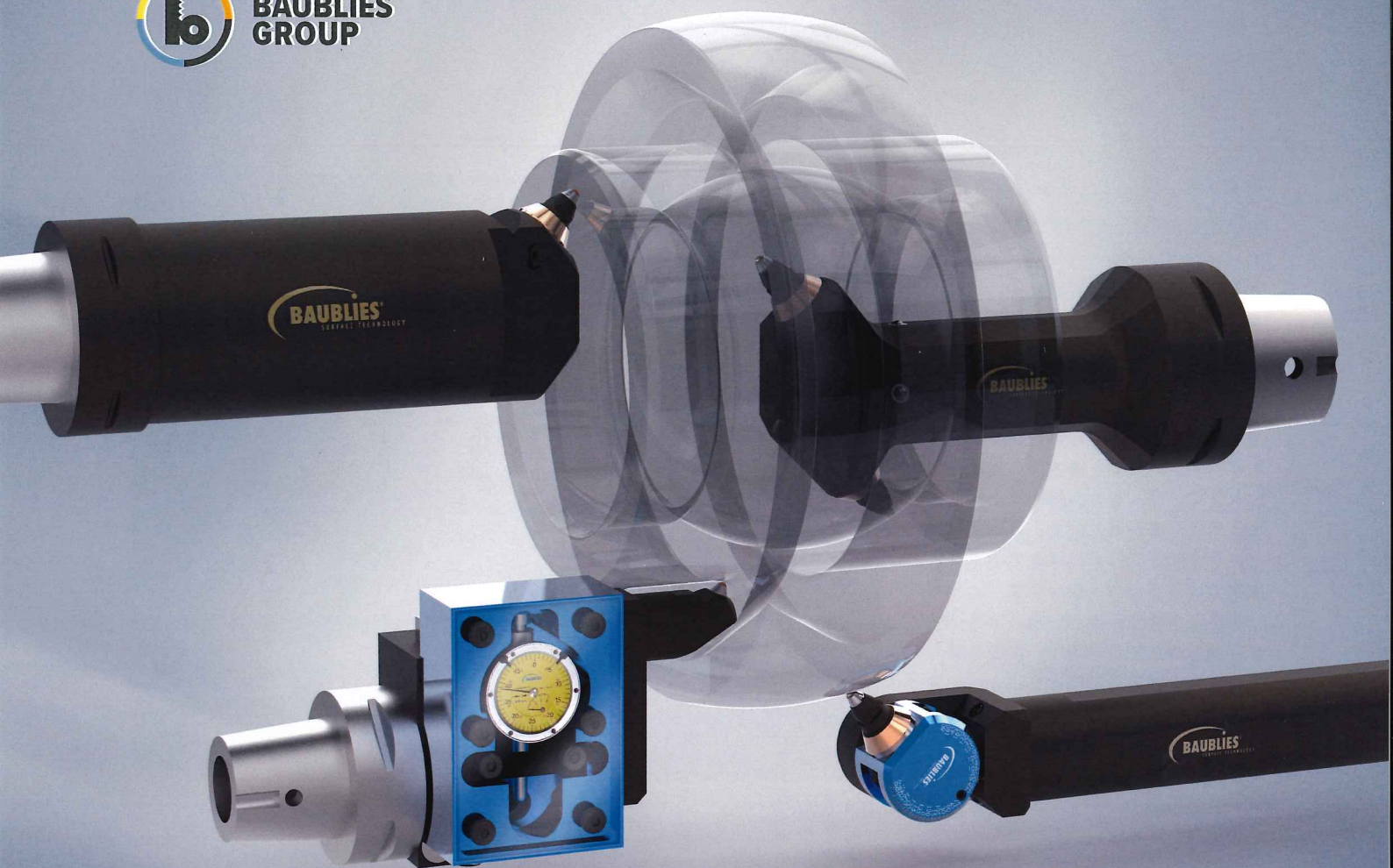




HARD AND VERSATILE

数秒で理想的な表面仕上げ

ダイヤモンドバニッシングツール



ダイヤモンドバニッシングツール： 理想的な表面仕上げのために

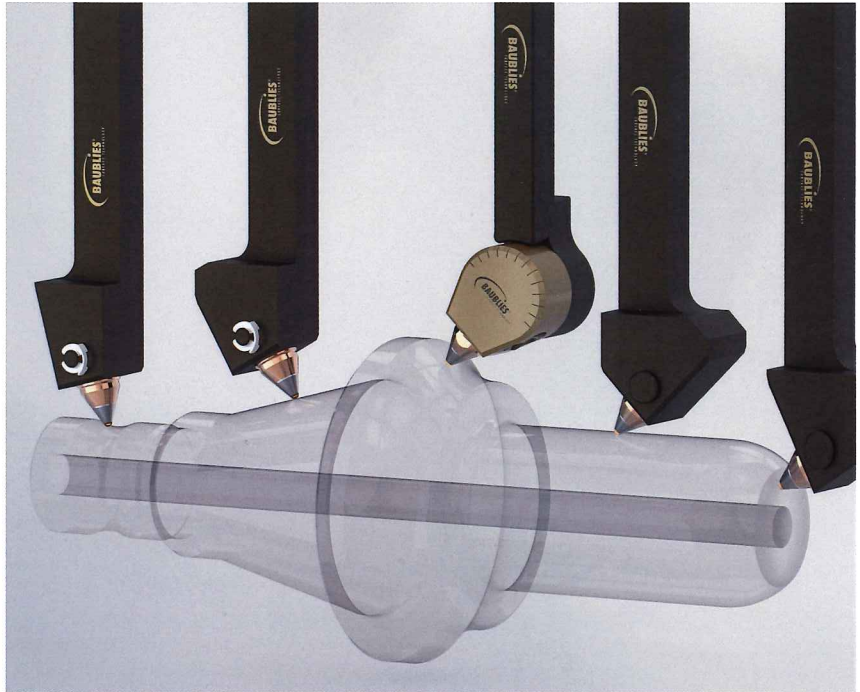
ダイヤモンドバニッシングツールによって、HRC60以上の高硬度材の加工が可能になるなど、バニッシング・テクノロジーの可能性が広がりました。加工においては、高精度かつマイクロポリッシュで仕上げられたダイヤモンドがワークの表面を滑るように進んでいきます。ワークの表層部にかかる圧力は素材の降伏点を超え、 μm 単位でワーク表面の凹凸が均されていきます。従来のローラバニッシング加工に比べ、ワークとの接点が小さい為、より小さな圧力で加工が可能で、加工点以外への影響を最小限に抑えることが出来ます。

バブリースダイヤモンドバニッシングツールは、対応できる硬度や径の幅が広がり、従来のバニッシングツールでは不可能とされていた素材や形状のワークの加工が可能になっています。

ダイヤモンドバニッシングツールであれば、内径、外径問わず、あらゆる輪郭に対して、バニッシング、ディープバニッシングをおこなうことができます。

特長

- 高い信頼性
- 最高の表面品質
- 表層部の硬度の向上
- HRC 60 以上の高硬度材の加工が可能
- 油圧ユニットなど、追加装置も必要なし
- 耐摩耗性や耐腐食性の向上
- 疲労限界の拡大



コリブリシリーズ

コリブリシリーズ： 高度なワークに最適な仕上げ

コリブリシリーズは、バブリースが特に繊細なワークのために開発した全く新しいバニッシングツールです。我々の長年のダイヤモンドツールのノウハウを結集し、薄肉で小さなワークの加工用のツールを完成させたのです。

