

BETEK

Weiterkommen!

Introduction of BETEK

Product Range

Welding Process

Shear Forces

Applications

Introduction of BETEK

Company SIMON



- BETEK belongs to SIMON
- SIMON contains 8 different companies
- Approx. 700 employees



Introduction of BETEK

BETEK GmbH



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



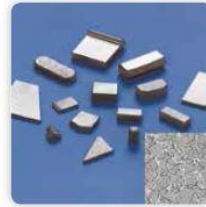
13 - Agriculture



14 - Rail track construction



15 - TungStuds



16 - Abrasive wear protection

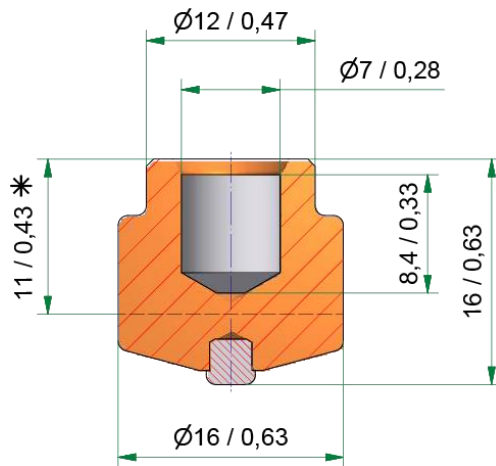


- Manufacturer of „tungsten carbide wear protection tools“
- 16 different product ranges
- 250 employees
- Turnover approx. 170 Mio.



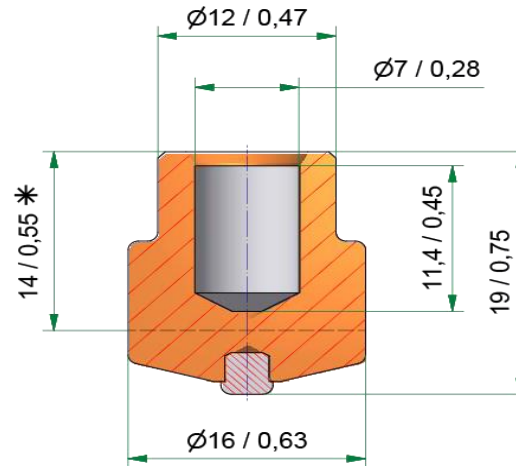
TungStuds 16mm with tungsten carbide core

* Height after welding on



BTS01
BTSD16/16

150



BTS02
BTSD16/19

150

Used to form a stone bed

Used in impact areas

Can be welded in any position

Both 16mm diameter studs

BTS01 11mm fitted height

BTS02 14mm fitted height

TungStuds 19mm diameter with tungsten carbide core

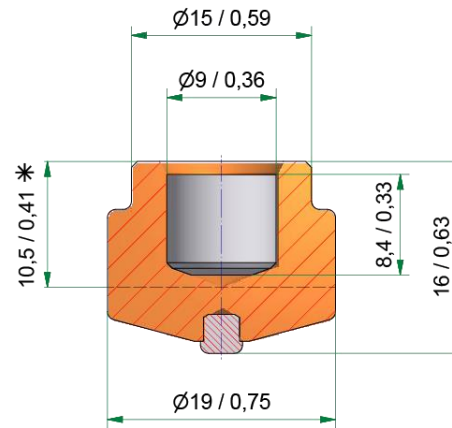
* Height after welding on

Used for impact areas

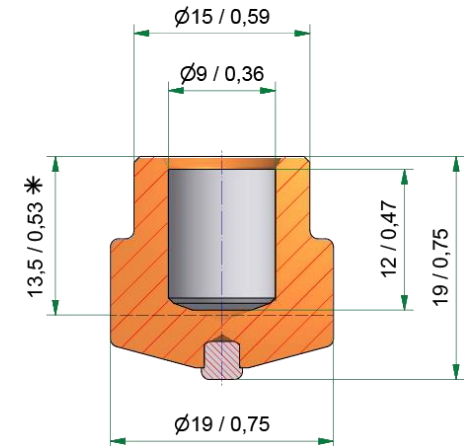
• Used to create stone box effect

• Can be welded ^ overhead

- BTS03 19mm diameter, 10.5mm fitted height
- BTS04 19mm diameter, 13.5mm fitted height



