

**QUEEN BEE**

**SERIES**

$81 \pm 0.001$

0,95

*außergewöhnlich.*

**EFFICIENT.**



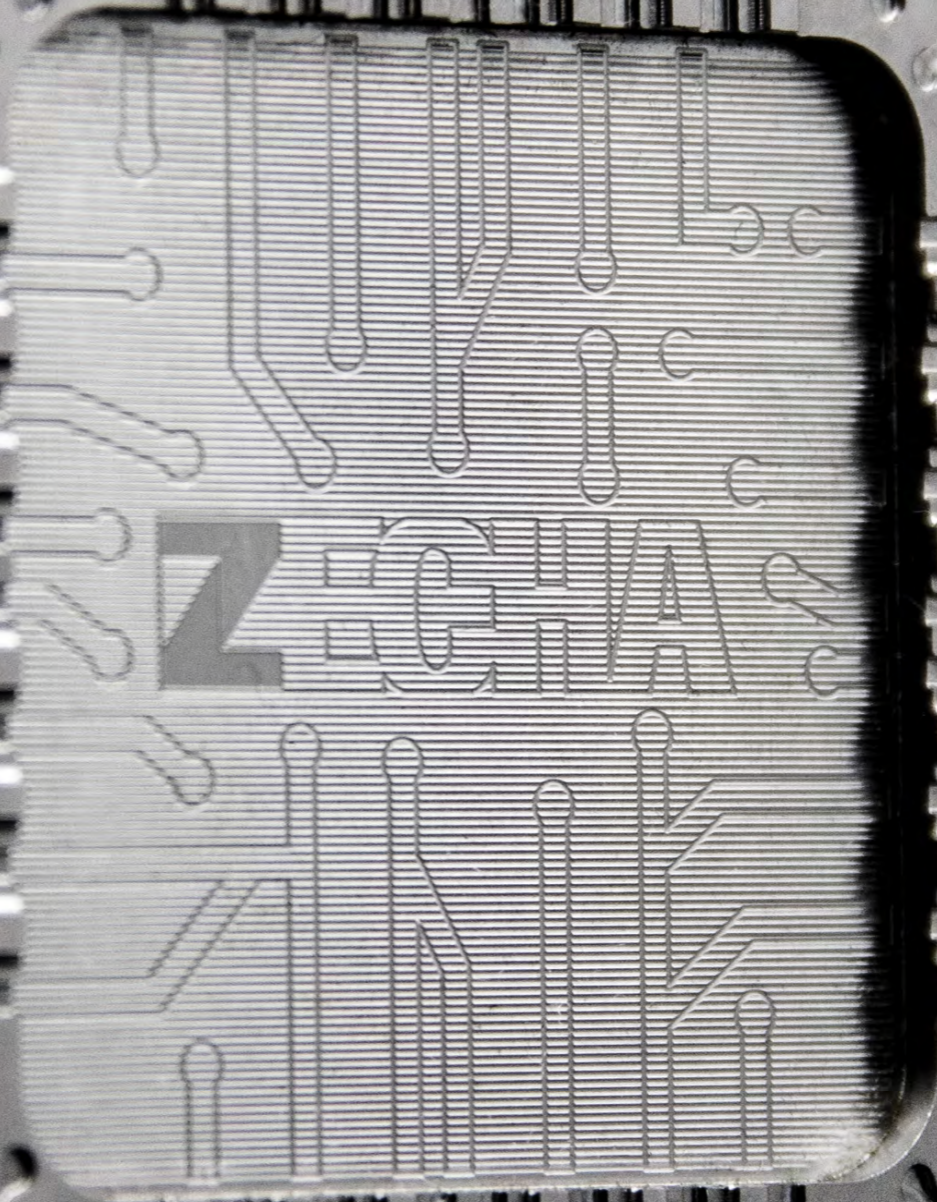
**Z ZECHA**

*Einzelheit A*

Ø 2,02 ±0,02

(Ø 1,57 ±0,02)

15°



**ZECHA**

*außergewöhnlich.*

anzelheit A

# QUEEN BEE SERIES

$\varnothing 1 \pm 0.001^{\circ}$

0.95



## QUEEN BEE SERIES

### STABLE AND PRECISE

Discover the ultimate series for steels below 58 HRC – QUEEN BEE from ZECHA. This exclusive product line has been developed to combine the highest standards of precision and efficiency. Whether you are an experienced or aspiring expert, QUEEN BEE offers the perfect combination of advanced technology and outstanding design.

