


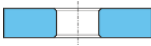

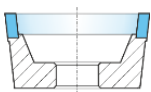


## INTERNAL GRINDING

# INTERNAL GRINDING

Type	Sketch	Details	Stock	Page
INFORMATION		Diameter, rigidity of the shank, grinding stroke, special executions		3-04
		As small as a proboscis of a mosquito!		3-05
1A1W incl. 1A1WP		ø 0.2 - 2.5 mm metal bond, diamond	stock	3-06
		ø 3.0 - 15.0 mm metal bond, diamond	stock	3-07
		ø 0.3 - 2.5 mm metal bond, CBN	stock	3-08
		ø 3.0 - 15.0 mm metal bond, CBN	stock	3-09
		ø 3.0 - 15.0 mm resin ceramic bond, diamond	stock	3-10
		ø 3.0 - 15.0 mm resin ceramic bond, CBN	stock	3-11
		ø 4.0 - 18.0 mm vitrified bond, CBN	stock	3-12
		ø 6.0 + 6.5 mm, for groove grinding resin hybrid bond, diamond		3-13
		ø 4.0 - 20.0 mm, for blind holes, surface grinding, sharp edges resin ceramic bond, diamond	stock	3-14
		ø 4.0 - 20.0 mm, for blind holes, surface grinding, sharp edges resin ceramic bond, CBN	stock	3-15
1E1W		ø 3.0 - 12.0 mm, 60° und 90° profile grinding pins metal bond, diamond	stock	3-16
		ø 3.0 - 12.0 mm, 60° und 90° profile grinding pins metal bond, CBN	stock	3-17

# INTERNAL GRINDING

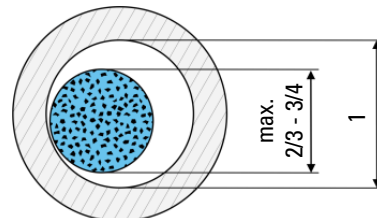
Type	Sketch	Details	Stock	Page
1A1		ø 10 - 50 mm resin ceramic bond, <b>diamond</b>	stock	3-18
		ø 10 - 50 mm resin ceramic bond, <b>CBN</b>	stock	3-19
1A8		ø 8 - 40 mm vitrified bond, <b>CBN</b>	stock	3-20
1A1				
11B9		ø 15 - 40 mm, for blind holes, surface grinding and sharp edges resin ceramic bond, <b>diamond</b>		3-21
		ø 15 - 40 mm, for blind holes, surface grinding and sharp edges resin ceramic bond, <b>CBN</b>	stock	3-21
Custom-made tools		We manufacture the optimal grinding pin for your individual task within a very short time. It's one of our specialties.		3-22

# INFORMATION

One of our unparalleled strengths is the uncompromising sintered quality of our grinding pins. Here are a few basic information that might be useful:

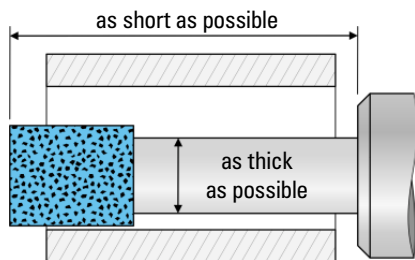
## Diameter

The diameter of the internal grinding tool should not exceed  $\frac{2}{3}$  to  $\frac{3}{4}$  of the bore size, since the pressure due to the contact zone would otherwise get too high, which could lead to geometrical deviations.



## Shank

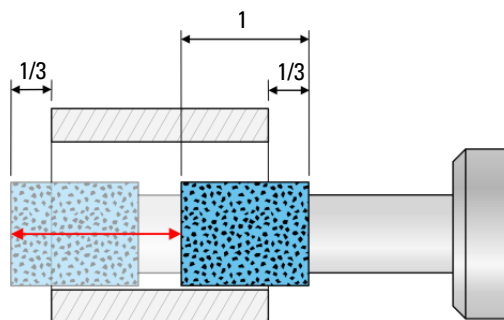
For our grinding pins we generally use shanks/quills made out of specially hard steel. Such a shank is sufficient for most grinding tasks, which is why we offer it by default. We do, however, also manufacture grinding pins with shanks made of heavy metal or tungsten carbide, if particular high rigidity is required.



The rigidity can be optimised more simply with a shank as thick as possible, a relief as short and thick as possible as well as by reducing the projection length to a minimum. The rigidity of the shank increases by a factor of about **16** by doubling the thickness of the shank, by a factor of approx. **8** by halving the projection length, but only by a factor of about **2.6** by choosing carbide over steel.

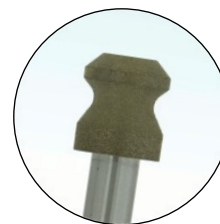
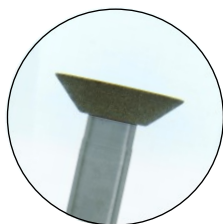
## Grinding stroke

To avoid geometrical deviations, the grinding stroke should be adjusted so that the grinding pin does not overtravel the work-piece with more than  $\frac{1}{3}$  of its own width.