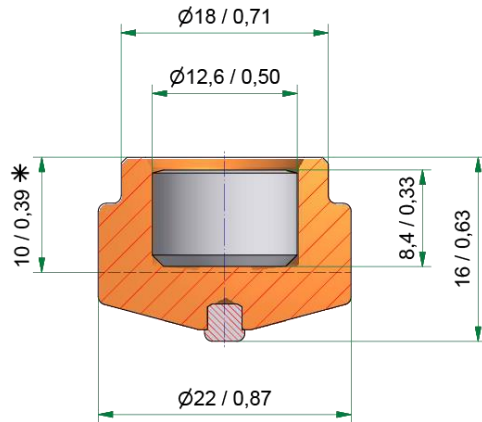
BTS03
BTSD19/16



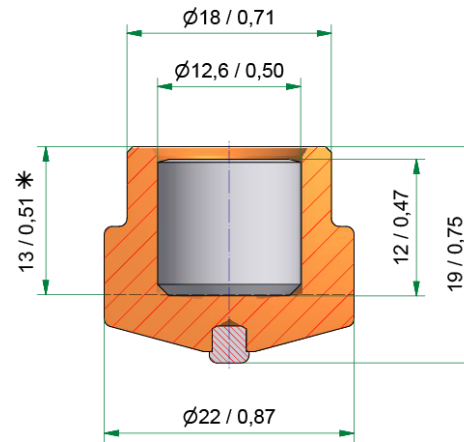
BTS04
BTSD19/19

TungStuds 22mm diameter with tungsten carbide core

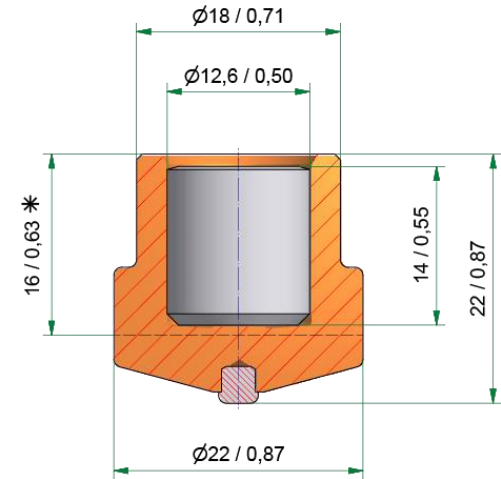
* Height after welding on



BTS05
BTSD22/16



BTS06
BTSD22/19



BTS07
BTSD22/22

22mm diameter studs with 10mm, 13mm or 16mm fitted height

Can only be welded with gun vertical

Not for positional welding

Quantity in a straight metre 28

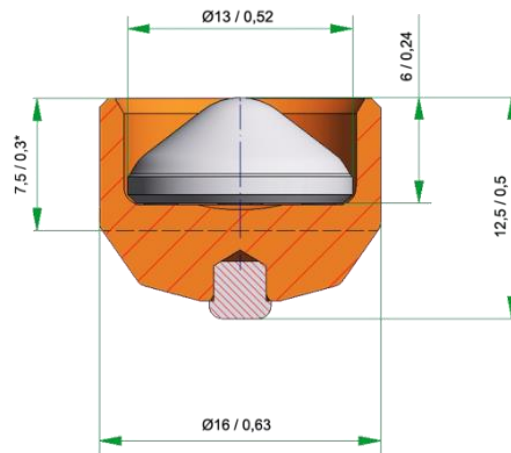
Quantity in a square metre 700

TungStuds with tungsten carbide tip

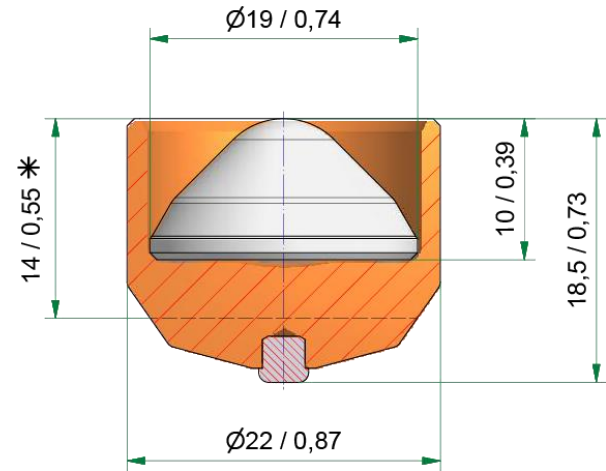
* Height after welding on

New Development

Unlike the other studs the Tungsten Carbide is brazed into the stud. The top steel will wear leaving the Tungsten Carbide tips as a very hard wearing surface. Mainly used for sliding abrasion areas. Not for impact areas. The BTS02 (16mm) can be applied in any position.



