TungStuds

Tools for
true heroes!

MADE IN GERMANY

BETEK

Progress!

Betek company profile

Betek is a major manufacturer of consumable tools tipped with tungsten carbide. The company also develops tungsten carbide solutions especially for protection against wear, such as our TungStuds. Our range of products provides tool systems in over 16 areas of application. Our main area of focus is on road milling, excavation, recycling, mining and tunnelling. Numerous patents safeguard our position as a market leader and our entire product range is produced at our site in Aichhalden in the Black Forest. As a SME business we are geared up to react quickly and flexibly to client requests.

Betek TungStuds division

Whenever the ground is being dug or worked, Betek TungStuds are right on the front-line. Fitted with a tungsten carbide core, the TungStuds are the first thing to come into contact with the excavated material and are exposed to extreme abrasion. In addition to protection against wear being provided by the TungStuds, the material packed between them is also used as a buffer. This reduces direct wear on the metal surfaces caused by material movement. Instead of expensive spare parts being needed due to worn metal surfaces, it is just the TungStuds that have to be replaced. When using Betek TungStuds expenditure on maintenance is also lower, as thanks to their tungsten carbide core they can withstand even the most extreme conditions.

In use worldwide: BETEK tungsten carbide tools

1 - Road milling

2 - Surface mining

3 - Stabilising

4 - Recycling

5 - Foundation drilling

6 - Crushing and mixing

7 - Horizontal directional drilling HDD

8 - Mining

9 - Trenching

10 - Tunnelling

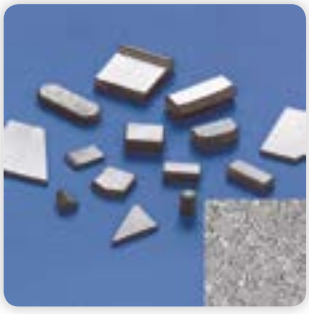
11 - Hydraulic milling cutters

12 - Forest mulching

13 - Agriculture

14 - Rail track construction

15 - TungStuds



16 - Abrasive wear protection

Use innovative tool systems from BETEK – and you'll make good progress with above-average daily productivity! The contours of BETEK tools and the grade of tungsten carbide used are always tailored to the job at hand. This ensures a long service life and minimal tool changes.

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How our high-tech tools are made

Customer service

- Cost-effective client solutions based on flexible structures
- Tailored, fast response to client requirements

Development & design

- Speedy creation of samples and prototypes
- Competitive prices thanks to close collaboration with all areas of production

Tungsten carbide manufacturing

- Raw materials of high purity used for great strength
- Consistently high, pore-free tungsten carbide quality produced through an exact process resulting from years of experience and know-how

The soldering side of production

Production equipment and processes specially developed to the utmost degree of perfection by experts in combining tungsten carbide and steel

Automation

Able to compete on the world market by virtue of a high degree of automation and flexible manufacturing plants

Quality assurance

Permanent checking of quality in accordance with DIN ISO 9001:2000 and DIN EN ISO 14001 along the entire production chain all the way to the construction site

Training

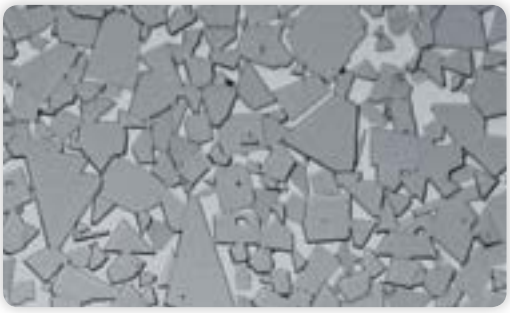
User training sessions at Betek or on the construction site itself to ensure long-term economic success and client satisfaction

Logistics

Able to react quickly thanks to:

- The use of cutting edge IT and optimum logistics links
- Standard products kept in store

Progress well with wear-resistant grades of tungsten carbide



Cross-section through grade B20G tungsten carbide, as used, for example, for TungStuds

Tungsten carbide and steel – firmly bonded for extreme demands

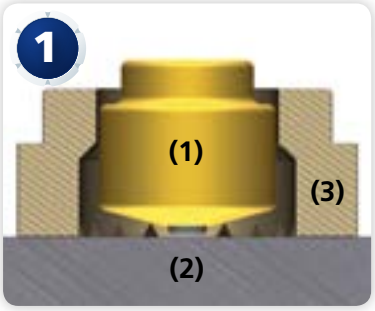
Steel and carbide are two materials with totally different expansion coefficients when subjected to heat. Nevertheless, it is of steel and tungsten carbide that our tools are made, with tungsten carbide for the wear-resistant tip, and steel for the tool shank. Since tools reach high temperatures during use, extreme tensile stresses are generated. These stresses are absorbed by a special brazing material that joins the tungsten carbide tip to the steel section.

