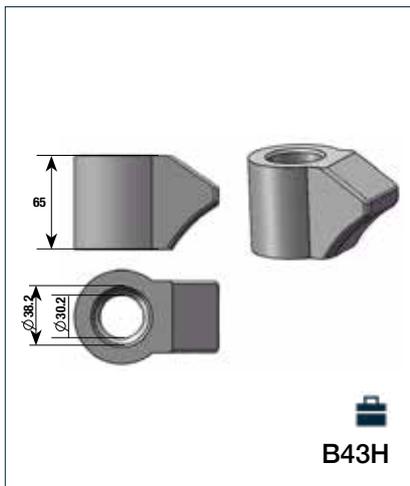
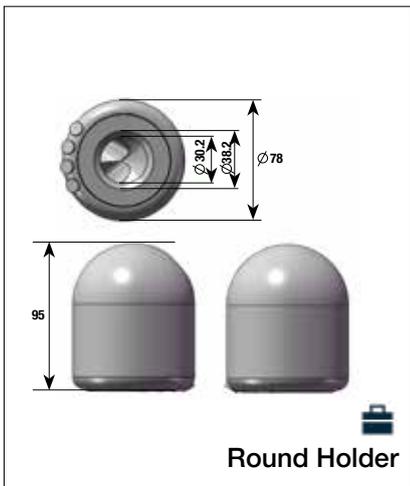


SPECIFICATION

Rotary Drilling Teeth

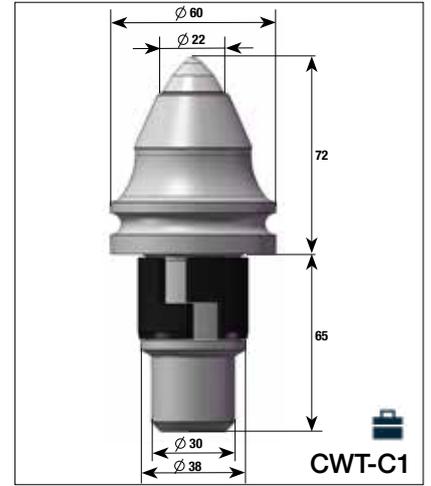
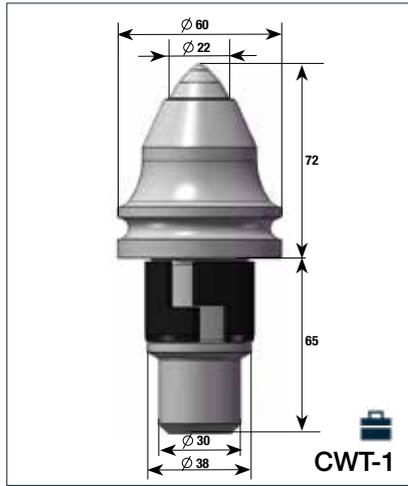
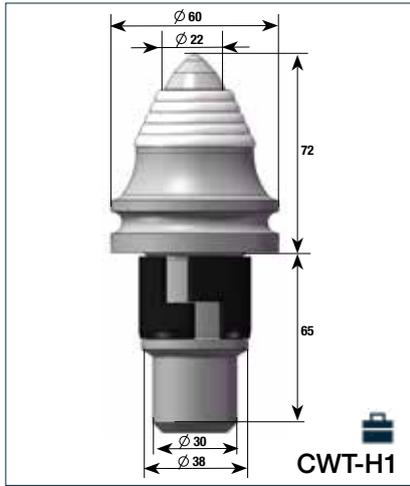


Body Protections :