BTS20
BTSD16/12,5SG

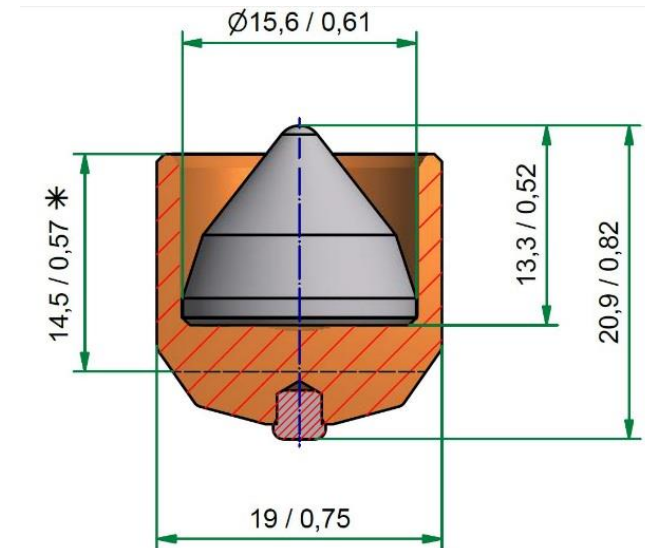


BTS08
BTSD22/18SG

Product Range

TungStuds

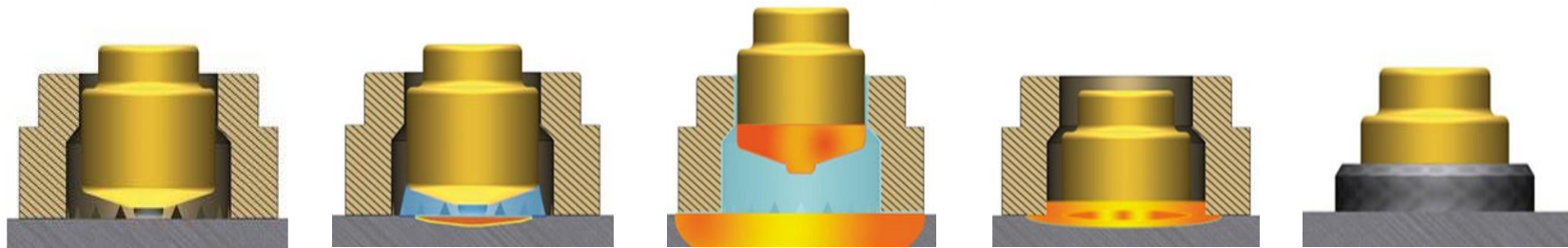
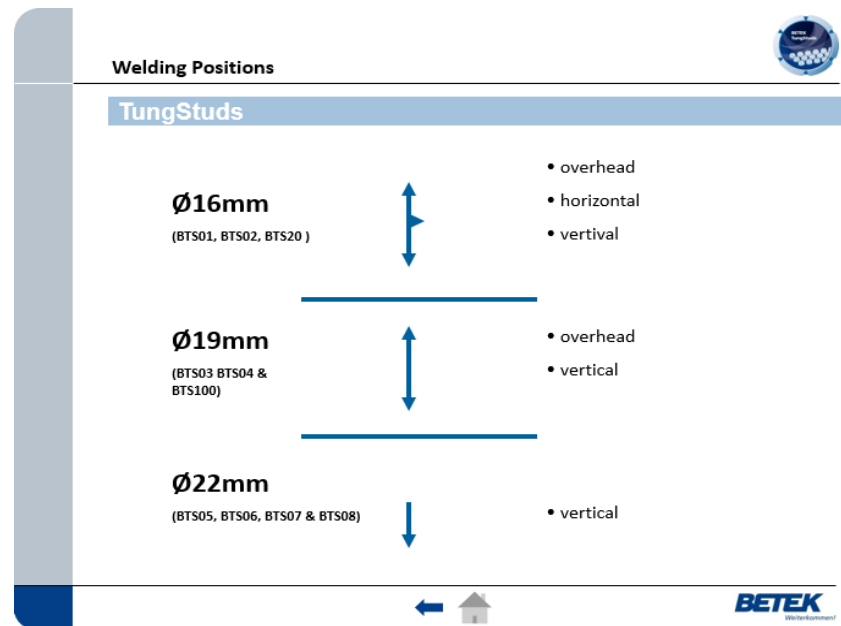
- The bts 100 has a tungsten carbide tip (shown in grey)
- .Can be welded in most positions
- .Can be welded to a 20mm auger flight
- .Quantity in a straight metre **33**



TungStuds

Advantages

- 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
- Less maintenance work means higher productivity
- Cost reduction through less downtime
- Minimal spare parts expenditure



TungStuds



TungStuds Performance

Welding Inspection

Welding Parameters

Welding Positions

Contact Pin

Ceramic

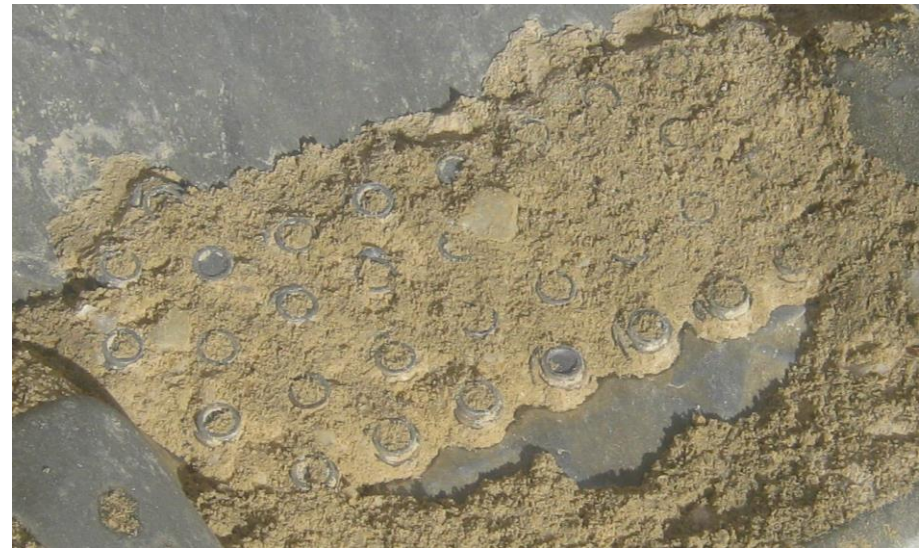


TungStuds Performance

TungStuds

- The TungStuds are welded on in a grid pattern
- The space between the TungStuds become embedded with mineral debris (Rock-Box-Effect)

