BAUBLIES GROUP

COLIBRI:

PERFEKTES FINISH FÜR FILIGRANE WERKSTÜCKE

PERFECT FINISH FOR SOPHISTICATED WORKPIECES

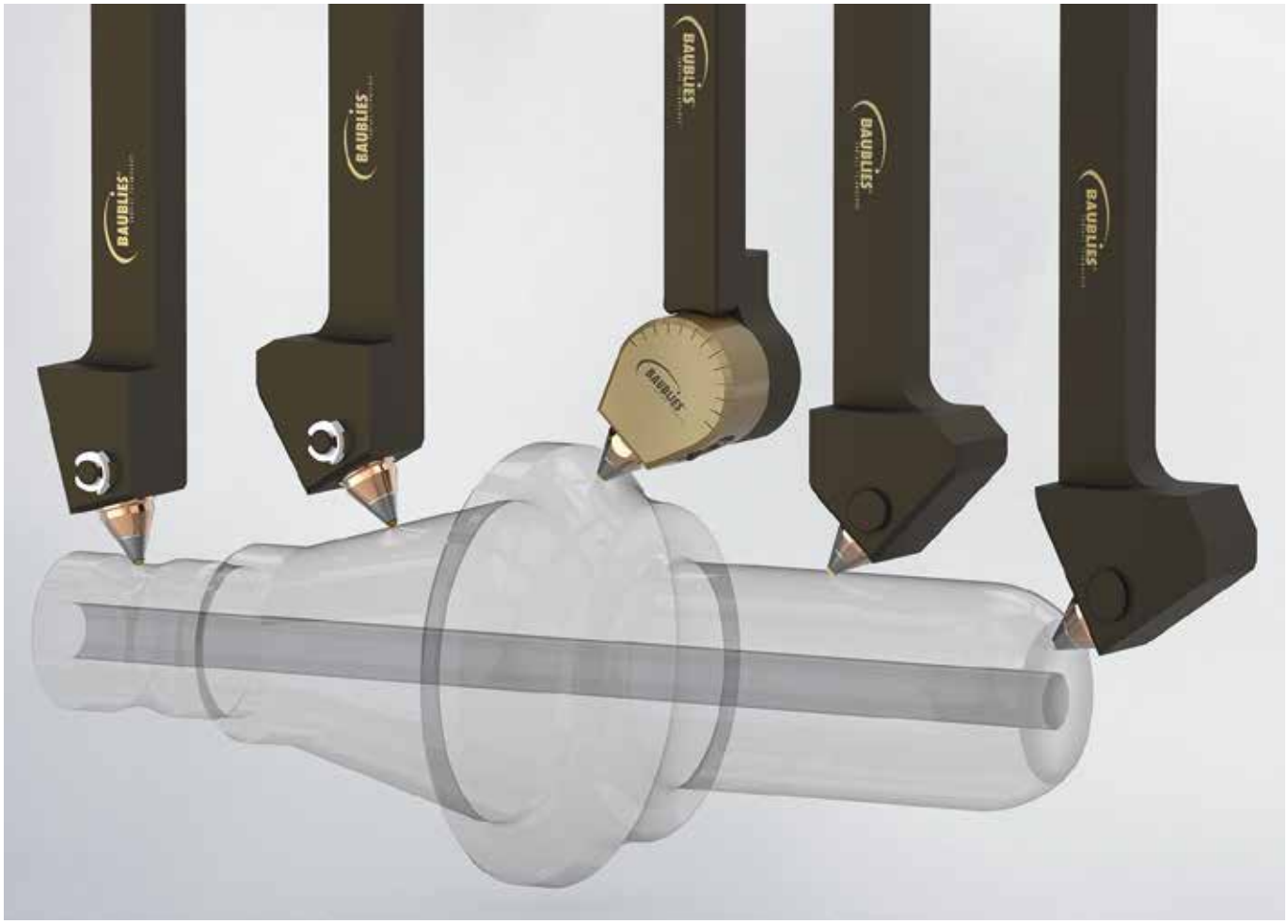
BAUBLIES®
SURFACE TECHNOLOGY

COLIBRI:

Die Diamant-Glättwerkzeuge im Kompakt-Format

COLIBRI:

The diamond burnishing tools in compact format



Kleiner, feiner und in exzellenter Baublies Qualität: Das sind die neuen Glättwerkzeuge, die wir speziell für filigrane Anwendungen entwickelt haben. In kompakter Form haben wir unser langjähriges Know-how im Diamantglätten für die Bearbeitung von Präzisionskleinteilen und dünnwandigen Werkstücken optimiert.

Small, fine and in excellent Baublies quality: these are the new burnishing tools that we have developed especially for filigree applications. We have optimized our many years of know-how in diamond burnishing for the machining of small precision parts and thin-walled workpieces in a compact form.

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COLIBRI:

Die Diamant-Glättwerkzeuge im Kompakt-Format

COLIBRI:

The diamond burnishing tools in compact format

ANWENDUNGSBEREICHE DER COLIBRI SERIE

Diamant-Glättwerkzeuge aus der Serie COLIBRI sind immer dann optimal geeignet, wenn bei filigranen Werkstücken die Rautiefe minimiert und gleichzeitig die Festigkeit erhöht werden soll.

Typische Anwendungsbereiche sind:

- Bauteile für Medizintechnik und optische Industrie
- Verbindungselemente für Luft- und Raumfahrt sowie Automobiltechnik
- Weitere Präzisionsteile, bei denen die Oberflächengüte eine herausragende Rolle spielt

RANGE OF APPLICATIONS OF THE COLIBRI SERIES

Diamond burnishing tools from the COLIBRI series are always optimally suitable when the peak-to-valley height of filigree workpieces is to be minimized and at the same time the strength is to be increased.

Typical application areas are:

- Components for medical devices and the optical industry
- Connecting elements for aerospace and automotive technology
- As well as other compact precision parts in which surface quality plays a crucial role

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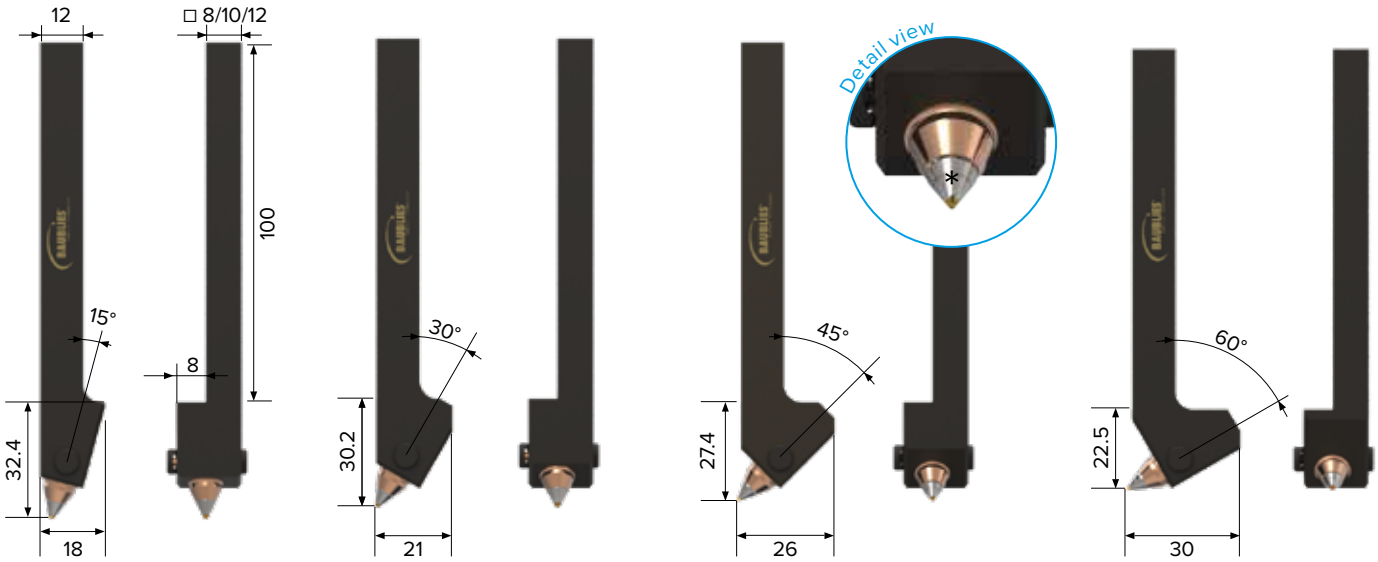
88-767-00-XX