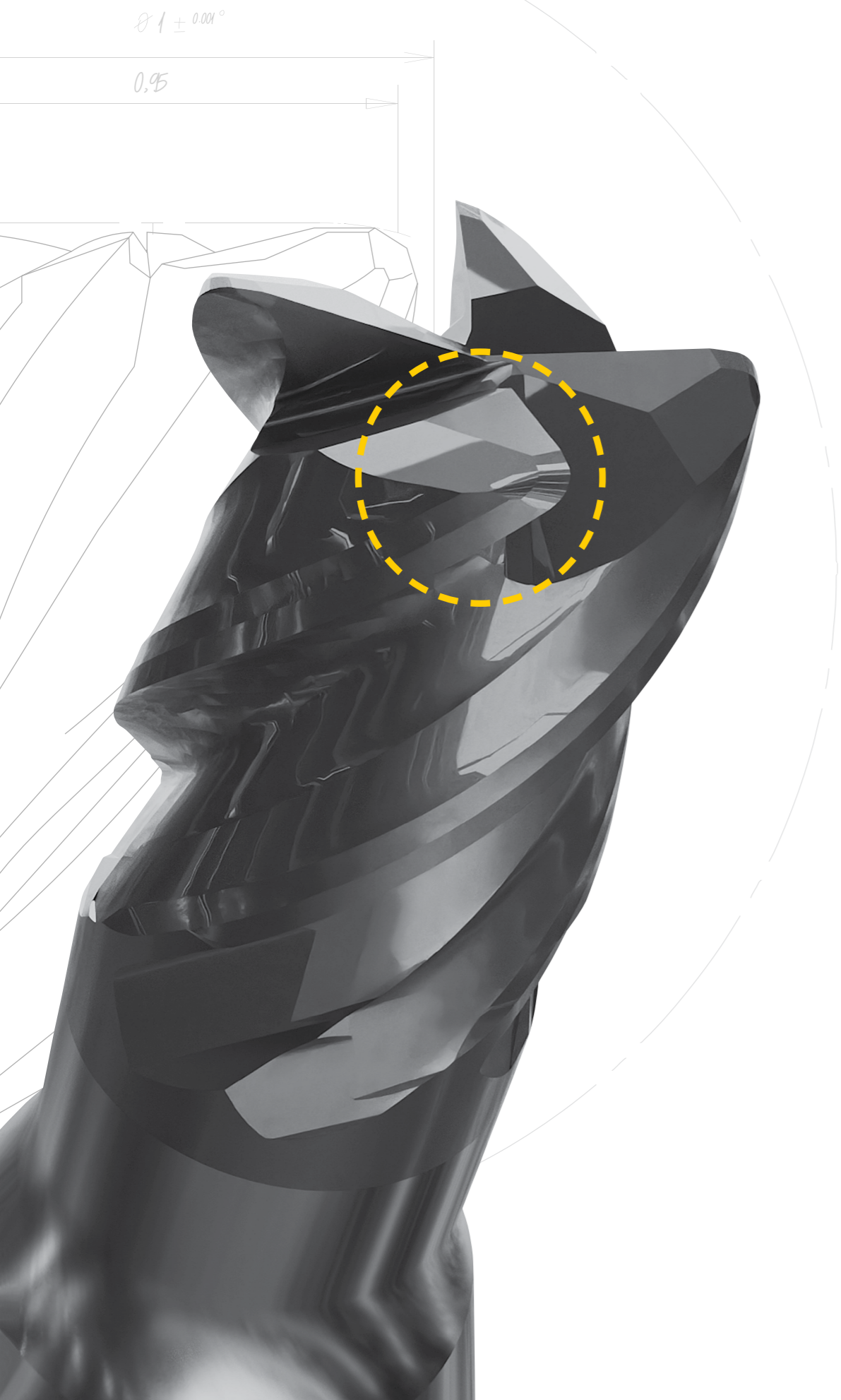
The QUEEN BEE series is characterized by precise and optimized geometry. The center cut ensures excellent surface quality, even in flat areas. Thanks to the thoughtful design of the tools, every cut becomes a masterpiece, both in dry and wet milling.