ダイヤモンドツールが適した分野

- 医療系や光学系産業分野
- 航空宇宙産業や自動車産業向け接続部品等
- その他、高精度で表面の品質が大きな役割を果たしている部品



コリブリシリーズ



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ダイヤモンドバニッシングツール

高硬度材や複雑形状ワークに：
面粗度向上及び表面硬化



小さなダイヤが 大きな効果に

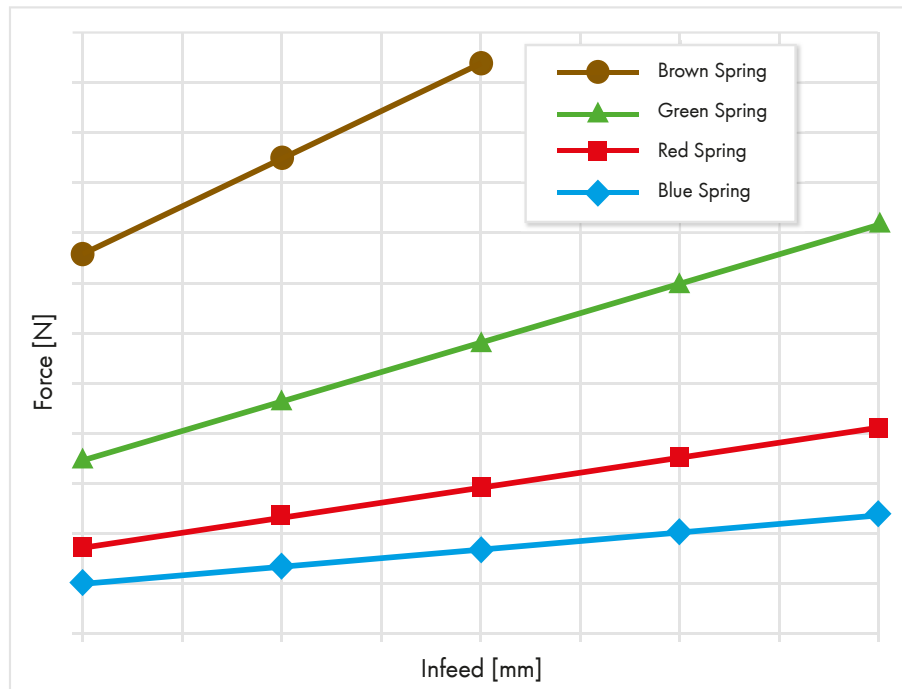
ダイヤモンドローラーバニシングツールは、バウブリーズの製品ラインナップの中でも特別なものです。約60HRCまでの高硬度材でもローラーバニシングが可能で、ローラーバニシング技術の応用範囲を広げます。

このプロセスでは、高精度のマイクロポリス加工ダイヤモンドが表面を滑ります。材料の降伏点を超えるとすぐに、ワーク表面のプロファイルピークが μm の範囲で隣接する凹部に流れ込みます。ローラーによる加工に比べて、ワークピースとダイヤモンドの接触面積が非常に小さいため、加工に負荷の影響を抑えた塑性が可能です。

ローラーバニシングとダイヤモンドローラーバニシング

Surface roughnesses of under $R_z\ 1\mu\text{m}$, short cycle times and low investments with fast amortization make chipless roller burnishing or diamond roller burnishing a high-quality, cost effective alternative to any cutting process. In addition, the results achieved are impressive thanks to

- maximum process reliability
- hardened boundary layers
- increased fatigue strength
- larger contact area ratios due to plateau formation
- greater surface resistance to wearing and corrosion
- shifting of the material fatigue limits
- reduction of coefficients of sliding friction
- environmental friendliness due to a lack of waste products.



Spring load-deflection curve for Diamond burnishing tools – Classification Force – Spring Deflection

Diamond roller burnishing tools: for maximum precision

Baublies diamond roller burnishing tools advance into hardness and diameter areas in which conventional roller burnishing tools can not be used.

Baublies diamond roller burnishing tools can be designed extremely filigree, thus enabling the realization of internal contours from a diameter of 10 mm and micro-cone machining from approx. 0.1 mm. In this way virtually all contours – internally and externally – can be roller-burnished and deep-rolled.

Minimum machining forces protect the workpiece and make Baublies diamond roller burnishing tools the first choice for thin-walled components.

New combination tool reduces costs

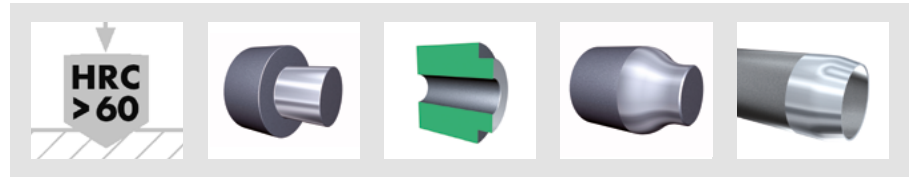
Save time and money, for example when machining connecting rod eyes. The new Baublies combination tool makes it possible with just one clamping: First the connecting rod eye is turned, then the tool is deflected, and on the return stroke the diamond roller burnishes and deep-rolls the surface in the μm range. Setup times are completely eliminated.