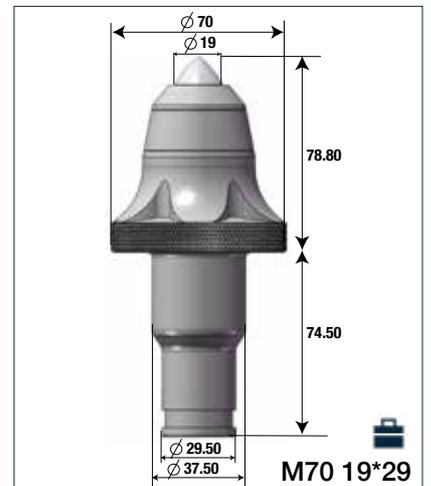
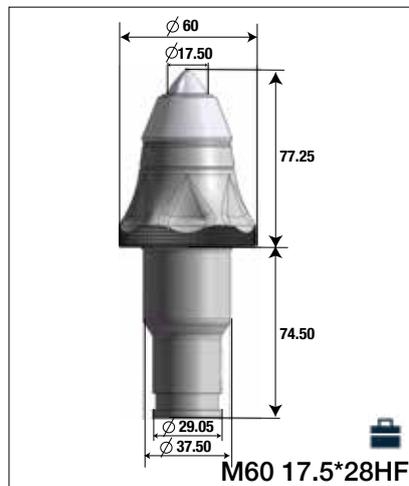
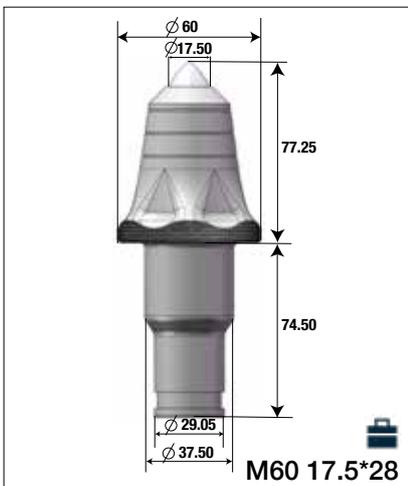
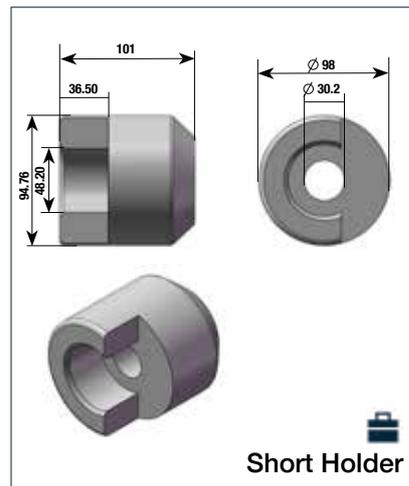
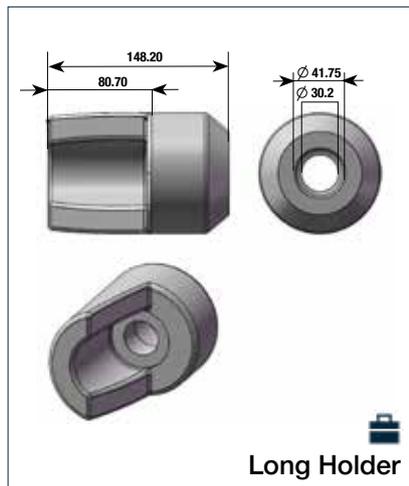