COLIBRI: diamond burnishing tools for external machining



RH

*Burnishing diamond must be ordered separately

LH

Technical details	
Application	external shafts, contours and plane surfaces
Standard fixture	square shank 8 × 12, 10 × 12, 12 × 12 mm left or right hand

Options
- Tailor made fixtures according to specifications
- Tailor made diamond shape
- Assembly device

Application parameters	
Please note that this information represents standard values which must be adapted to the individual cases.	
Speed	up to 150 m/min
Feed rate	0.05–0.2 mm/rev
Workpiece allowance	up to 0.02 mm
Tool preload	up to 1 mm
Lubrication	emulsion or oil; filtration of the lubricant (< 40 µm) can improve the surface quality and the tool life
Pre-machining of workpiece	surface roughness (R_z) up to 15 µm
Suitable for hard machining	

ADVANTAGES

- Simple to use
- Compact design available for machines with limited tool space
- Can be adapted to all materials by means of four spring elements (included in delivery)
- Burnishing diamond radii from 0.4–5 mm available
- Burnishing diamond indexed for multiple machining
- Highest surface quality and hardening
- Universally applicable
- Ideal for contour machining
- For hard machining and thin-walled workpieces
- Tolerance compensation through spring-loaded design
- Changeable diamond insert
- Re-grinding of the burnishing diamond is possible
- Cost-effective / low investment

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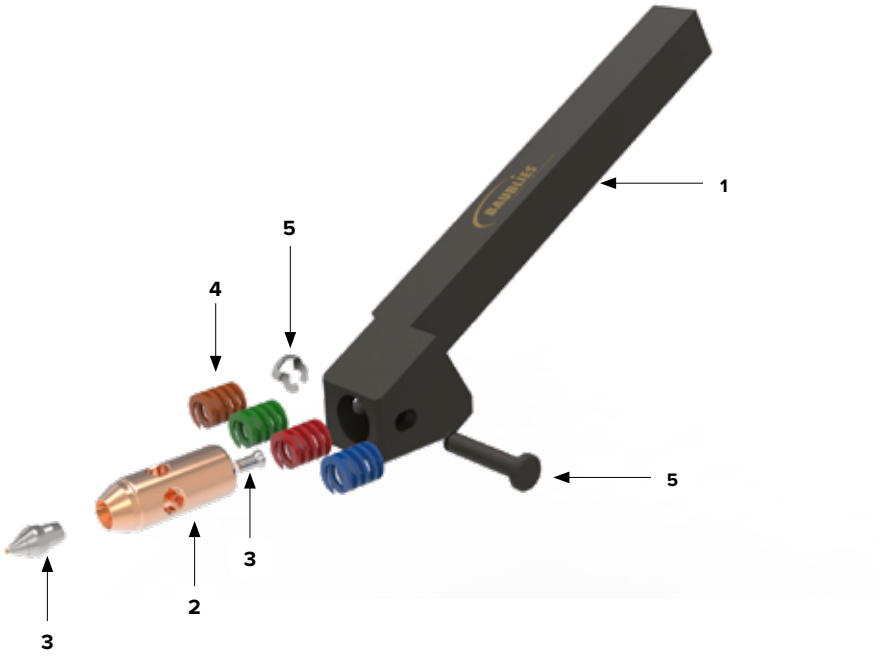
BAUBLIES® SURFACE TECHNOLOGY