We have developed our own methods and systems for this brazing process, which is carried out on fully automated machines with the process covered in an inert protective gas. Manufacturing parameters are fully monitored and documented to ensure consistent quality. Afterwards, brazing shear strengths are checked to ensure that our "Masters of the construction site" lose no time due to broken tools!

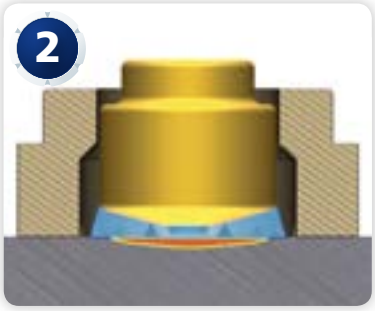
Monitored manufacturing on the fully automated soldering machine

The soldering process to permanently bond tungsten carbide and steel

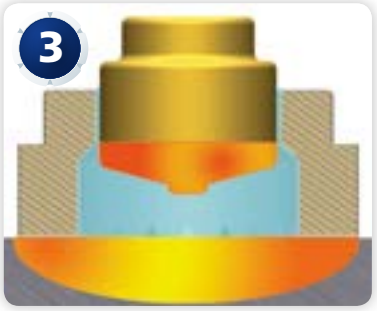
Done in a second – the welding process



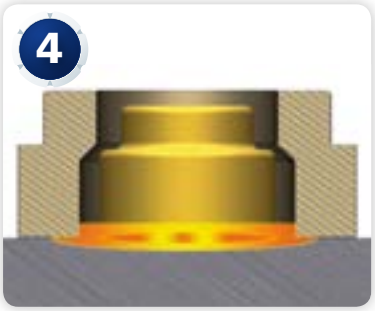
The TungStud (1) is placed onto the metal surface (2) that is to be protected. To protect the weld pool a ceramic ferrule (3) is placed around it.



When an electric current is applied, the TungStud raises up and an arc is initiated.



The arc causes TungStud and metal surface to become partly fused.



The TungStud sinks into the fused mass.

The two become completely joined.

Whenever you are welding on TungStuds, suitable protective equipment must always be worn!

Progress! – with intelligent solutions

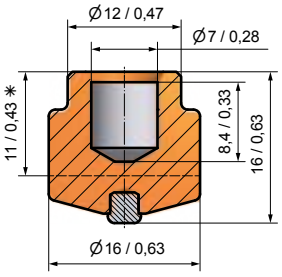
- TungStuds are quickly welded on
- Can also be used on uneven surfaces
- When TungStuds are worn, simply replace them
- Individual TungStuds can also be replaced
- Resistant to wear thanks to tungsten carbide core
- Less maintenance work means higher productivity
- Cost reduction through less downtime
- Minimal spare parts expenditure

High performance included

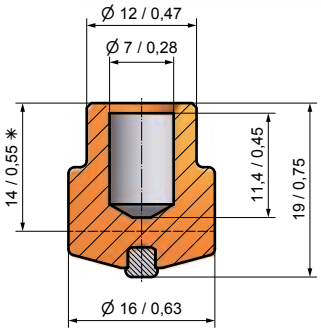
On request, we can also provide you with the appropriate stud-welding machine for your TungStuds.

Please ask us if you need any different sizes. We will also gladly explain to you the typical areas of use for the TungStuds shown here.