Experience a revolutionary WAD coating technology that maximizes tool durability and significantly increases tool life. The QUEEN BEE series relies on innovative materials that not only minimize friction but also ensure outstanding surface quality.

With the QUEEN BEE series, you are not only opting for the highest quality, but also for a tool line that is characterized by its versatility and reliability. Whether in production, mold making or general machining QUEEN BEE is an absolute must in any tool range.

Einzelheit A

# QUEEN BEE SERIES



## OPTIMIZED GEOMETRY PERFECTION IN EVERY DETAIL

The tool geometry and the cutting edge radius play a central role in chip formation and the wear mechanism on the tool.

The QUEEN BEE tools score points with a more streamlined geometry and a reduced wedge angle. This innovative design not only enables a more efficient cut, but also guarantees improved chip evacuation. The result? Maximum precision for every application.

The optimized geometry also comes into its own when used with tougher materials, as it guarantees clean cuts. QUEEN BEE tools are an indispensable companion for harder materials.

A smaller wedge angle and optimized geometry not only mean precise cuts, but also an outstanding surface finish. With QUEEN BEE tools, you not only achieve the desired dimensions, but also set standards for the quality of your end products.

# QUEEN BEE SERIES

$\varnothing 1 \pm 0.001^{\circ}$

0.95



## OPTIMIZED COATING

### INNOVATION FOR LONG-LASTING PRECISION

The QUEEN BEE tools are equipped with an optimized WAD coating that aims to extend the life of the tool without compromising the sharpness required for clean cuts. This innovative coating technology guarantees that your tools will last longer without losing precision.

The optimized WAD coating sets new standards by being thinner, smoother and at the same time harder than normal standard coatings.

This advance enables improved chip evacuation and helps to increase the efficiency of your machining processes.

The harmonious combination of optimized geometry and advanced coating technology results in an unsurpassed surface finish. Every cut becomes a masterpiece, while the service life of your tools is maximized. QUEEN BEE therefore not only sets standards in terms of precision, but also in terms of durability.

Einzelheit A

# QUEEN BEE SERIES

$\varnothing 1 \pm 0.001^{\circ}$

0.95

## HIGH-END PRODUCTION

### THE DIFFERENCE LIES IN THE MICRO-DETAILS

At ZECHA, we consistently use the latest carbide to ensure that every tool meets the highest standards. This innovative material forms the basis for durable, precise and high-performance tools. We source our carbide exclusively from leading manufacturers to ensure consistently high quality. Carefully selected grades offer the highest quality in terms of microstructure, hardness and breaking strength, which guarantees metallurgical consistency and the reliability that goes with it.

The precise art of centerless grinding is a crucial step in ZECHA's manufacturing process. This technique enables a flawless surface and dimensional accuracy, which in turn creates the basis for tools that can withstand even the most demanding requirements.

All tools undergo a rigorous inspection during which all relevant data is recorded. Each ZECHA tool thus proudly bears its life number, a sign of individual monitoring throughout the entire production process. The identification number of the tool is laser-engraved on the base of the shank together with the production batch, so that each tool can be clearly identified and precisely reproduced even years later. In contrast to a laser-engraved shank, the optimum concentricity is maintained.

The careful process of rounding the cutting edges not only helps to improve tool life, but also minimizes burr formation and ensures a precise and clean cut - another example of the attention to detail that characterizes ZECHA.