## Special executions

On the following pages, you will find grinding pencils and small grinding wheels that we offer off-the-shelf. On top of that we also manufacture internal grinding tools according to your individual specifications and custom tools that we develop together for your special grinding task. It's one of our specialities. Here a small selection:





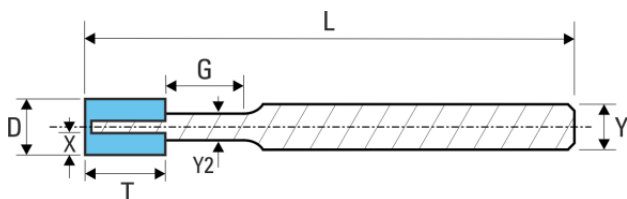
## Small is the new big.

The tiniest measurements, greatest precision and longest service life: that's what Haefeli diamond and CBN grinding pencils are built for. At a diameter of just 0.18 mm (sintered quality!), our very smallest micro grinding tool rivals the size of a mosquito's proboscis. And it's by no means any less persistent. That's why for over 70 years our customers have counted on the uncompromising quality of Haefeli, for dimensions great and small. Itching to see it in action? We'd love to give you a demonstration.

# 1A1W Diamond

## ø 0.2 up to 2.5 mm - metal bond

Grinding pins with the smallest diameters, maximum tool life and profile accuracy. Excellent grinding performance to the very last grain when grinding carbide, technical ceramic and glass. Universally applicable, on lathes as well as with high frequency and precision spindles. Suitable for ultrasonic assisted grinding. Very good with dry grinding, if ideal grain protrusion is maintained with regenerators (→ 4-02). Excellent with wet grinding.



### Stock articles

Abrasive layer			Steel shank (hard)		Conc.	Bond	Grit size			Your notes
D	T	X	Y x L	Y2 x G			coarse	standard	finish	
ø 0.2	x	0.5	ø 3 x 40	ø 0.15 x 0.5	C 145	M4000	-	D 26	-	
ø 0.3	x	0.8		ø 0.2 x 0.8			-	D 37	-	
ø 0.4	x	1.0		ø 0.3 x 1.0			-	D 37	-	
ø 0.5	x	1.5		ø 0.4 x 1.5			-	D 46	-	
ø 0.6	x	2.0		ø 0.5 x 2.0			-	D 64	-	
ø 0.7	x	2.0		ø 0.5 x 2.0			-	D 64	-	
ø 0.8	x	2.5		ø 0.6 x 2.5			-	D 76	-	
ø 0.9	x	2.5		ø 0.7 x 2.5			-	D 76	-	
ø 1.0	x	2.5		ø 0.8 x 2.5			D 107	D 91	D 41	
ø 1.2	x	3.0		ø 0.9 x 3.0			D 107	D 91	-	
ø 1.5	x	3.5		ø 1.2 x 3.5			D 107	D 91	D 41	
ø 1.8	x	4.0		ø 1.5 x 4.0			-	D 91	-	
ø 2.0	x	4.0		ø 1.7 x 4.0			D 126	D 91	D 41	
ø 2.2	x	4.5		ø 1.8 x 4.5			-	D 91	-	
ø 2.5	x	5.0		ø 2.1 x 5.0			D 126	D 91	D 41	

We also manufacture grinding pins with different parameters or grit sizes as well as grinding tools that have been designed for your specific grinding task. We have access to more than 400 bonds that we have developed ourselves, many of which are metal bonds.

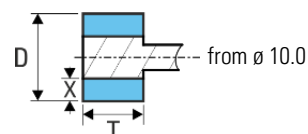
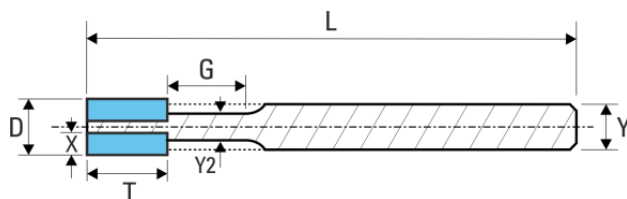
# 1A1W Diamond

## ø 3 up to 15 mm - metal bond

Grinding pins with the smallest diameters, maximum tool life and profile accuracy.

Excellent grinding performance to the very last grain when grinding carbide, technical ceramic and glass. Universally applicable, on lathes as well as with high frequency and precision spindles.

Suitable for ultrasonic assisted grinding. Very good with dry grinding, if ideal grain protrusion is maintained with regenerators (→ 4-02). Excellent with wet grinding.



### Stock articles

Abrasive layer			Steel shank (hard)		Conc.	Bond	Grit size			Your notes
D	T	X	Y x L	Y2 x G			coarse	standard	finish	
ø 3.0	x	6.0	0.8	ø 2.5 x 6.0	C 145	M4000	D 126	D 91	D 41	
ø 3.5	x	6.0	1.0	ø 2.8 x 6.0			-	D 91	D 41	
ø 4.0	x	6.0	1.0	-			D 151	D 91	D 41	
ø 5.0	x	6.0	1.5	-			D 151	D 91	D 41	
ø 5.0	x	6.0	1.5	ø 3.9 x 6.0	C 145	M4000	D 151*	-	-	
ø 6.0	x	7.0	1.5	ø 3.9 x 7.0			D 151	D 107	D 41	
ø 8.0	x	7.0	1.5	ø 5.0 x 7.0			D 151	D 107	-	
ø 10.0	x	7.0	1.5	-			-	D 107	-	
ø 12.0	x	7.0	2.0	ø 8 x 75			-	D 107	-	
ø 15.0	x	7.0	2.0	ø 10 x 75			-	D 107	-	

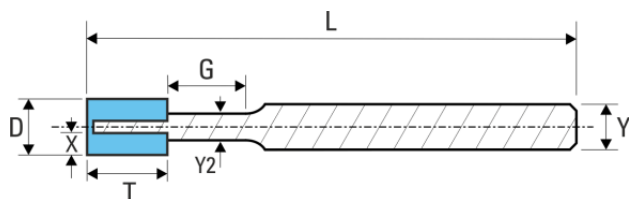
We also produce grinding pins in other sizes as well as grinding tools that are tailored to your individual needs.