✳ Height after being welded on



BTS01 150
BTSD16/16



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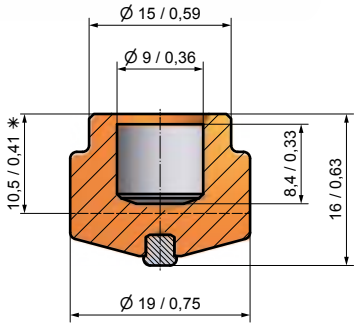
BTSD16/19



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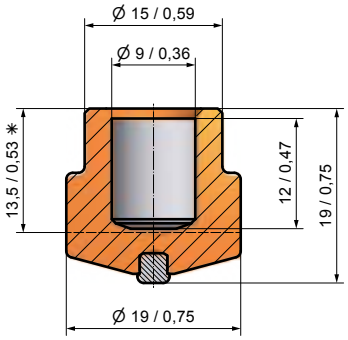

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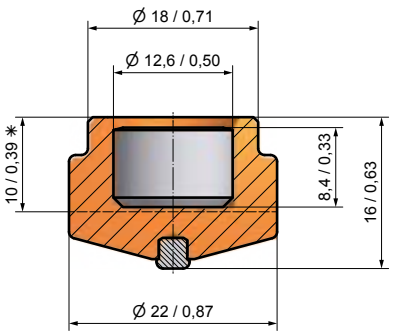
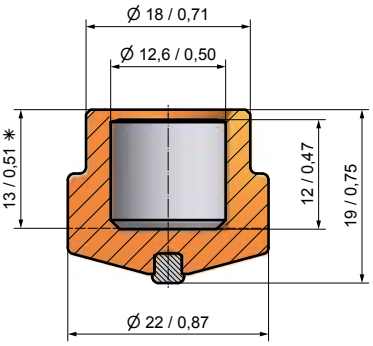


BTS05 100
BTSD22/16



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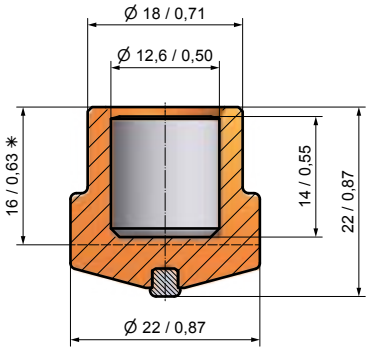
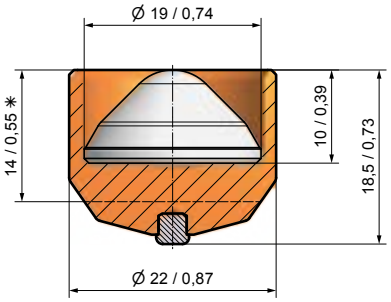
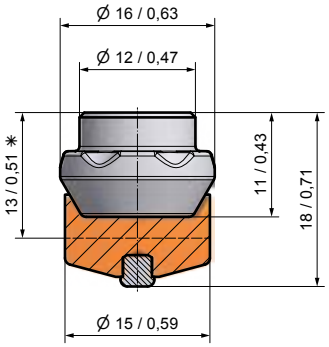