5000x zoom of an unmachined cutting edge



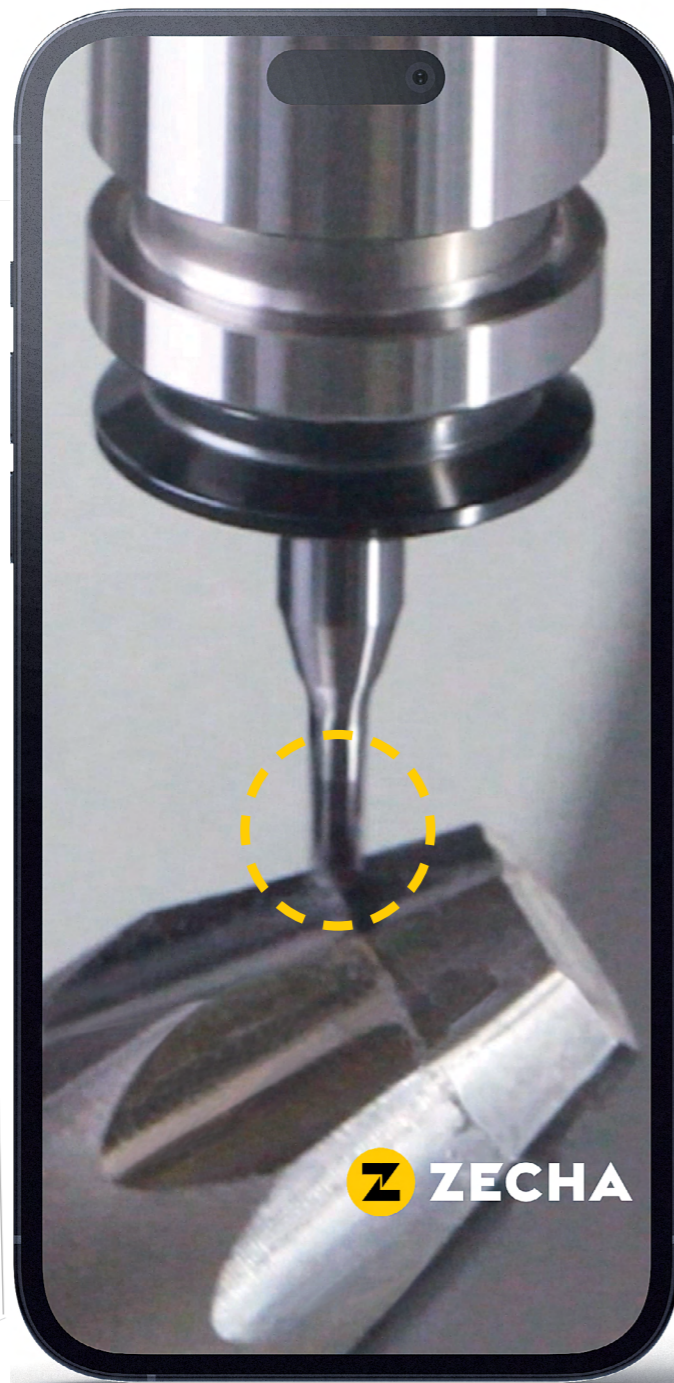
5000x zoom of a machined cutting edge

Einzelheit A

# QUEEN BEE SERIES

$\varnothing 1 \pm 0.001^{\circ}$

0.95



## SEE IT IN ACTION

### MILLING EXAMPLE IN STAVAX

Would you like to see the QUEEN BEE tool technology in action? Scan the QR code below to access the YouTube video showing the precise milling work of QUEEN BEE tools in Stavax. Experience the effortless precision and efficiency that characterizes the QUEEN BEE series.



Einzelheit A

# QUEEN BEE SERIES

## SERIES OPTIONS

Numerous variations are available in the QUEEN BEE SERIES, which we will break down for you below. Here you will find a brief explanation of the different tool series as well as relevant symbols for the properties of the tools. More information about the series and a key explaining the different symbols can be found on the following pages.