Tool assembly/handling and replacing components

1 Fixture square shank
2 Diamond holder
3 Burnishing diamond insert with screw
4 Springs with different compression characteristics
5 Pin with locking ring

Assembly device (Option)



Diamond must be ordered separatly

REPLACING BURNISHING DIAMOND

Slightly preload burnishing diamond **(3)** (with assembly device). Remove pin with locking ring **(5)**. Declamp burnishing diamond. Remove or rotate burnishing diamond into the next position. During assembly pay attention to the position of the pin hole in the diamond holder **(2)**. Slightly preload burnishing diamond (with assembly device). Insert pin with locking ring **(5)**. Declamp diamond. **(3)**

EXCHANGE OF SPRINGS

Slightly preload burnishing diamond **(3)** (with assembly device). Remove pin with locking ring **(5)**. Disassemble the diamond holder **(2)** and change the desired spring **(4)**. Look at page 5 for spring selection.

TIPP

- The preload of the tool during burnishing should be in a range between 0.1 and 0.5 mm.
- If the position is not vertical to the workpiece surface the wearpoint of the burnishing diamond is excentric and then the burnishing diamond can be used 4 times by rotating it in steps of 90°.
- Coolant must be used at any time and avoid interrupted cuts.
- If the burnishing diamond is not badly damaged (cracks) regrinding is possible.

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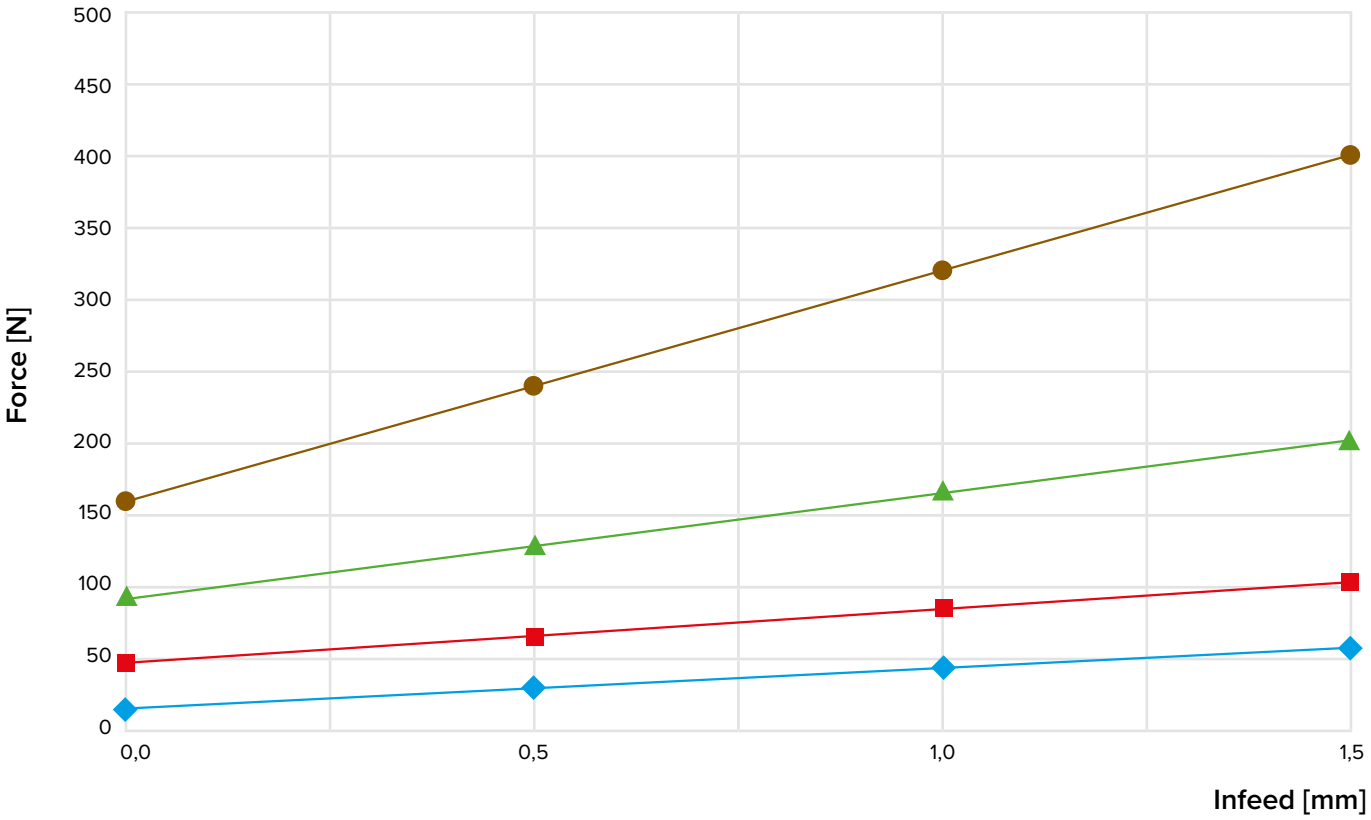
Information Classification Force – Spring Deflection