BTS07 100
BTSD22/22

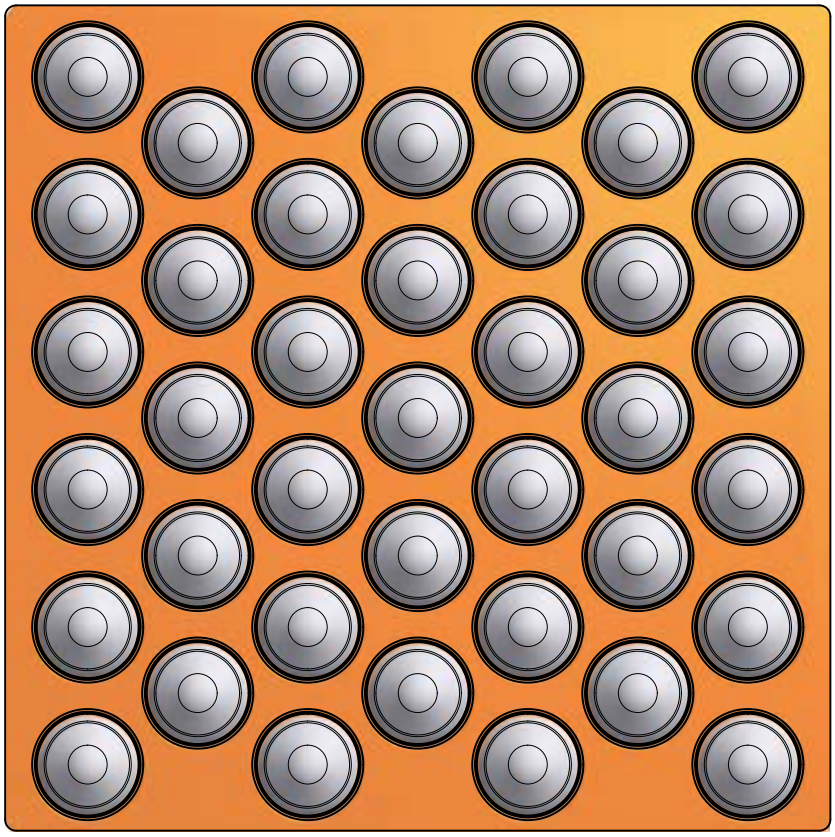


BTS08 100
BTSD22/18.5SG



BTS10B 150
BTSD16/18B

BTS-Plates



Dimensions

Width in mm	**Length** in mm
50	50
75	75
100	100
125	125
150	150

Other sizes on request.

Applications

You will find more application photos here:
www.betek.de/en/productprogramme/tungstuds/gallery.html

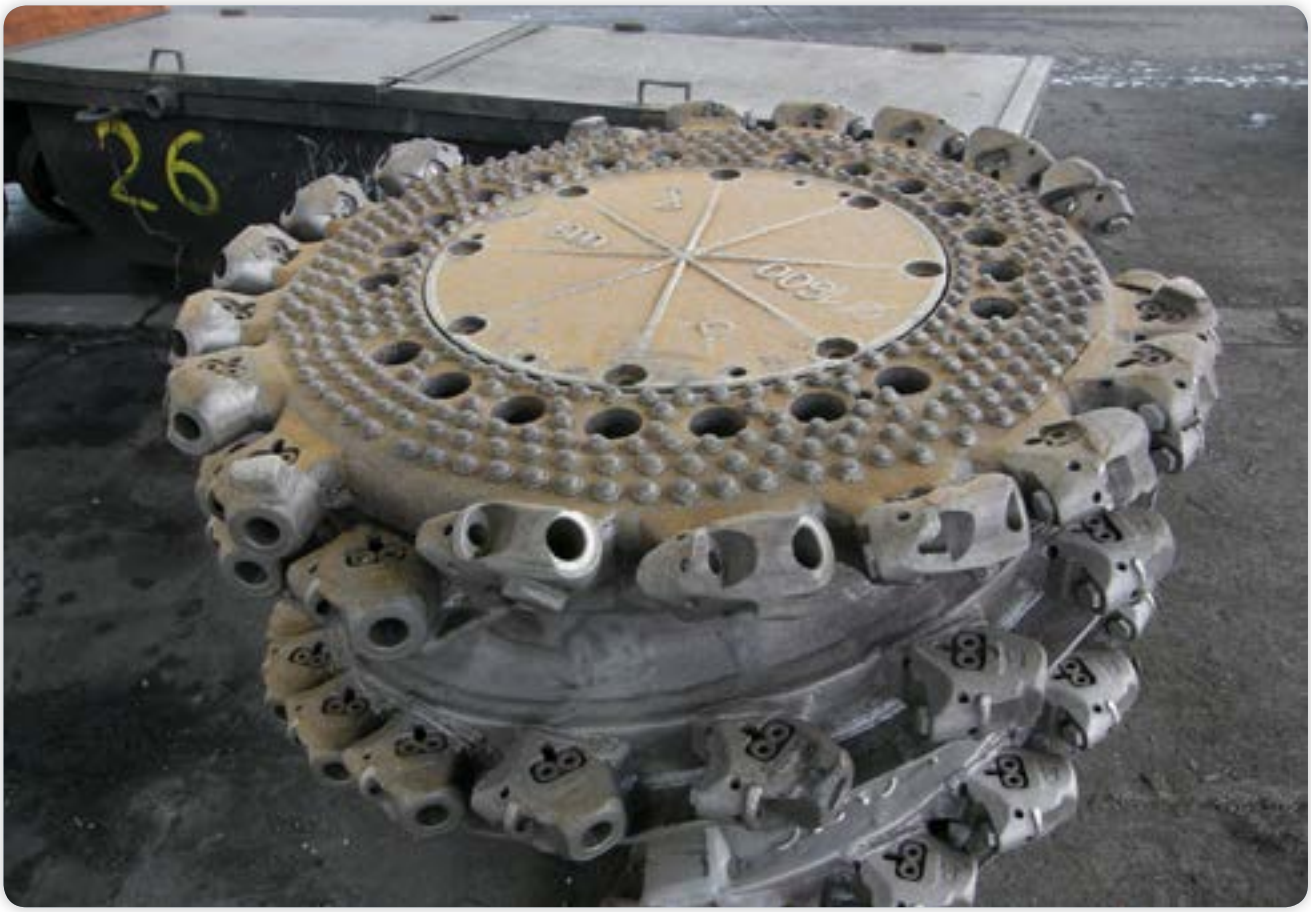
BETEK Progress!