HOLDER SPECIFICATION

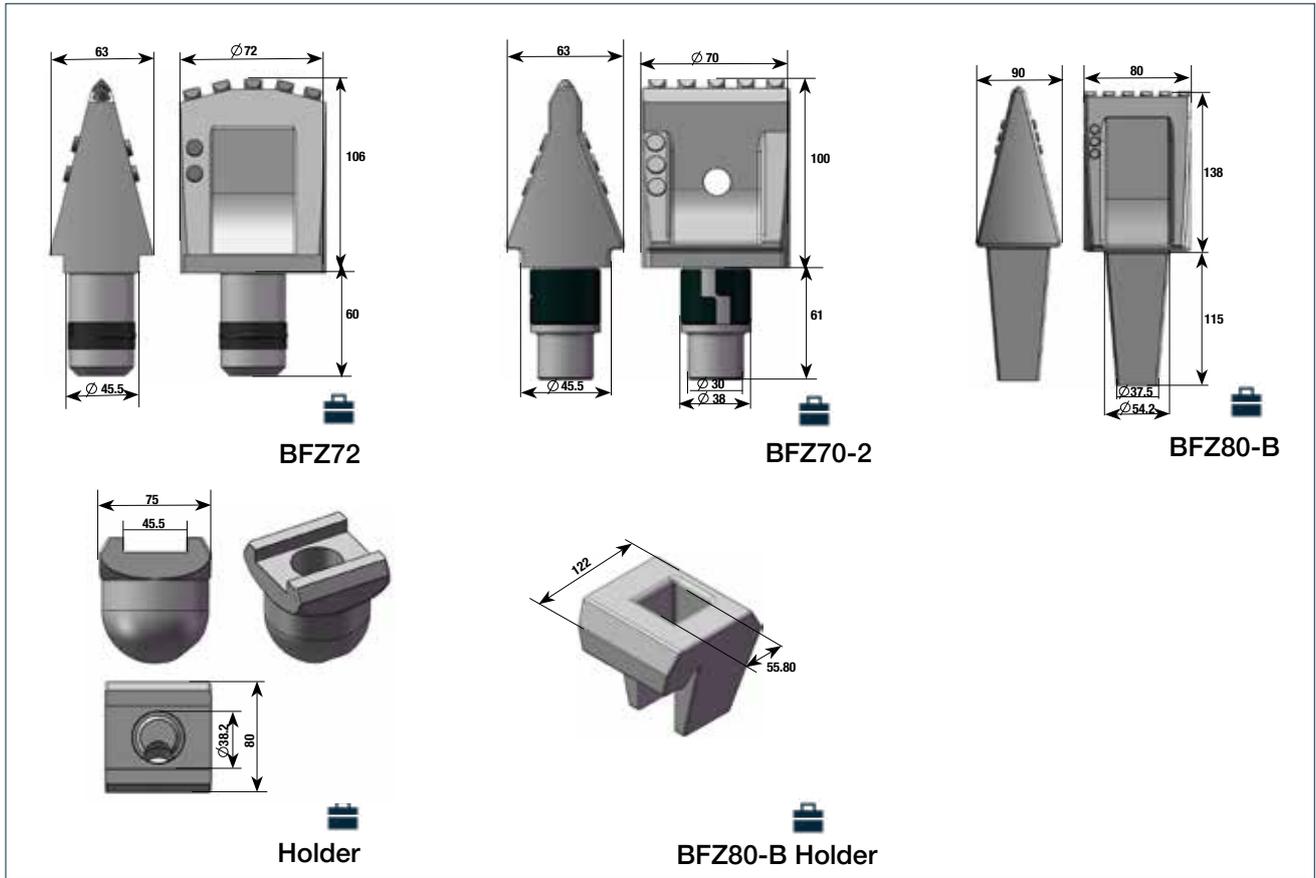
Hydromill Cutting Teeth



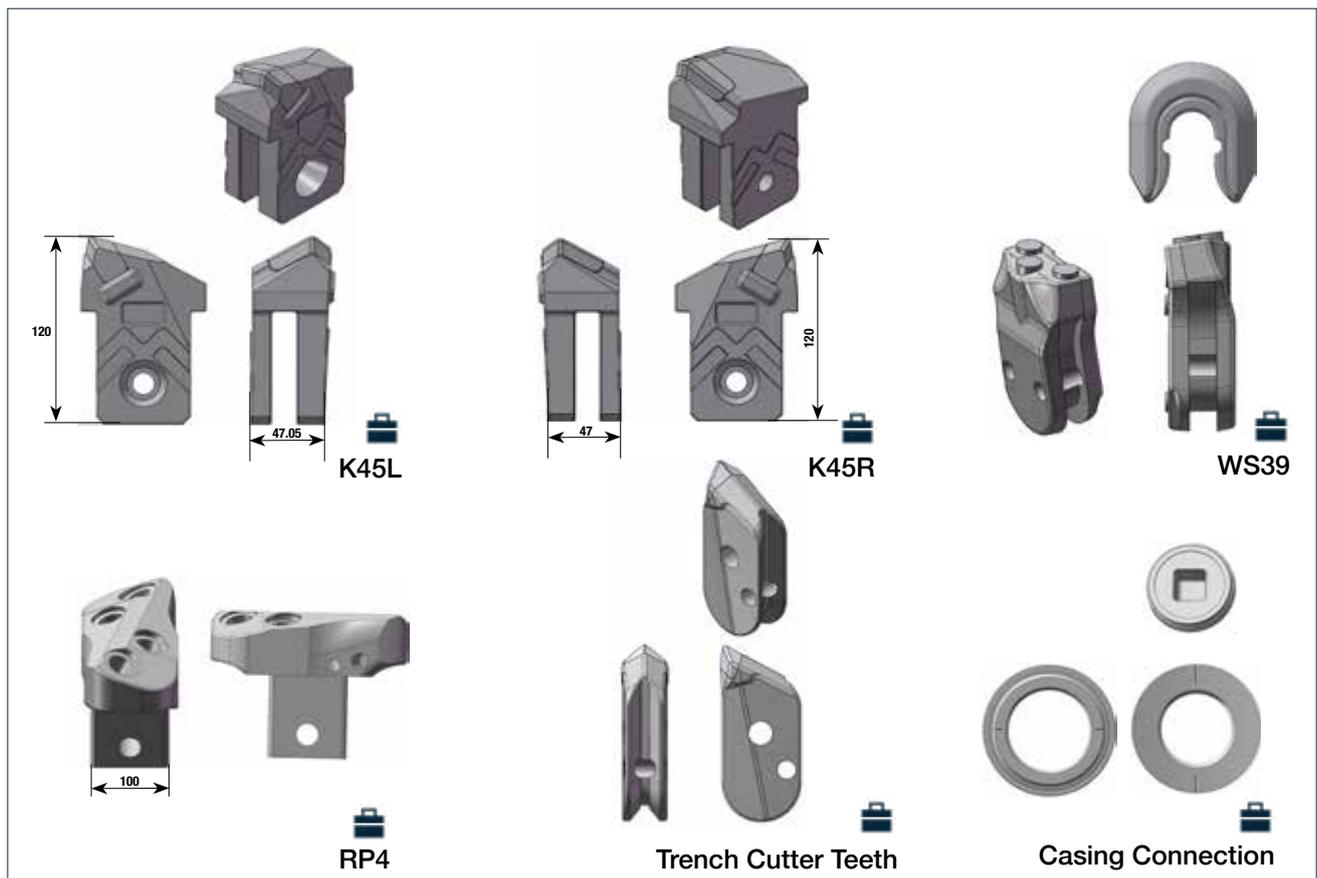
Coal Mining Picks



Soil Cutting Teeth



Other



Application



TianGui Intercity Railway, China

Tools: RSC CWT-01

Time: Dec. 2023

Location: Guangzhou, China

Company: Guangzhou Shenda Construction

Formation: Granite, UCS 100 MPa+

Performance: Site feedback

Shenzhen Wuhe Subway Station, China

Tools: MH-3C Roller Bit

Time: Sept. 2024

Location: Guangdong, China

Company: Guangdong Centennial Construction

Formation: Granite

Performance: Roller bit was used in 1.5m, and 1.8m core barrels. One brand-new set of roller bit achieved around 35 m socketing.



D'Erica @ Ctr Park D'sara, Malaysia

Tools: MH-3H Roller Bit

Time: May 2023

Location: Malaysia

Company: Geotechnical Alliance (a subsidiary of Soletanche Bachy)

Formation: Granite

Performance: Using MH-3H roller bit, the working life was improved

DRILLNOVA

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