\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

# 1A1W CBN

## ø 0.3 up to 2.5 mm - metal bond

Grinding pins with the smallest diameters, maximum tool life and profile accuracy. For grinding steel with HRC 54 - 64. Universally applicable, on lathes as well as with high frequency and precision spindles. Wet and dry grinding.



### Stock articles

Abrasive layer			Steel shank (hard)		Conc.	Bond	Grit size			Your notes
D	T	X	Y x L	Y2 x G			coarse	standard	finish	
ø 0.3	x	0.8	ø 3 x 40	ø 0.2 x 0.8	C 145	M4000	-	BN 37	-	
ø 0.4	x	1.0		ø 0.3 x 1.0			-	BN 46	-	
ø 0.5	x	1.5		ø 0.4 x 1.5			-	BN 46	-	
ø 0.6	x	2.0		ø 0.5 x 2.0			-	BN 64	-	
ø 0.7	x	2.0		ø 0.5 x 2.0			-	BN 64	-	
ø 0.8	x	2.5		ø 0.6 x 2.5			-	BN 76	-	
ø 1.0	x	2.5		ø 0.8 x 2.5			BN 107*	BN 91	BN 37	
ø 1.2	x	3.0		ø 0.9 x 3.0			BN 107*	BN 91	-	
ø 1.5	x	3.5		ø 1.2 x 3.5			-	BN 91	BN 37	
ø 1.8	x	4.0		ø 1.5 x 4.0			-	BN 91	-	
ø 2.0	x	4.0		ø 1.7 x 4.0			BN 126	BN 91	BN 37	
ø 2.2	x	4.5		ø 1.8 x 4.5			-	BN 91	-	
ø 2.5	x	5.0		ø 2.1 x 5.0			BN 126	BN 91	BN 37	

We also manufacture grinding pins with different parameters or grit sizes as well as grinding tools that have been designed for your specific grinding task. We have access to more than 400 bonds that we have developed ourselves, many of which are metal bonds.

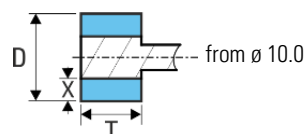
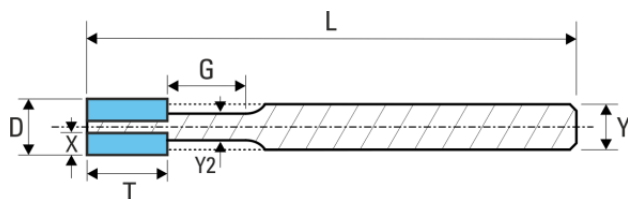
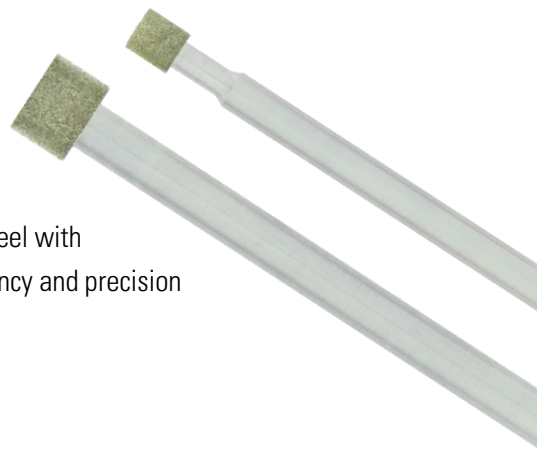
\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.



# 1A1W CBN

## ø 3 up to 15 mm - metal bond

Grinding pins with maximum tool life and profile accuracy. For grinding steel with HRC 54 - 64. Universally applicable, on lathes as well as with high frequency and precision spindles. Wet and dry grinding.



### Stock articles

Abrasive layer			Steel shank (hard)		Conc.	Bond	Grit size			Your notes
D	T	X	Y x L	Y2 x G			coarse	standard	finish	
ø 3.0	x 6.0	0.8	ø 3 x 40	ø 2.5 x 6.0	C 145	M4000	BN 126	BN 91	BN 37	
ø 3.5	x 6.0	1.0		ø 2.8 x 6.0			-	BN 91	-	
ø 4.0	x 6.0	1.0		-			BN 151	BN 91	BN 37	
ø 5.0	x 6.0	1.5		-			BN 151	BN 91	BN 37	
ø 6.0	x 7.0	1.5	ø 6 x 75	ø 3.9 x 7.0	C 145	M4000	-	BN 107	-	
ø 8.0	x 7.0	1.5		ø 5.0 x 7.0			BN 151*	BN 107	-	
ø 10.0	x 7.0	1.5	ø 8 x 75	-			-	BN 107	-	
ø 12.0	x 7.0	2.0		-			BN 151*	BN 107	-	
ø 15.0	x 7.0	2.0	ø 10 x 75	-			BN 151*	BN 107	-	