 **Extensive wear protection**



TungStuds Performance

TungStuds

- The TungStuds are welded on in a grid pattern
- The space between the TungStuds does not have to be embedded with mineral debris (cutting wear protection)

 **Extensive wear protection**



Welding Positions

TungStuds

Ø16mm

(BTS01, BTS02, BTS20)



- overhead
- horizontal
- vertical



Ø19mm

(BTS03 BTS04 & BTS100)



- overhead
- vertical



Ø22mm

(BTS05, BTS06, BTS07 & BTS08)



- vertical



Tungstudsuk@gmail.com

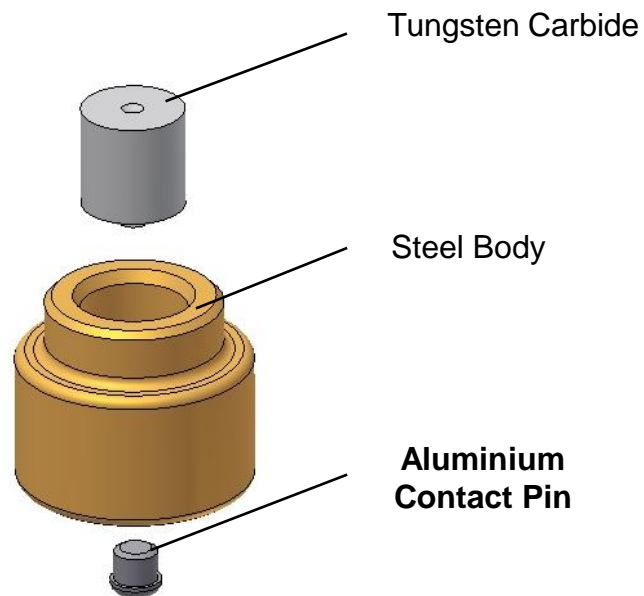
TungStuds

TungStuds type	Current in A	Time in s
BTS01	1200	0,6
BTS02	1200	0,6
BTS10B	1200	0,6
BTS20	1100	0,5
BTS03	1350	0,7
BTS04	1350	0,7
BTS05	1500	0,8
BTS06	1500	0,8
BTS07	1500	0,8
BTS08	1500	0,8



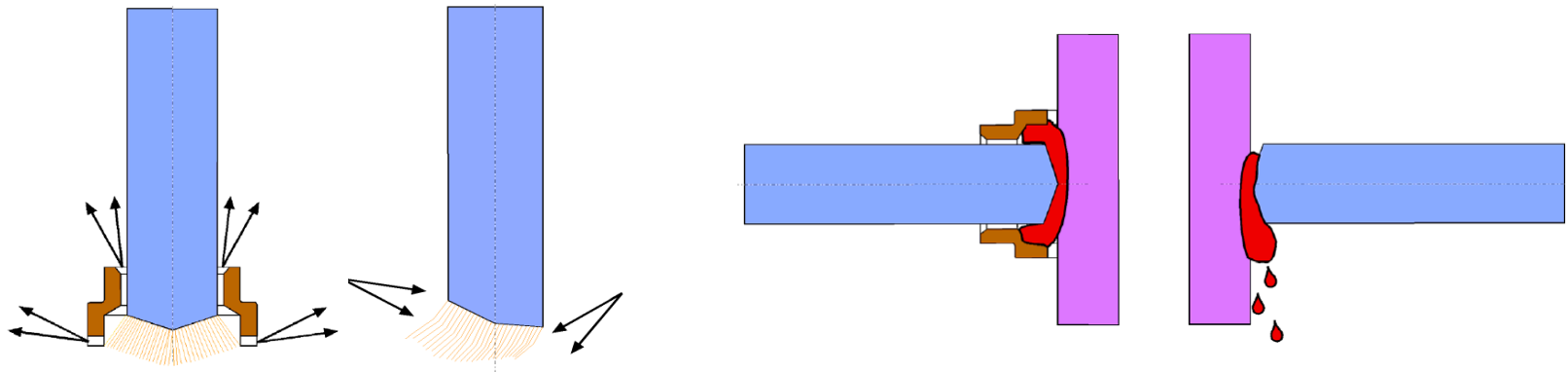
Contact Pin

TungStuds



- Aluminium is needed to ignite the welding process
- Aluminium stills the melting pool
- Aluminium binds nitrogen and eliminates pores