### 589.B2 SERIES

2-flute ball-nose end mills, with 30° helix angle



### 589.T2 SERIES

2-flute end mills with corner radius with 35° helix angle



### 589.T4 SERIES

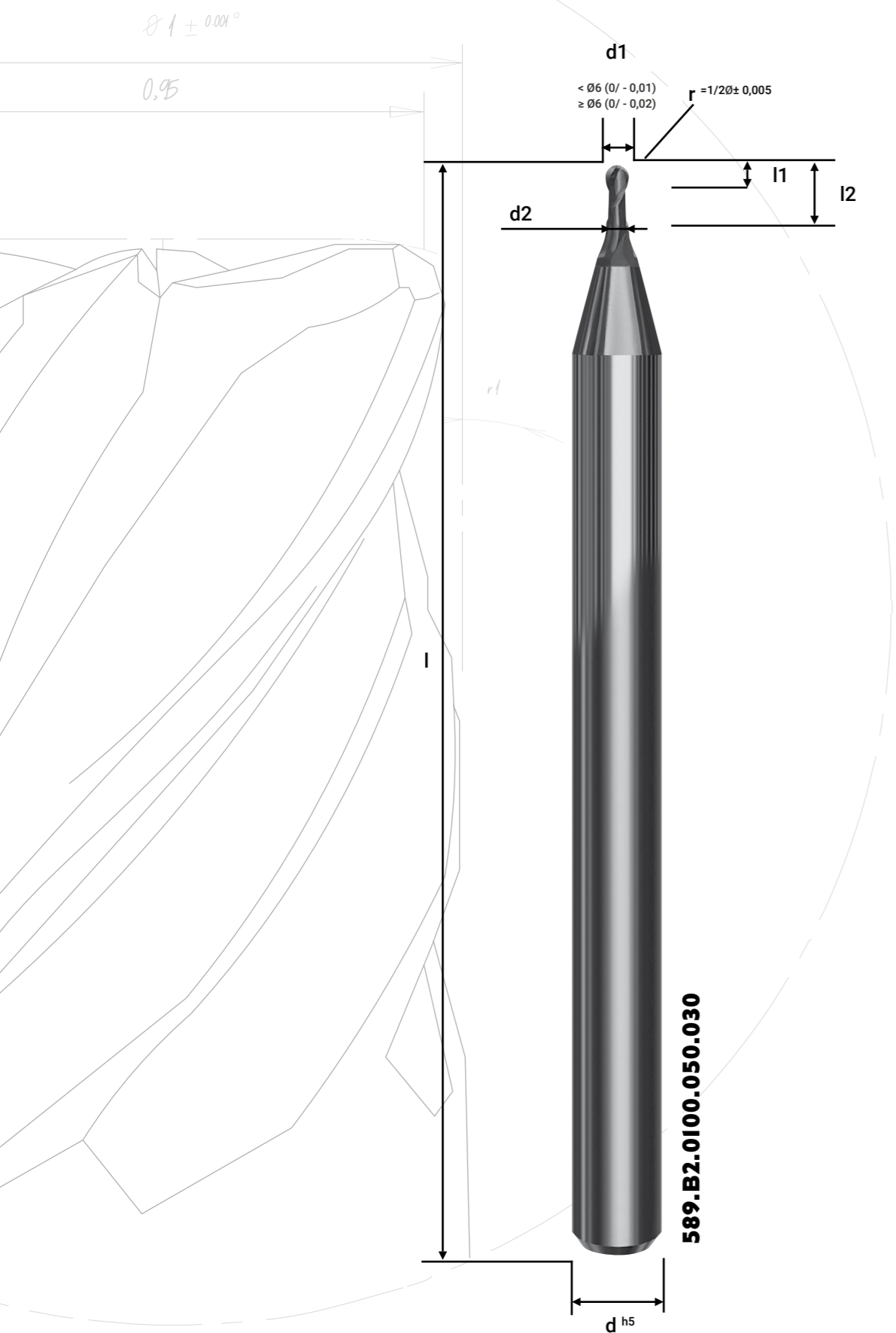
4-flute end mills with corner radius with 43°/45° helix angle



On the following pages you will find further information on the technical data and available options for each series, as well as a QR code to obtain a direct link to the corresponding tool in the ZECHAshop.