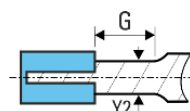
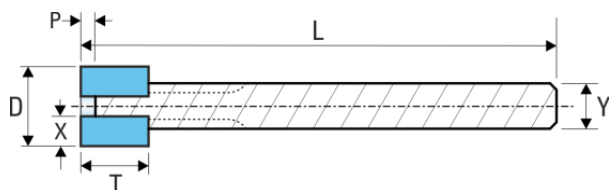
We also produce grinding pins in other sizes as well as grinding tools that are tailored to your individual needs.

\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

# 1A1W Diamond

## ø 3 up to 15 mm - resin ceramic bond

Suited for wet and especially dry grinding, because grinding pins with this excellent bond grind with low pressure and hence low temperatures. This resin ceramic bond is suited for an extensive array of applications, but mostly used for grinding tungsten carbide, ceramics and glass.



front side covered  
with ø 3.0 & 4.0

### Stock articles

Abrasive layer					Carbide shank		Conc.	Bond	Grit size			Your notes
D	T	X	P	Y x L	Y2 x G	coarse			standard	finish		
ø 3	x	4.5	0.75	-	ø 3 x 50	ø 2.2 x 10.0	C 75	R 210	D 126	D 91	D 33	
ø 4	x	5.0	1.1	-	ø 3 x 50	ø 2.6 x 10.0			D 151	D 91	D 33	
ø 5	x	6.0	1.3	1	ø 3 x 50	-	C 75	R 220	D 151	D 91	D 33	
ø 6	x	7.0	1.5	1	ø 4 x 50	-			D 151	D 107	D 33	
ø 8	x	7.0	2.0	1	ø 6 x 75	ø 5.0 x 7.0	C 75	R 220	D 151	D 107	D 33	
ø 10	x	7.0	2.5	1	ø 6 x 75	-			D 151	D 107	D 33	
ø 12	x	7.0	3.0	1	ø 8 x 75	-			D 151	D 107	D 33	
ø 15	x	7.0	4.5	1	ø 8 x 75	-			D 151	D 107	D 33	

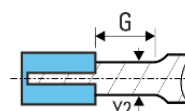
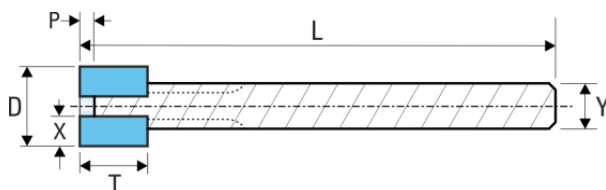
For larger diameters → small wheels on page 3-18.

We also manufacture custom-built grinding pins. More than 400 bonds suitable for different grinding applications are at our disposal, many of which are resin based bonds.

# 1A1W CBN

## ø 3 up to 15 mm - resin ceramic bond

Suitable for wet and particularly dry grinding, because grinding pins with this excellent bond grind with low pressure and hence low temperatures. For grinding of steel with HRC 52 - 66. If an ideal grain protrusion is maintained with regenerators (→ 4-08), even softer or harder steels can be ground.



front side covered  
with ø 3.0 & 4.0

## Stock articles

Abrasive layer				Carbide shank		Conc.	Bond	Grit size			Your notes
D	T	X	P	Y x L	Y2 x G			coarse	standard	finish	
ø 3	x	4.5	0.75	-	ø 3 x 50    ø 2.2 x 10.0	C 75	R 210	BN 126	BN 91	BN 33	
ø 4	x	5.0	1.1	-	ø 3 x 50    ø 2.6 x 10.0			BN 151	BN 91	BN 33	
ø 5	x	6.0	1.3	1	ø 3 x 50    -	C 75	R 220	BN 151	BN 91	BN 33	
ø 6	x	7.0	1.5	1	ø 4 x 50    -			BN 151	BN 107	BN 33	
ø 8	x	7.0	2.0	1	ø 6 x 75    ø 5.0 x 7.0	C 75	R 220	BN 151	BN 107	BN 33	
ø 10	x	7.0	2.5	1	ø 6 x 75    -			BN 151	BN 107	BN 33	
ø 12	x	7.0	3.0	1	ø 8 x 75    -			BN 151	BN 107	BN 33	
ø 15	x	7.0	4.5	1	ø 8 x 75    -			BN 151	BN 107	BN 33	

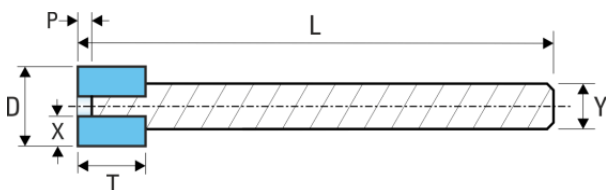
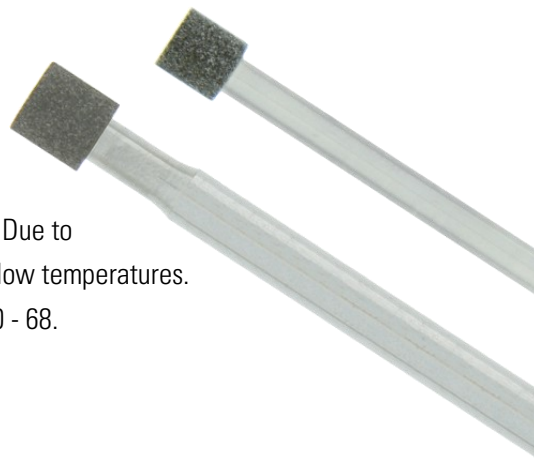
For larger diameters → small wheels on page 3-19.