TungStuds



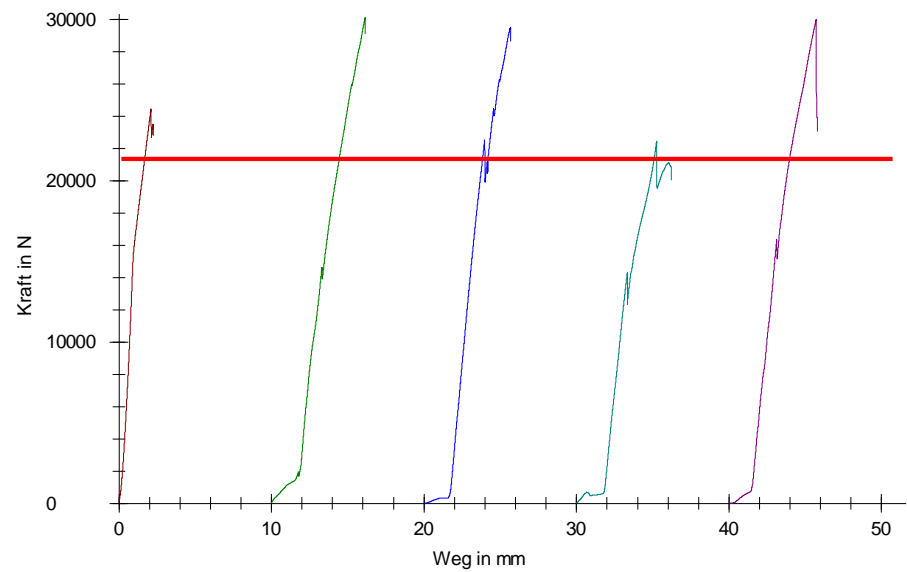
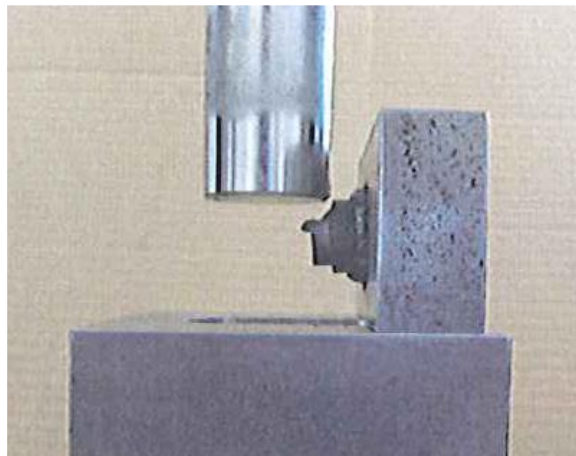
- The ceramic ferrule concentrates the arc
- Eliminates the air in the welding area through a metal-fume-atmosphere
- Shaping of the welding bead

Shear Forces

TungStuds

Basic material

S235JR (1.0037)

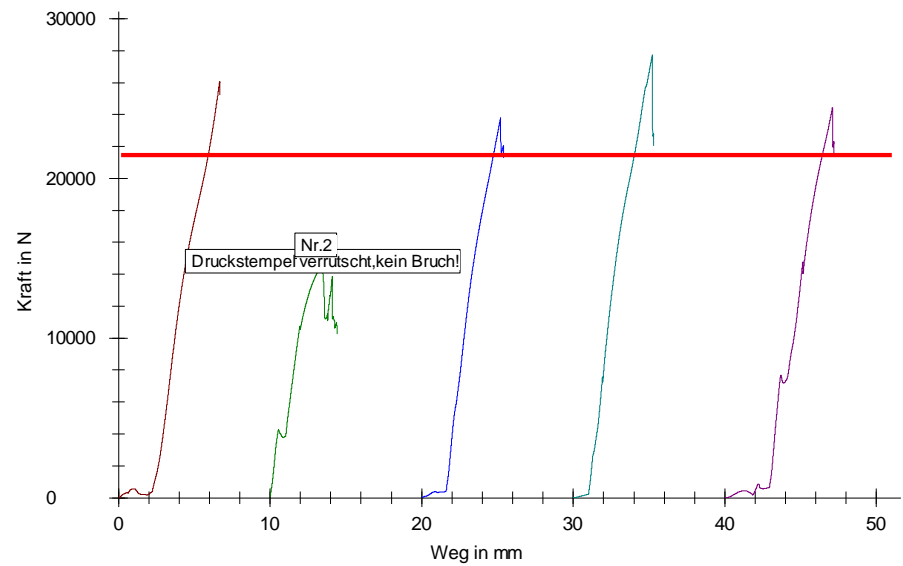
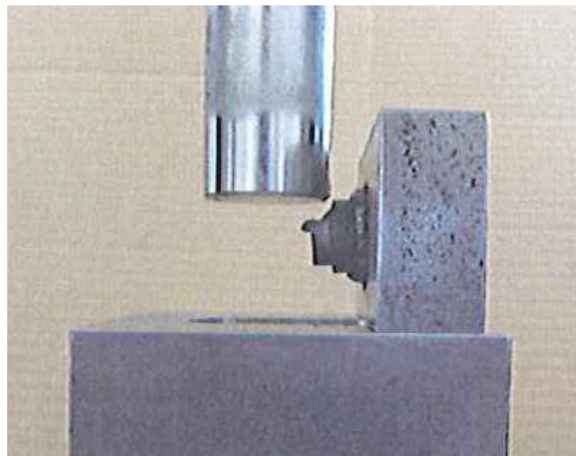