Bucket Excavators

Diaphragm Wall Cutters

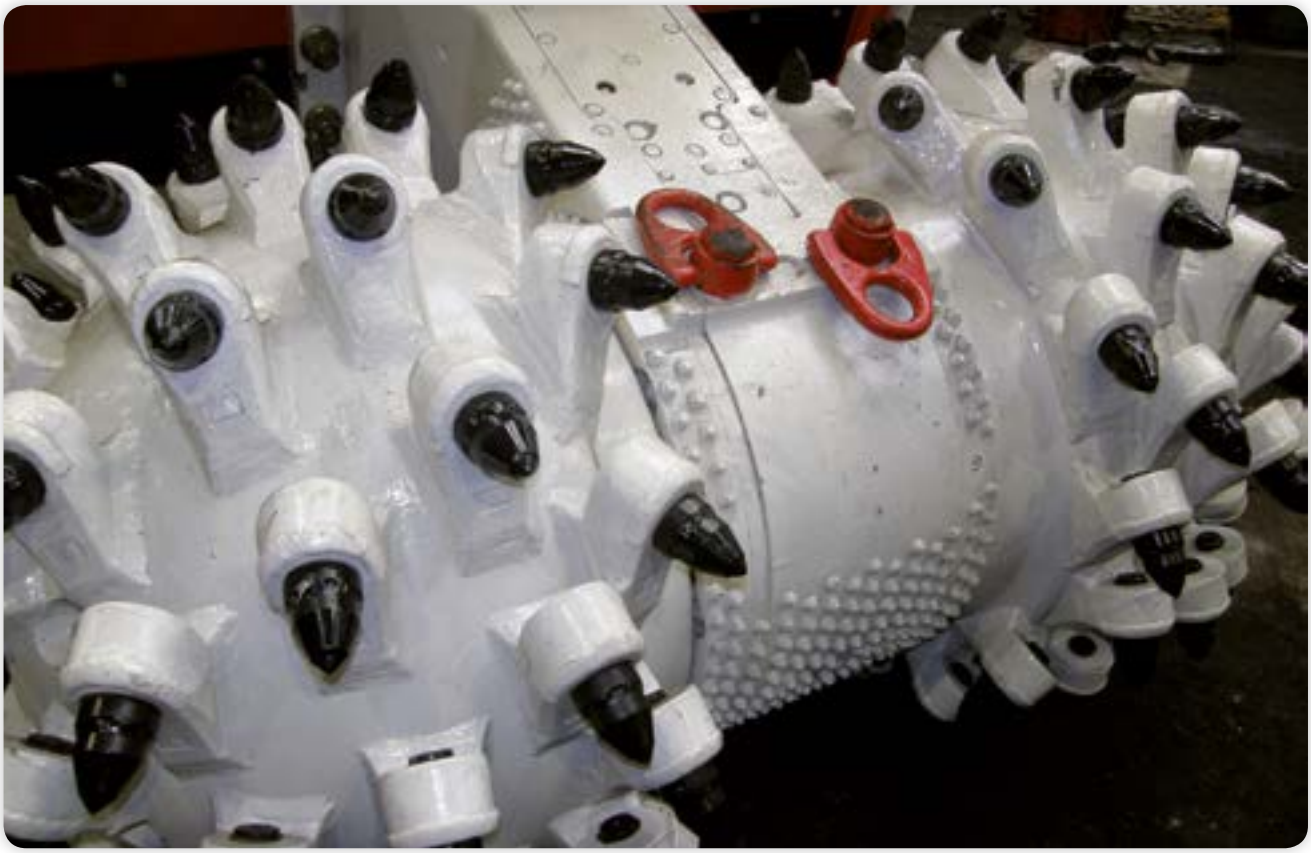
BETEK Progress!