Force – Spring Deflection



Recommended Applications According to Material Properties		
Spring colour	**Force**	**Up to a tensile strength of**
Blue	25 – 60 N	400 MPa [N/mm^2]
Red	40 – 100 N	1250 MPa [N/mm^2] **or** HRC 40
Green	85 – 210 N	HRC 64
Brown	160 – 400 N	**Use only in special applications**

Depending on the material properties the use of an according spring is recomended. The table should serve as a guideline. Usually an infeed of up to 0,5 mm is used. If a higher force is required a stronger spring should be used.

EXAMPLE:

If the red spring is installed, an in-feed at the workpiece of 0.25 mm corresponds to a force of approximately 50 N.

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COLIBRI-VARIABEL:

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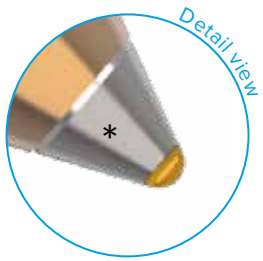
PERFECT FINISH FOR SOPHISTICATED WORKPIECES

BAUBLIES®
SURFACE TECHNOLOGY

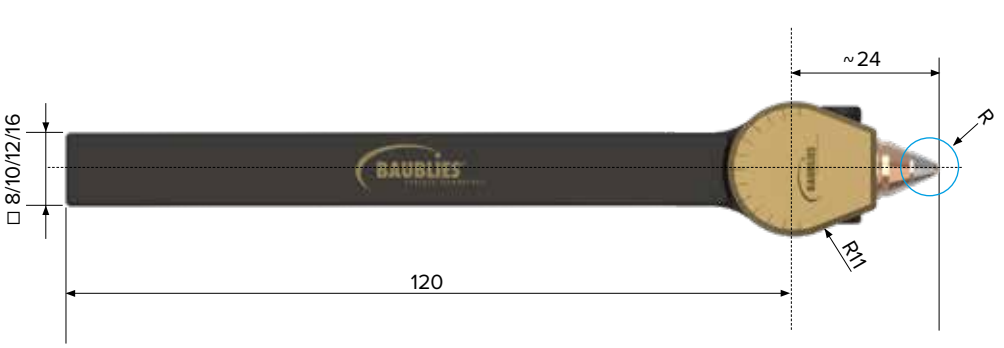
BAUBLIES GROUP

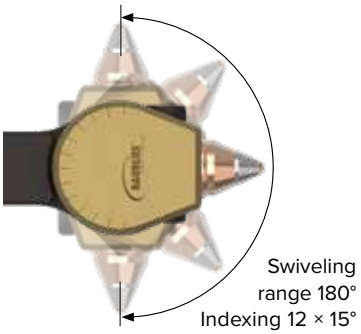
88-766-00-XX

COLIBRI diamond burnishing tools for external use, variable



*Burnishing diamond must be ordered separately





Swiveling range 180°
Indexing 12 × 15°

Technical details	
Application	external shafts, contours, plane surfaces and thin walled workpieces
Standard fixture	square shank 8/10/12/16
Swiveling range	180°
Indexing	12 × 15°