Shear Forces

TungStuds

Basic material

Manganese steel (1.3401)

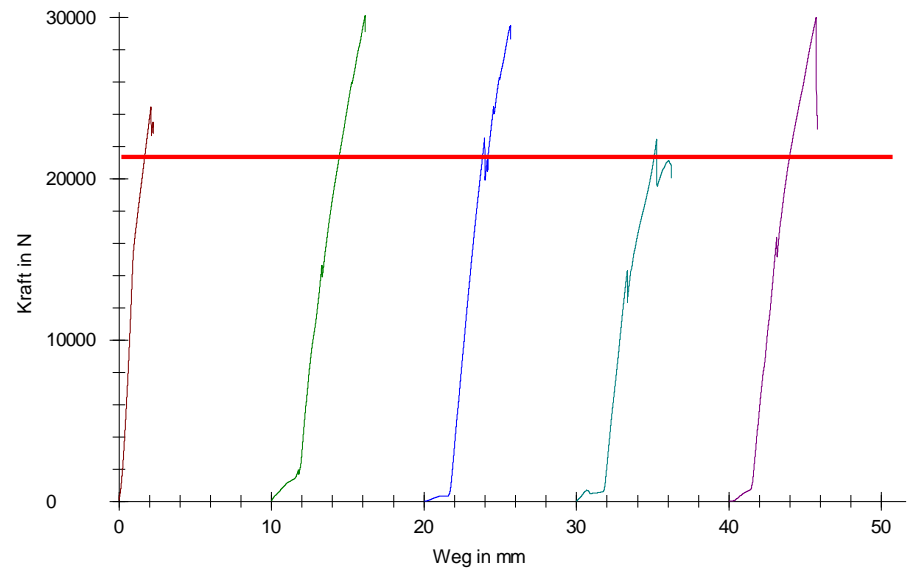
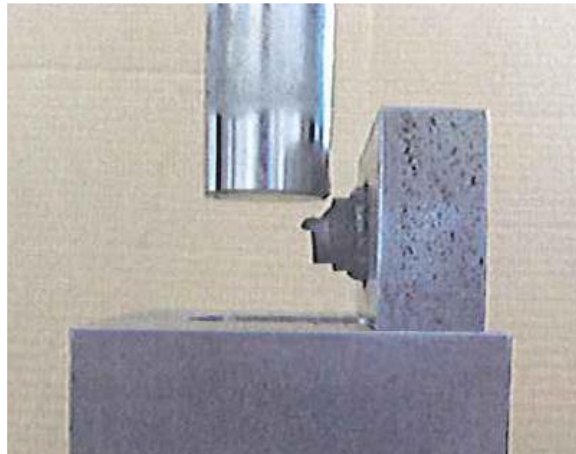


Shear Forces

TungStuds

Basic material

Hardox 450



TungStuds

Good

- Welding joint is closed
- Welding joint is blue-grey-shining
- Height of the TungStuds after being welded on is ok



TungStuds

Not quite good

- Current is too high
- Welding splash
- Height of the TungStud after being welded on is too short



TungStuds

Bad

- Current is too low
- Welding joint is matt and porous
- Height of the TungStuds after being welded on is too long