We also produce grinding pins in other sizes and different grit sizes as well as grinding tools that are tailored to your individual needs. We have more than 400 bonds we developed, a lot of them resin-ceramic and resin-hybrid bonds.

# 1A1WP CBN

ø 4 up to 18 mm - **vitrified bond**

Very high stock removal rates are possible with our praised vitrified bond. Due to their high porosity these grinding pins grind with low pressure and hence low temperatures. Only suitable for wet grinding. For grinding of high-alloy steel with HRC 50 - 68.



## Stock articles

Abrasive layer					Carbide shank		Conc.	Bond	Grit size			Your notes
D		T	X	P	Y x L	Y2 x G			standard	coarse	very coarse	
ø 4	x	5	1	1	ø 3 x 50	ø 2.7 x 5	C 100	V 5000	BN 64	BN 91	-	
ø 5	x	6	1.3	1	ø 3 x 50	-			BN 64	BN 91	-	
ø 6	x	7	1.5	1	ø 4 x 50	-			BN 64	BN 91	-	
ø 8	x	8	2	2	ø 6 x 75	ø 5 x 8			BN 64	BN 91	BN 151	
ø 10	x	10	3	3	ø 6 x 75	-			BN 64	BN 91	BN 151	
ø 12	x	12	3	4	ø 8 x 75	-			BN 64	BN 91	BN 151	
ø 14	x	12	4	4	ø 8 x 75	-			BN 64	BN 91	BN 151	
ø 16	x	12	5	4	ø 8 x 75	-			BN 64	BN 91	BN 151	
ø 18	x	12	6	4	ø 8 x 75	-			BN 64	BN 91	BN 151	

approx. Ra (µm)

≈ 0.2 - 0.4

≈ 0.4 - 0.5

≈ 0.6 - 0.75

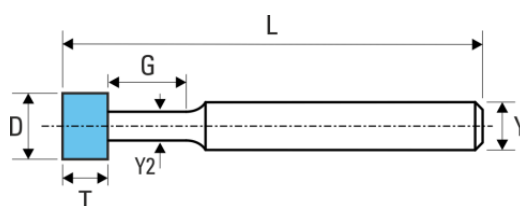
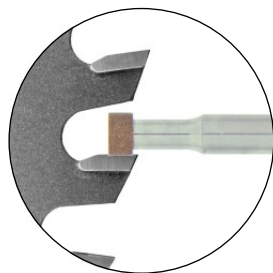
For larger diameters → small wheels on page 3-20.

We also manufacture grinding pins that are adjusted to your individual needs (different grit size, bond, dimensions).

# 1A1W Diamond

**ø 6.0 + 6.5 mm - resin hybrid bond**  
**for groove grinding**

Grinding pencils that were conceived for the efficient grinding of carbide circular saw blades.  
 Economical grinding thanks to very long tool lives.



## Examples of possible configurations

	Abrasive layer		Steel shank (hard)		Conc.	Bond	Grit size	Your notes
	D	T	Y x L	Y2 x G				
grinding with oil	ø 6.0 ø 6.5 x 3.5 ø 7.0		ø 6 x 40	ø 4.2 x 8 ø 4.5 x 8 ø 5.0 x 8 ø 5.0 x 10	C 100 C 125	R296	D 46	
grinding with emulsion	ø 6.0 ø 6.5 x 3.5 ø 7.0		ø 6 x 40	ø 4.2 x 8 ø 4.5 x 8 ø 5.0 x 8 ø 5.0 x 10	C 100 C 125	R260	D 76	

minimum order of 10 pieces

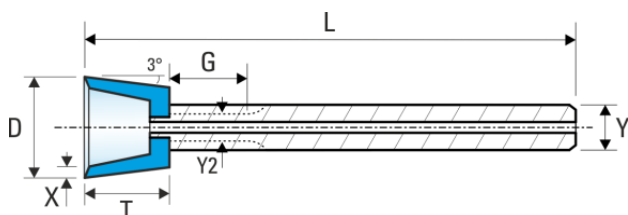
We also manufacture custom-built grinding pins according to your specifications.

# 1B1WH Diamond

**ø 4 up to 20 mm - resin ceramic bond**

**for blind holes, surface grinding and sharp edges**

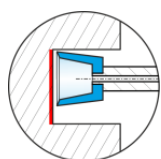
Those grinding pins have a sharp edge and are designed to grind stably and with low pressure on the face side. These grinding pins have a wide application range with wet and dry grinding. With central coolant bore holes.