Options

- Tailor made fixtures according to specifications
- Tailor made diamond shape
- Assembly device

Application parameters	
Please note that this information represents standard values which must be adapted to the individual cases.	
Speed	up to 150 m/min
Feed rate	0.05–0.2 mm/rev
Workpiece allowance	up to 0.02 mm
Tool preload	up to 1 mm
Lubrication	emulsion or oil; filtration of the lubricant (< 40 µm) can improve the surface quality and the tool life
Pre-machining of workpiece	surface roughness (R_z) up to 15 µm
Suitable for hard machining	

ADVANTAGES

- Highest surface quality and hardening
- Universally applicable
- Simple to use
- Ideal for contour machining
- For hard machining and thin-walled workpieces
- Compact design available for machines with limited tool space
- Tolerance compensation through spring-loaded design
- Can be adapted to all materials by means of four spring elements (included in delivery)
- Changeable diamond insert
- Diamond radii from 0.4–5 mm available
- Diamond indexed for multiple machining
- Re-grinding of the diamond is possible
- Cost-effective/low investment

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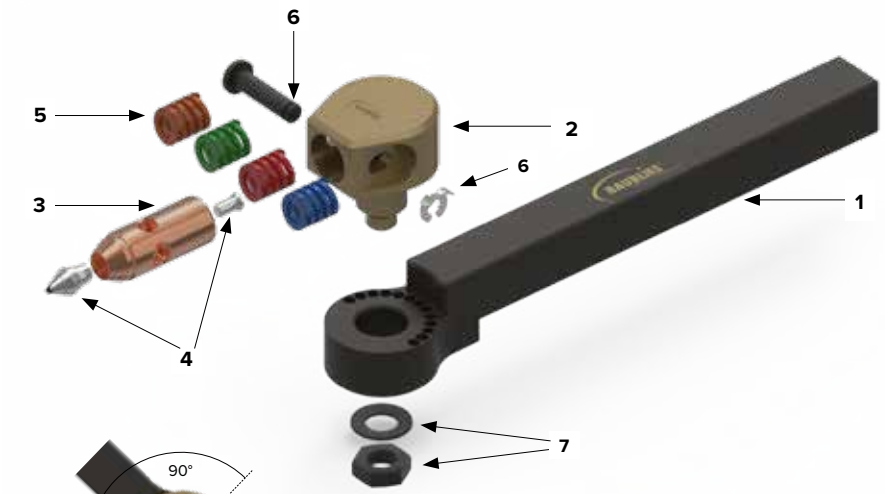
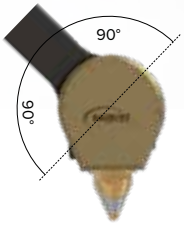
BAUBLIES® SURFACE TECHNOLOGY

Tool assembly/handling and replacing components

1 Fixture square shank
2 Swiveling head
3 Diamond holder
4 Diamond insert with screw
5 Springs with different compression characteristics
6 Pin with locking ring
7 Nut + disc



Assembly device (Option)



Diamond must be ordered separatly

ADJUSTING THE ANGLE

Loosen nut **(7)**. Lift swiveling head **(2)**. Set required position of swiveling head **(2)**. Tighten nut **(7)** (max. torque 15 Nm).

REPLACING BURNISHING DIAMOND

Slightly preload burnishing diamond **(4)** (with assembly device). Remove pin with locking ring **(6)**. Declamp burnishing diamond. Remove or rotate burnishing diamond into the next position. During assembly pay attention to the position of the pin hole in the diamond holder **(3)**. Slightly preload burnishing diamond (with assembly device). Insert pin with locking ring **(6)**. Declamp burnishing diamond **(4)**.