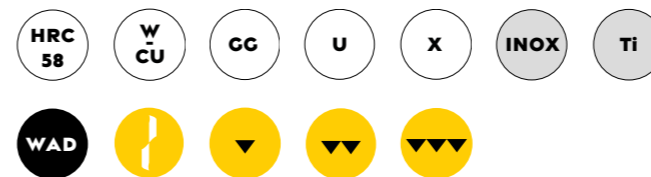


# QUEEN BEE SERIES



## QUEEN BEE 589.B2 SERIES

- Solid carbide ball nose end mill, 2 flutes, twist drill and 30° angled flutes
- For wet or dry finishing for steels under 58 HRC

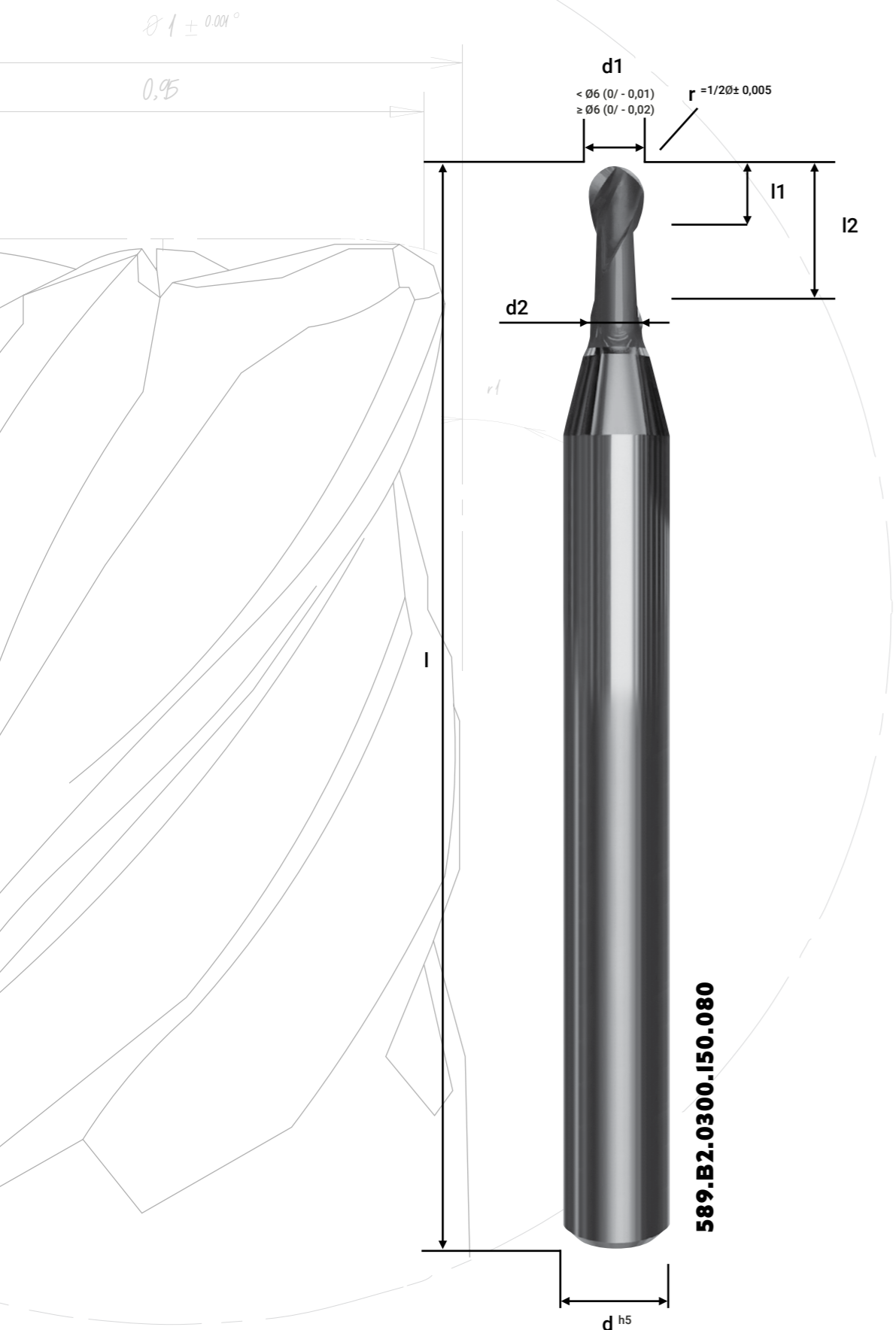


Article No.	d1	d2	r	l1	l2	d	l	z	Inclination Angle				
									30°	1°	1°30'	2°	3°
589.B2.0040.020.000	0.4	-	0.20	0.4	-	6.0	60	2	0.49	0.54	0.57	0.60	0.66
589.B2.0050.025.000	0.5	-	0.25	0.5	-	6.0	60	2	0.60	0.65	0.69	0.72	0.78
589.B2.0060.030.000	0.6	-	0.30	0.6	-	6.0	60	2	0.71	0.76	0.80	0.84	0.90
589.B2.0080.040.000	0.8	-	0.40	0.8	-	6.0	60	2	0.93	0.98	1.03	1.07	1.14
589.B2.0080.040.020	0.8	0.75	0.40	1.0	2.0	4.0	48	2	2.45	2.56	2.66	2.75	2.91
589.B2.0080.040.050	0.8	0.75	0.40	1.0	5.0	4.0	48	2	5.59	5.79	5.95	6.09	6.33
589.B2.0080.040.080	0.8	0.75	0.40	1.0	8.0	4.0	48	2	8.71	8.96	9.16	9.33	9.95
589.B2.0080.040.100	0.8	0.75	0.40	1.0	10.0	4.0	48	2	10.77	11.06	11.28	11.49	12.45
589.B2.0080.040.120	0.8	0.75	0.40	1.0	12.0	4.0	48	2	12.83	13.14	13.39	13.80	14.95
589.B2.0100.050.020	1.0	0.95	0.50	1.5	2.0	4.0	48	2	2.45	2.55	2.65	2.73	2.89