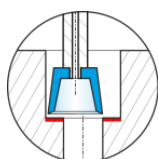
## Stock articles

Abrasive layer				Carbide shank			Conc.	Bond	Grit size	Your notes
D	T	X	Vk°	Y x L	Y2 x G	Bore				
ø 4	x	6	1.0	ø 3 x 40	-	ø 0.6	C 100	R 220	D 126	
ø 5	x	6	1.0	ø 6 x 75	ø 3.7 x 6.0	ø 0.6				
ø 6	x	7	1.1	ø 6 x 75	ø 4.7 x 7.0	ø 1.0				
ø 8	x	8.5	1.3	ø 6 x 75	-	ø 1.0				
ø 10	x	9	1.3	ø 8 x 75	-	ø 1.3				
ø 12	x	9	1.3	ø 8 x 75	-	ø 1.3				
ø 15	x	9	1.6	ø 8 x 75	-	ø 1.3				
ø 20	x	9	1.6	ø 8 x 75	-	ø 1.3				

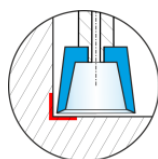
We also manufacture grinding pins in other sizes and grit sizes as well as grinding tools that were specially devised for your grinding task. For larger diameters see → 3-21.



blind holes



face grinding



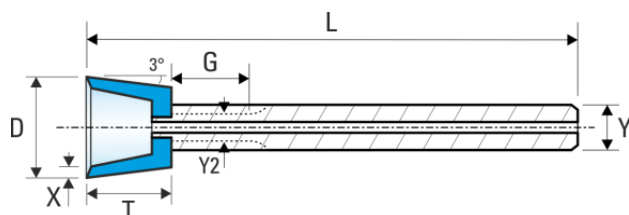
sharp edges

# 1B1WH CBN

ø 4 up to 20 mm - **resin ceramic bond**

**for blind holes, surface grinding and sharp edges**

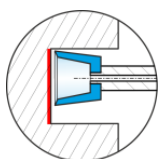
Those grinding pins have a sharp edge and are designed to grind stably and with low pressure on the face side. These grinding pins have a wide application range with wet and dry grinding. Mostly used to grind steel with HRC 52 - 66. With central coolant bore holes.



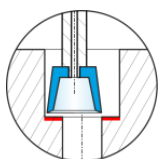
## Stock articles

Abrasive layer				Carbide shank			Conc.	Bond	Grit size	Your notes
D	T	X	Vk°	Y x L	Y2 x G	Bore				
ø 4	x	6	1.0	ø 3 x 40	-	ø 0.6	C 100	R 220	BN 126	
ø 5	x	6	1.0	ø 6 x 75	ø 3.7 x 6.0	ø 0.6				
ø 6	x	7	1.1	ø 6 x 75	ø 4.7 x 7.0	ø 1.0				
ø 8	x	8.5	1.3	ø 6 x 75	-	ø 1.0				
ø 10	x	9	1.3	ø 8 x 75	-	ø 1.3				
ø 12	x	9	1.3	ø 8 x 75	-	ø 1.3				
ø 15	x	9	1.6	ø 8 x 75	-	ø 1.3				
ø 20	x	9	1.6	ø 8 x 75	-	ø 1.3				

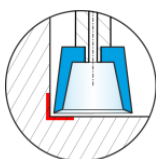
We also manufacture grinding pins in other sizes and grit sizes as well as grinding tools that were specially devised for your grinding task. For larger diameters see → 3-21.



blind holes



face grinding

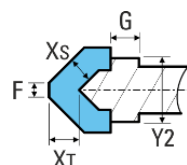
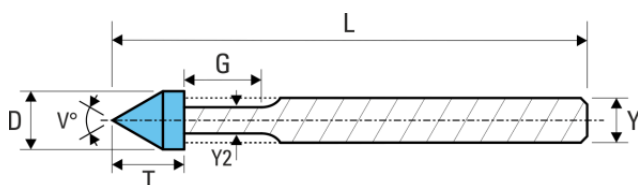


sharp edges

# 1E1W Diamond

## 60° and 90° profile grinding pins - metal bond

Grinding pins that retain their profile for very long with a thick, sintered abrasive layer that can be reground again and again. Universally usable on internal cylindrical grinders, jig grinders, grinding centres, milling machines, lathes and drilling machines. Wet and dry grinding. Very high tool life.

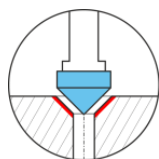


$F \leq 0.45 \text{ mm}$  bei  
Lagerstiften mit D107

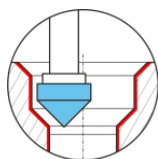
### Stock articles

Angle V	Abrasive layer				Steel shank (hard)		Conc.	Bond	Grit size	Your notes
	D	T	Xs	Xt	Y x L	Y2 x G				
60°	Ø 3	x 6.7				Ø 2.7 x 6	C 145	M4000	D 107	
	Ø 4	x 7.1	1.5	3	Ø 3 x 40	no relief				
	Ø 5	x 7.6				no relief				
	Ø 6	x 8.1				Ø 5.7 x 7	C 145	M4000	D 107	
	Ø 8	x 9.8	1.5	3	Ø 6 x 75 <sup>a</sup>	Ø 7.7 x 2.5				
	Ø 10	x 11.6				Ø 9.7 x 2.5				
	Ø 12*	x 12.4			Ø 6 x 80	Ø 11.7 x 2.5				
90°	Ø 3	x 5.3				Ø 2.7 x 6	C 145	M4000	D 107	
	Ø 4	x 5.6	1.5	2.1	Ø 3 x 40	no relief				
	Ø 5	x 5.8				no relief				
	Ø 6	x 6.1				Ø 5.7 x 7	C 145	M4000	D 107	
	Ø 8	x 7.1	1.5	2.1	Ø 6 x 75 <sup>a</sup>	Ø 7.7 x 2.5				
	Ø 10	x 8.1				Ø 9.7 x 2.5				