EXCHANGE OF SPRINGS

Slightly preload diamond **(4)** (with assembly device). Remove pin with locking ring **(6)**. Disassemble the diamond holder **(3)** and change the desired spring **(5)**. Look at page 5 for spring selection.

TIP

- The preload of the tool during burnishing should be in a range between 0.1 and 0.5 mm.
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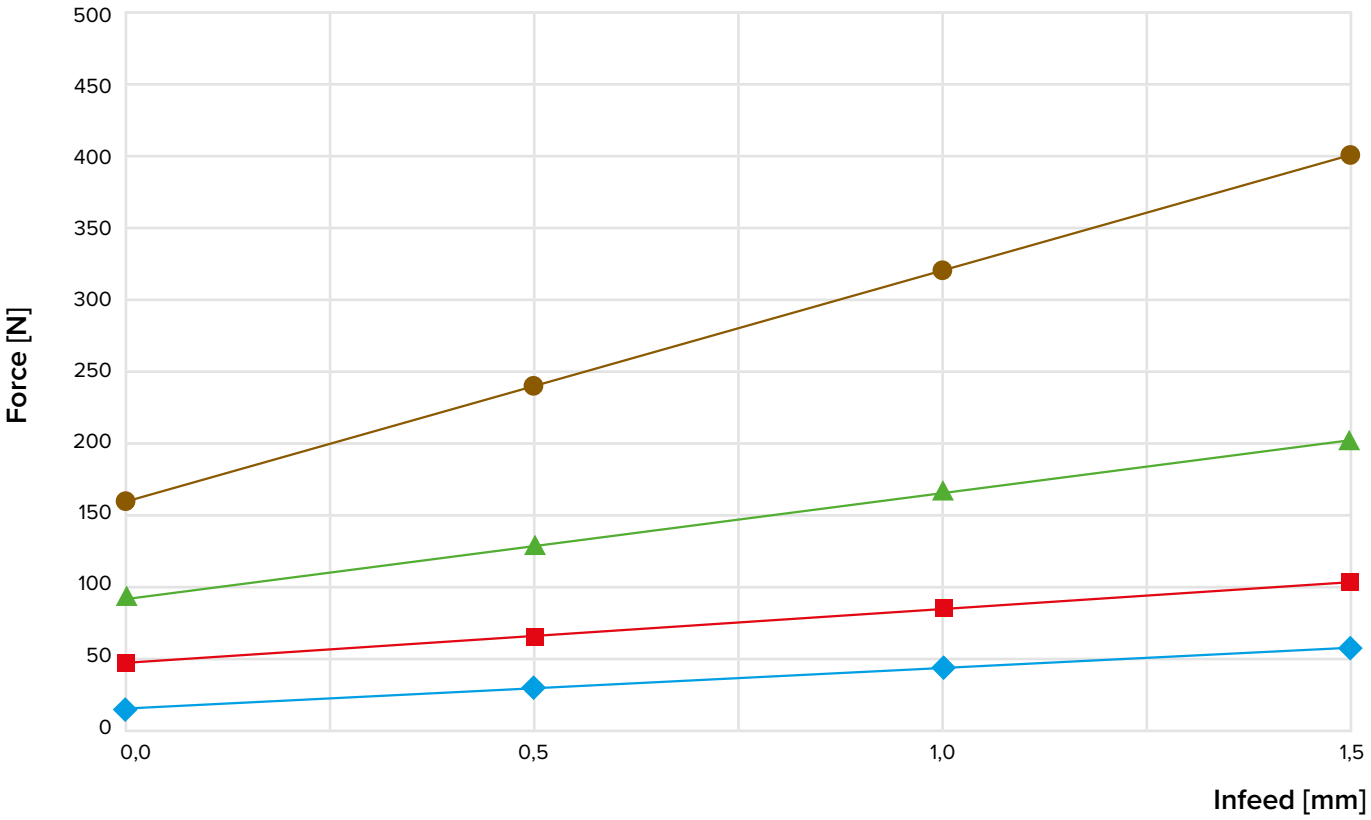

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