Advantages included

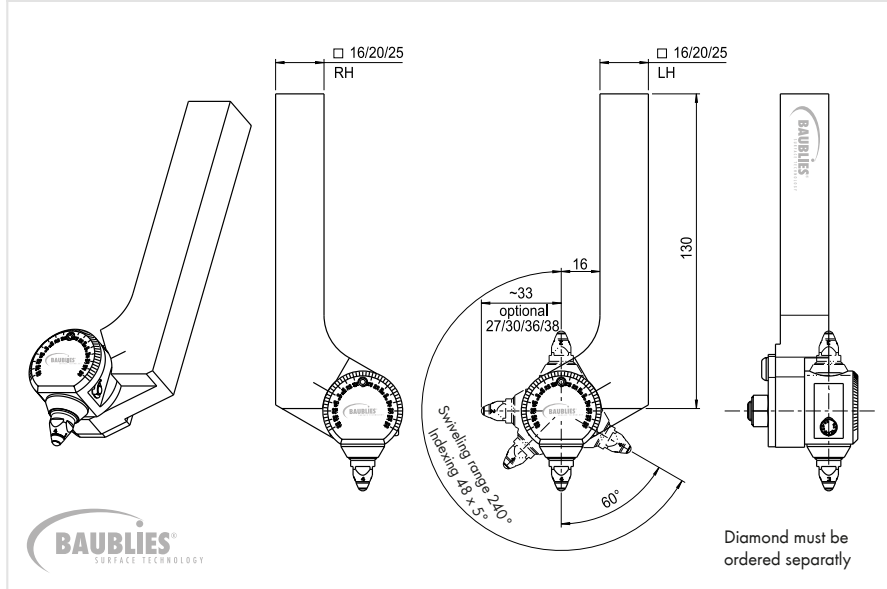
- top surface qualities
- smoothing harder surfaces than with conventional roller burnishing
- no need for additional equipment such as hydraulic units
- an unlimited diversity of individual solutions
- the multifunctionality of the tool



Variable diamond burnishing tool for external use



Technical details: Variable diamond burnishing tool for external use



Diamond burnishing tool for external use

Application	shafts and external contours
Standard fixture	square shank 16/20/25 mm left or right hand
Swiveling range	240°
Indexing	48 x 5°

Options

- Fixtures VDI, HSK etc.
- Tailor made diamond shape
- Assembly device

Application parameters

Please note that this information represents standard values which must be adapted to the individual cases.

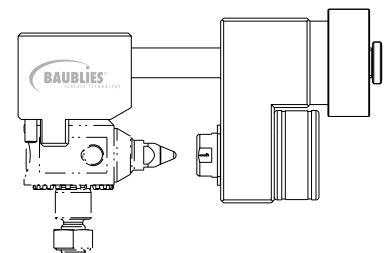
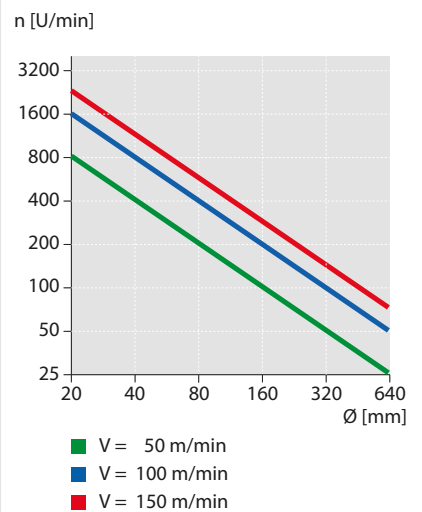
Speed	up to 150 m/min
Feed rate	0.05 – 0.2 mm/rev
Workpiece allowance	up to 0.02 mm
Tool pre-load	up to 1 mm
Lubrication	emulsion or oil; filtration of the lubricant (< 40 µm) can improve the surface quality and the tool life
Pre-machining of workpiece	surface roughness (Rz) up to 15 µm
Suitable for hard machining	

Variable diamond burnishing tools for external use

are non-intrinsic tools for smoothing and work hardening of shafts and external contours. Due to the swiveling diamond these tools are quite versatile.