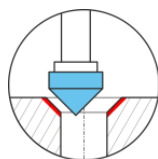
Other measurements (e.g. different diameter) and grit sizes available on request.



countersinks



bevels and contours



conical seats

\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

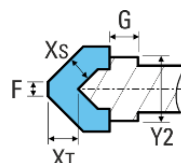
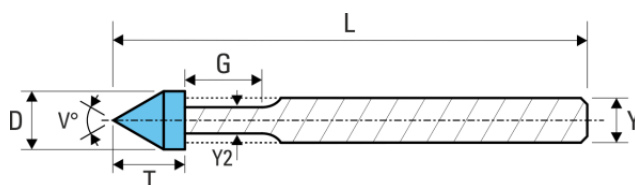
<sup>a</sup> Older version had a total length of 80 mm, of which we still have some on stock.



# 1E1W CBN

## 60° and 90° profile grinding pins - metal bond

Grinding pins that retain their profile for very long with a thick, sintered abrasive layer that can be reground again and again. Wet and dry grinding. Very high tool life. Mostly for grinding of steel with HRC 54 - 64. Softer or harder steel can be ground if a good grain protrusion is maintained with regenerators (→ 4-02).

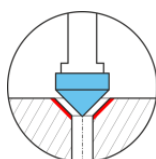


$F \leq 0.45 \text{ mm}$  bei  
Lagerstiften mit BN107

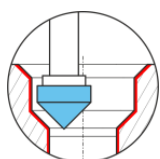
### Stock articles

Angle V	Abrasive layer				Steel shank (hard)		Conc.	Bond	Grit size	Your notes
	D	T	Xs	Xr	Y x L	Y2 x G				
60°	Ø 3	x	6.7			Ø 2.7 x 6	C 145	M4000	BN 107	
	Ø 4	x	7.1		Ø 3 x 40	no relief				
	Ø 5	x	7.6			no relief				
	Ø 6	x	8.1	1.5	Ø 6 x 75 <sup>a</sup>	Ø 5.7 x 7				
	Ø 8	x	9.8			Ø 7.7 x 2.5				
	Ø 10	x	11.6	3		Ø 9.7 x 2.5				
90°	Ø 3	x	5.3			Ø 2.7 x 6	C 145	M4000	BN 107	
	Ø 4	x	5.6		Ø 3 x 40	no relief				
	Ø 5	x	5.8			no relief				
	Ø 6	x	6.1	1.5	Ø 6 x 75 <sup>a</sup>	Ø 5.7 x 7				
	Ø 8	x	7.1	2.1		Ø 7.7 x 2.5				
	Ø 10	x	8.1			Ø 9.7 x 2.5				
	Ø 12*	x	8.6		Ø 6 x 80	Ø 11.7 x 2.5				

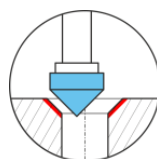
Other measurements (e.g. different angle) and grit sizes available on request.



countersinks



bevels and contours



conical seats

\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

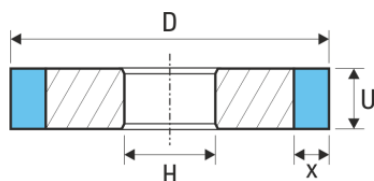
<sup>a</sup> Older version had a total length of 80 mm, of which we still have some on stock.

# 1A1 Diamond

ø 10 up to 50 mm - resin ceramic bond

## Small wheels

Suitable for wet and in particular dry grinding because this excellent bond grinds with low pressure and hence with low temperatures.



## Stock articles

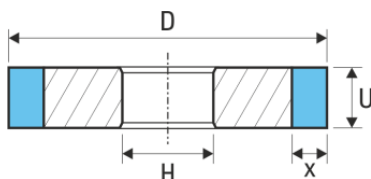
Abrasive layer			Bore H	Conc.	Bond	Grit size		Your notes
D	U	X				coarse	standard	
ø 10*	x	8	ø 4 mm	C 75	R 220	D 151*	D 107*	
ø 12	x	8	ø 6 mm			D 151	D 107	
ø 15	x	8	ø 6 mm					
ø 20	x	10	ø 8 mm					
ø 25	x	10	ø 10 mm			D 151*	D 107	
ø 30	x	10	ø 10 mm					
ø 35*	x	12	ø 10 mm			D 151*		
ø 40	x	12	ø 10 mm			D 151*	D 107	
ø 50	x	12	ø 10 mm			D 151*	D 107	

We also manufacture small wheels with different measurements and grit sizes. We have decades of experience in the conception and manufacturing of tailored grinding tools.

\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

**1A1****CBN****ø 10 up to 50 mm - resin ceramic bond****Small wheels**

Suitable for wet and in particular dry grinding because this excellent bond grinds with low pressure and hence with low temperatures. For grinding of steel with HRC 52 - 66.