Applications

TungStuds

➤ Road Milling



Applications

TungStuds

➤ Road Milling



Applications

TungStuds

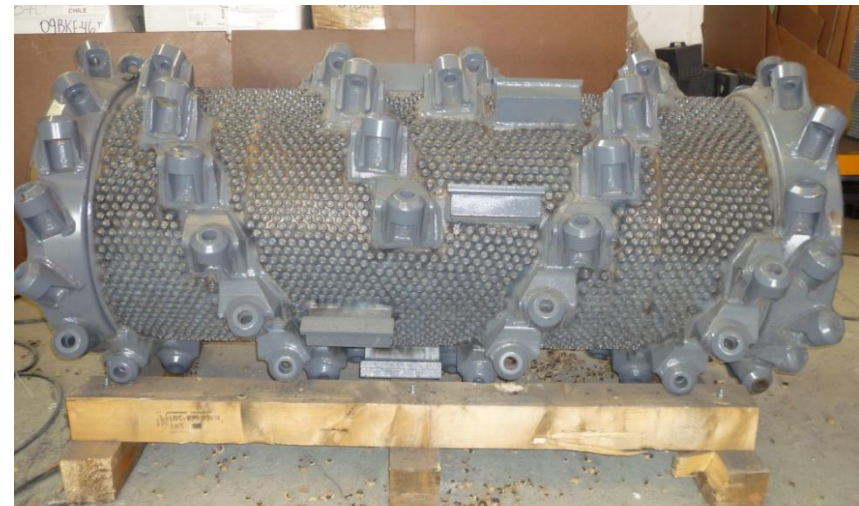
➤ Road Milling



Applications

TungStuds

➤ Milling Drums



Applications

TungStuds

➤ Bucket Excavators



Applications

TungStuds

➤ Augers



Applications

TungStuds

➤ Buckets



TungStuds

➤ Diaphragm Wall Cutter/ CSM



Applications

TungStuds

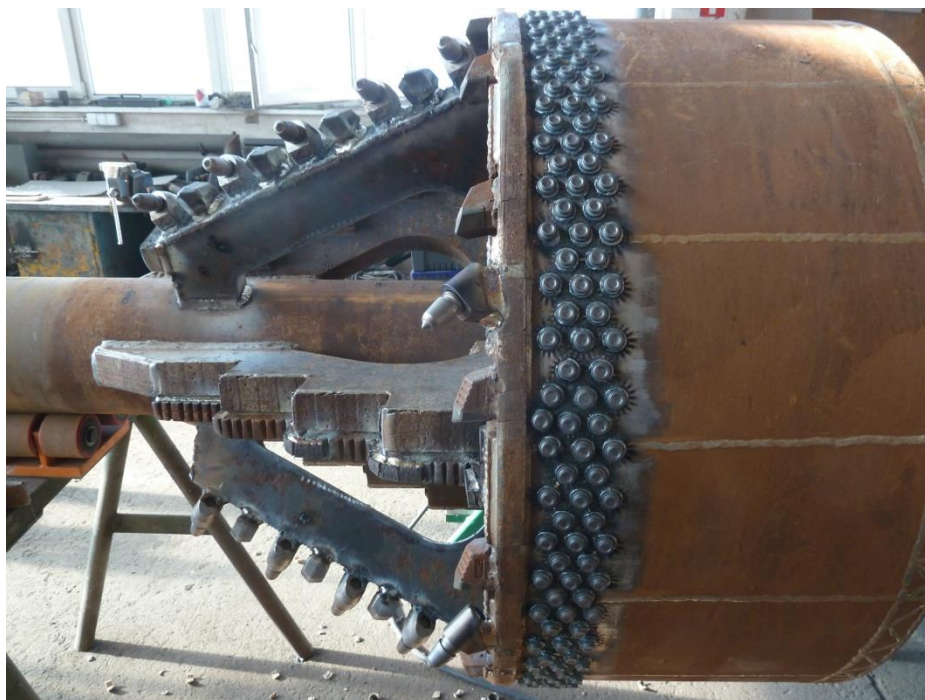
➤ Tunneling



Applications

TungStuds

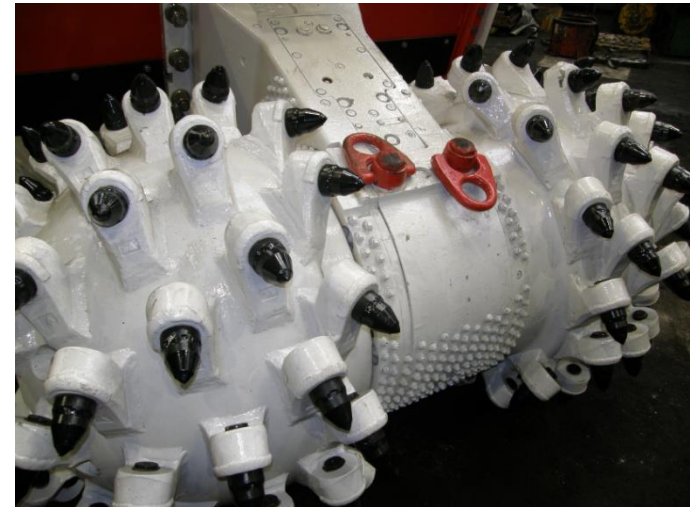
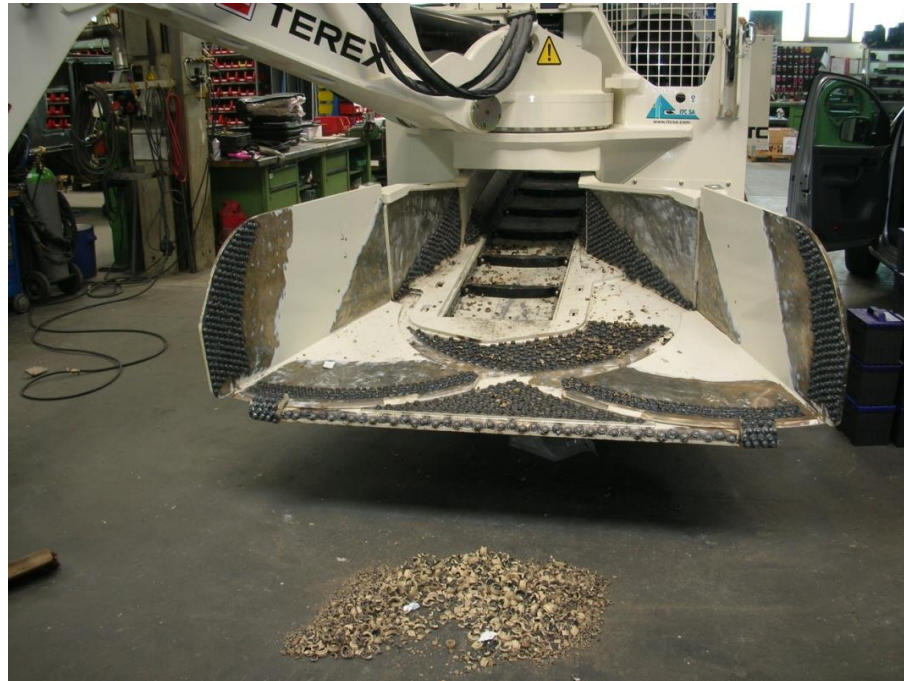
➤ Back Reamer