Advantages

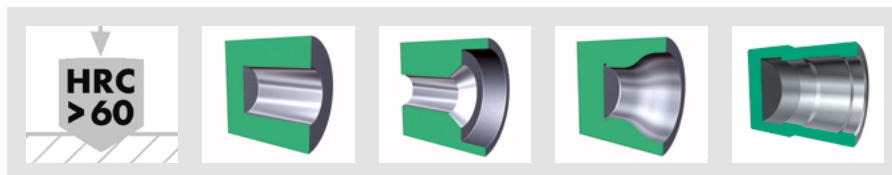
- universally useable
- suitable for hard machining and thin walled workpieces
- slim design enables the application in small spaced machine tools
- spring loaded diamond
- changeable diamond insert
- regrounding of the diamond is possible



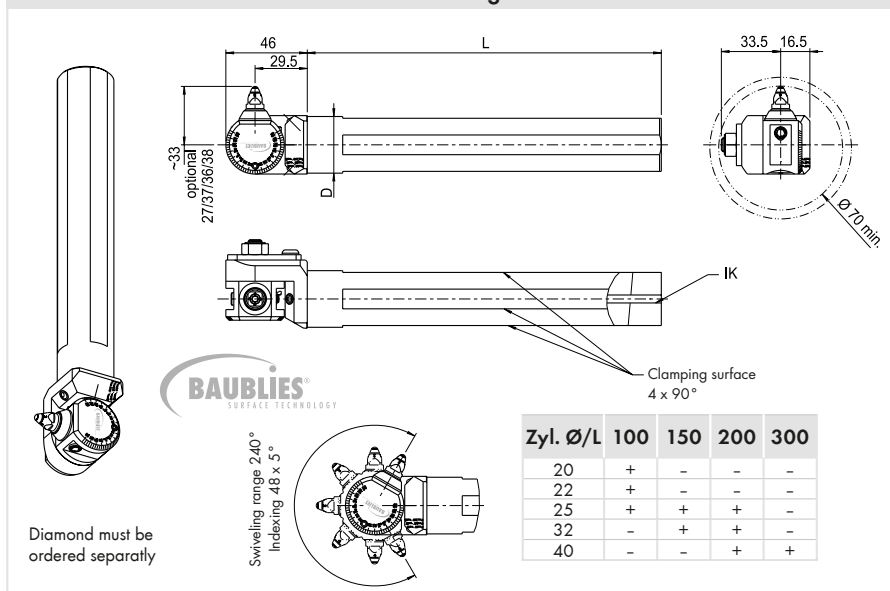
Assembly device



Variable diamond burnishing tool for internal use



Technical details: Variable diamond burnishing tool for internal use



Variable diamond burnishing tool for internal use

Application	holes and internal contours
Standard fixture	cylindrical shank Ø 20/22/25/32/40 mm
Swiveling range	210°
Indexing	42 x 5°

Options

- Fixture VDI, HSK etc.
- 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 pre-load	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 (Rz) up to 15 µm
Suitable for hard machining	

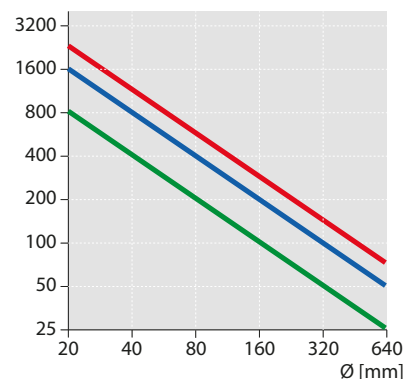
Variable diamond burnishing tools for internal use

are non-intrinsic tools for smoothing and work hardening of shafts and internal contours. Due to the swiveling diamond these tools are quite versatile.