Diaphragm Wall Gripper / Mining Drum



Mining Drum / Surface Mining Drum

Road Milling Housing / Road Header



Road Header / Tunnel Boring Machine

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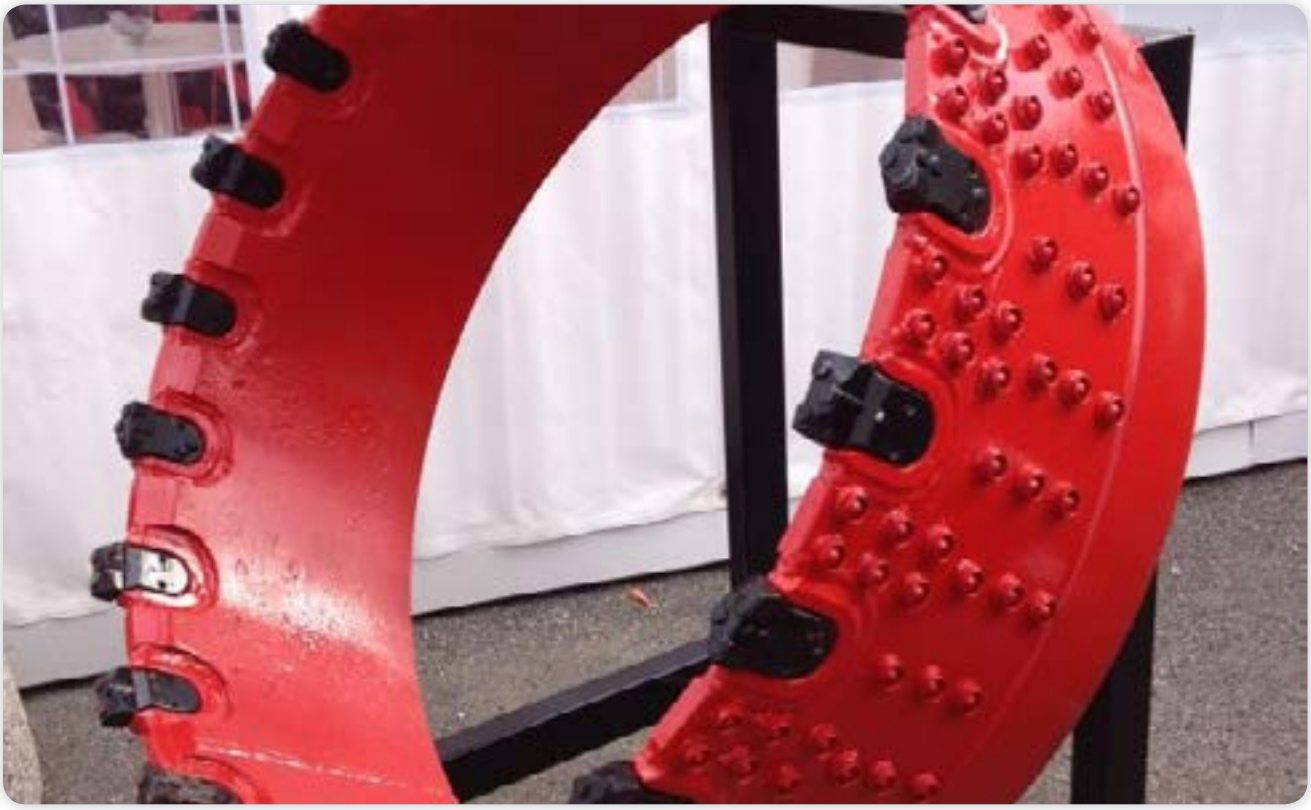
Trencher / Auger

Auger / Bucket



Back Reamer

Crusher / Harvester

US

GB

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