Applications

TungStuds

➤ Road Headers



Applications

TungStuds

➤ Mining Drums



Applications

TungStuds

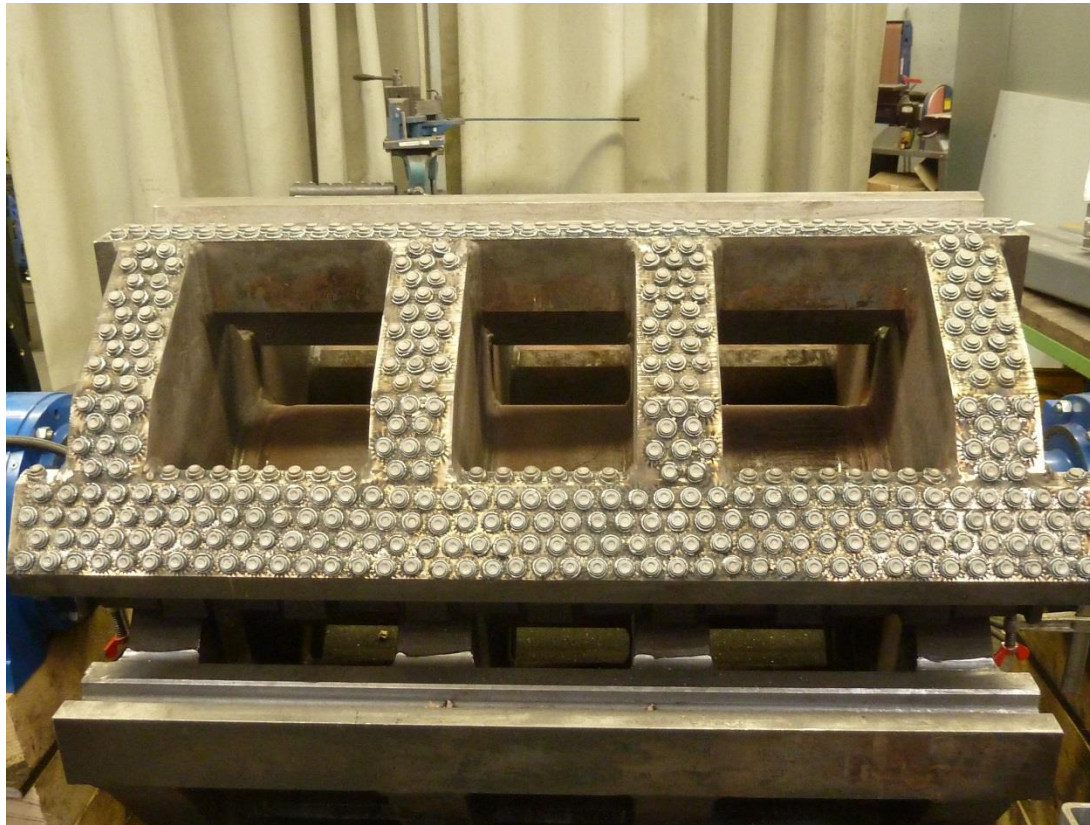
➤ Trenching Wheels



Applications

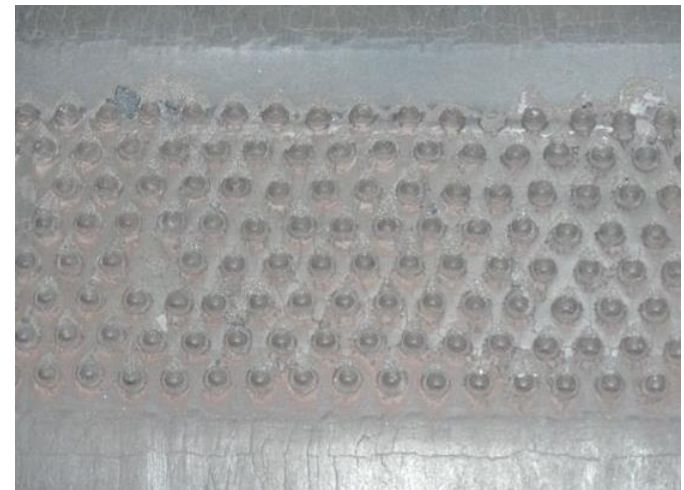
TungStuds

➤ Crushers



TungStuds

➤ Chutes



Applications

TungStuds

➤ Harvesters



If you have any different applications, or questions please send me details to tungstudsuk@gmail.com and we will be in touch. Thankyou