**Stock articles**

Abrasive layer			Bore H	Conc.	Bond	Grit size		Your notes
D	U	X				coarse	standard	
ø 10*	x	8	ø 4 mm	C 75	R 220	BN 151*	BN 107*	
ø 12	x	8	ø 6 mm			BN 151	BN 107	
ø 15	x	8	ø 6 mm					
ø 20	x	10	ø 8 mm					
ø 25	x	10	ø 10 mm					
ø 30	x	10	ø 10 mm			BN 151*	BN 107	
ø 35*	x	12	ø 10 mm			BN 151*	BN 107*	
ø 40	x	12	ø 10 mm			BN 151*	BN 107	
ø 50	x	12	ø 10 mm			BN 151*	BN 107	

We also manufacture small wheels with different measurements and grit sizes. We have decades of experience in the conception and manufacturing of tailored grinding tools.

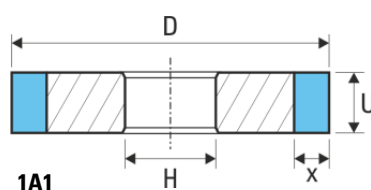
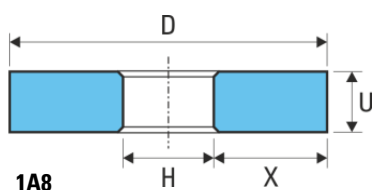
\* Available from stock as long as stock lasts. Thereafter available on demand as a special execution.

# 1A8 / 1A1 CBN

ø 8 up to 40 mm - **vitrified bond**

## Small wheels

Very cool grinding thanks to the high porosity of the bond, with which high stock removal rates can be achieved. Suitable only for wet grinding. Should preferably only be dressed with rotating metal bonded diamond grinding wheels (→ 4-05). For grinding of high-alloy steel with HRC 50 - 68.



## Stock articles

	Abrasive layer			Bore	Conc.	Bond	Grit size			Your notes
	D	U	X	H			standard	coarse	very coarse	
1A8	ø 8	x	8	2	C 100	V 5000	BN 64	BN 91	BN 151	
	ø 10	x	10	3						
	ø 12	x	12	3						
	ø 14	x	12	4						
	ø 16	x	12	5						
	ø 18	x	12	6						
	ø 20	x	14	6						
1A1	ø 25	x	14	3	C 100	V 5000	BN 64	BN 91	BN 151	
	ø 30	x	14	3						
	ø 35	x	14	3						
	ø 40	x	14	3						

approx. Ra (µm)

≈ 0.2 - 0.4

≈ 0.4 - 0.5

≈ 0.6 - 0.75

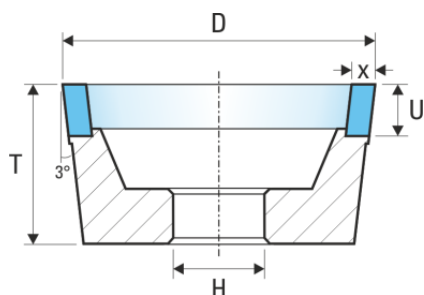
We also manufacture small grinding wheels according to your specifications. For smaller diameters please see the corresponding grinding pins (→ 3-12).

# 11B9 Diamond & CBN

ø 15 up to 40 mm - resin ceramic bond

for blind bores, surface grinding and sharp edges

Suitable for wet as well as dry grinding. Cup wheels with this excellent, universally applicable bond grind with low pressure and hence with low temperatures.



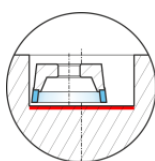
## Examples of possible configurations

Abrasive layer				Bore	Height	Conc.	Bond	Grit size	Your notes
D	X	U	Vk°	H	T			Diamond	
ø 15				ø 6 mm	15 mm	C 100	R 220	D 46 D 91 D 126	
ø 20				ø 6 mm	20 mm				
ø 25	x	2	5	ø 6 mm	20 mm				
ø 30			3°	ø 8 mm	20 mm				
ø 40				ø 8 mm	20 mm				

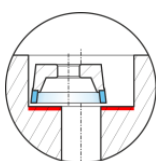
## Stock articles

Abrasive layer				Bore	Height	Conc.	Bond	Grit size	Your notes
D	X	U	Vk°	H	T			CBN	
ø 15				ø 6 mm	15 mm	C 75	R 220	BN 126	
ø 20				ø 6 mm	20 mm				
ø 25	x	2	5	ø 6 mm	20 mm				
ø 30			3°	ø 8 mm	20 mm				
ø 40				ø 8 mm	20 mm				

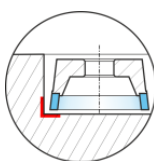
Other dimensions available on request.



blind bores



surface grinding



sharp edges

## **CUSTOM-MADE TOOLS for your individual task in a very short time**

Did you not find the right grinding tool in this catalogue?

No worries - just contact us. We have a wealth of experience in the conception and manufacturing of tailored grinding solutions for simple grinding tasks as well as for grinding challenges that seem impossible at first glance.

We look forward to your inquiry.

E-mail: [post@haefeli.swiss](mailto:post@haefeli.swiss)

Telephone: 0041 (0)44 377 80 50

Optional inquiry form → page 5-01