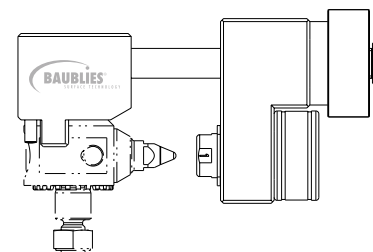
Advantages

- universally useable
- suitable for hard machining and thin walled workpieces
- slim design enables the application in small spaced machine tools
- spring loaded diamond
- changeable diamond insert
- regrinding of the diamond is possible

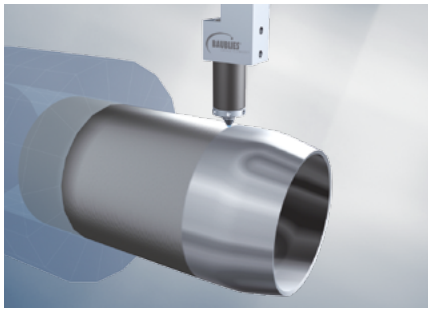
n [U/min]



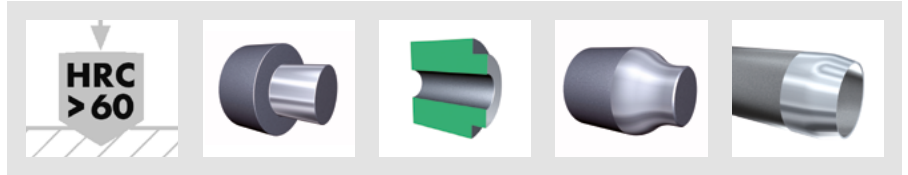
- V = 50 m/min
- V = 100 m/min
- V = 150 m/min



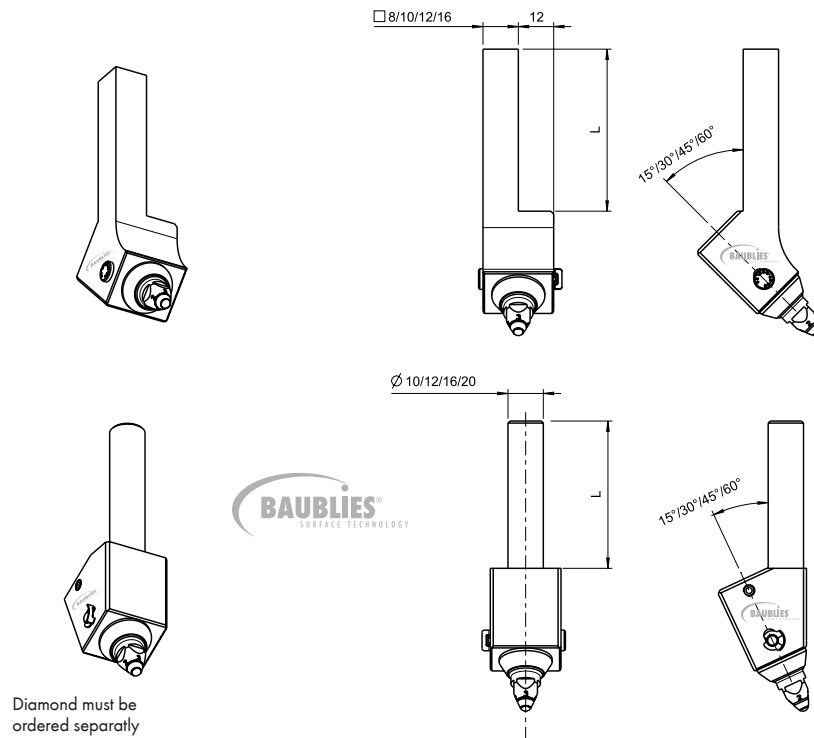
Assembly device



Diamond burnishing tool for external use, compact



Technical details: Diamond burnishing tool for external use, compact



Diamond burnishing tool for external use, compact

Application	shafts and external contours
Standard-fixture	square shank, left or right hand, cylindrical shaft

Options

- Fixture as required
- 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 pre-load	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 (Rz) up to 15 µm
Suitable for hard machining	

Diamond burnishing tools for external use are non-intrinsic tool for smoothing and work hardening of holes and external contours.

Advantages

- universally useable
- suitable for hard machining and thin walled workpieces
- slim design enables the application in small spaced machine tools
- spring loaded diamond
- changeable diamond insert
- regrinding of the diamond is possible