589.B2.0100.050.030	1.0	0.95	0.50	1.5	3.0	4.0	48	2	3.50	3.64	3.76	3.87	4.06
589.B2.0100.050.040	1.0	0.95	0.50	1.5	4.0	4.0	48	2	4.55	4.71	4.85	4.98	5.20
589.B2.0100.050.050	1.0	0.95	0.50	1.5	5.0	4.0	48	2	5.59	5.78	5.94	6.08	6.32
589.B2.0100.050.060	1.0	0.95	0.50	1.5	6.0	4.0	48	2	6.63	6.84	7.02	7.17	7.42
589.B2.0100.050.080	1.0	0.95	0.50	1.5	8.0	4.0	48	2	8.70	8.95	9.15	9.32	9.94
589.B2.0100.050.100	1.0	0.95	0.50	1.5	10.0	4.0	48	2	10.77	11.05	11.27	11.49	12.44
589.B2.0100.050.120	1.0	0.95	0.50	1.5	12.0	4.0	48	2	12.83	13.14	13.38	13.80	14.94
589.B2.0150.075.000	1.5	-	0.75	1.5	-	6.0	60	2	1.67	1.74	1.80	1.85	1.94
589.B2.0150.075.040	1.5	1.45	0.75	1.5	4.0	4.0	48	2	4.54	4.69	4.83	4.95	5.16
589.B2.0150.075.060	1.5	1.45	0.75	1.5	6.0	4.0	48	2	6.62	6.83	7.00	7.14	7.40
589.B2.0150.075.080	1.5	1.45	0.75	1.5	8.0	4.0	48	2	8.70	8.94	9.14	9.30	9.93
589.B2.0150.075.100	1.5	1.45	0.75	1.5	10.0	4.0	48	2	10.76	11.04	11.26	11.44	12.43
589.B2.0150.075.150	1.5	1.45	0.75	1.5	15.0	4.0	60	2	15.91	16.25	16.62	17.25	18.68
589.B2.0150.075.200	1.5	1.45	0.75	1.5	20.0	4.0	60	2	21.03	21.42	22.17	23.02	-

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Einzelheit A

# QUEEN BEE SERIES

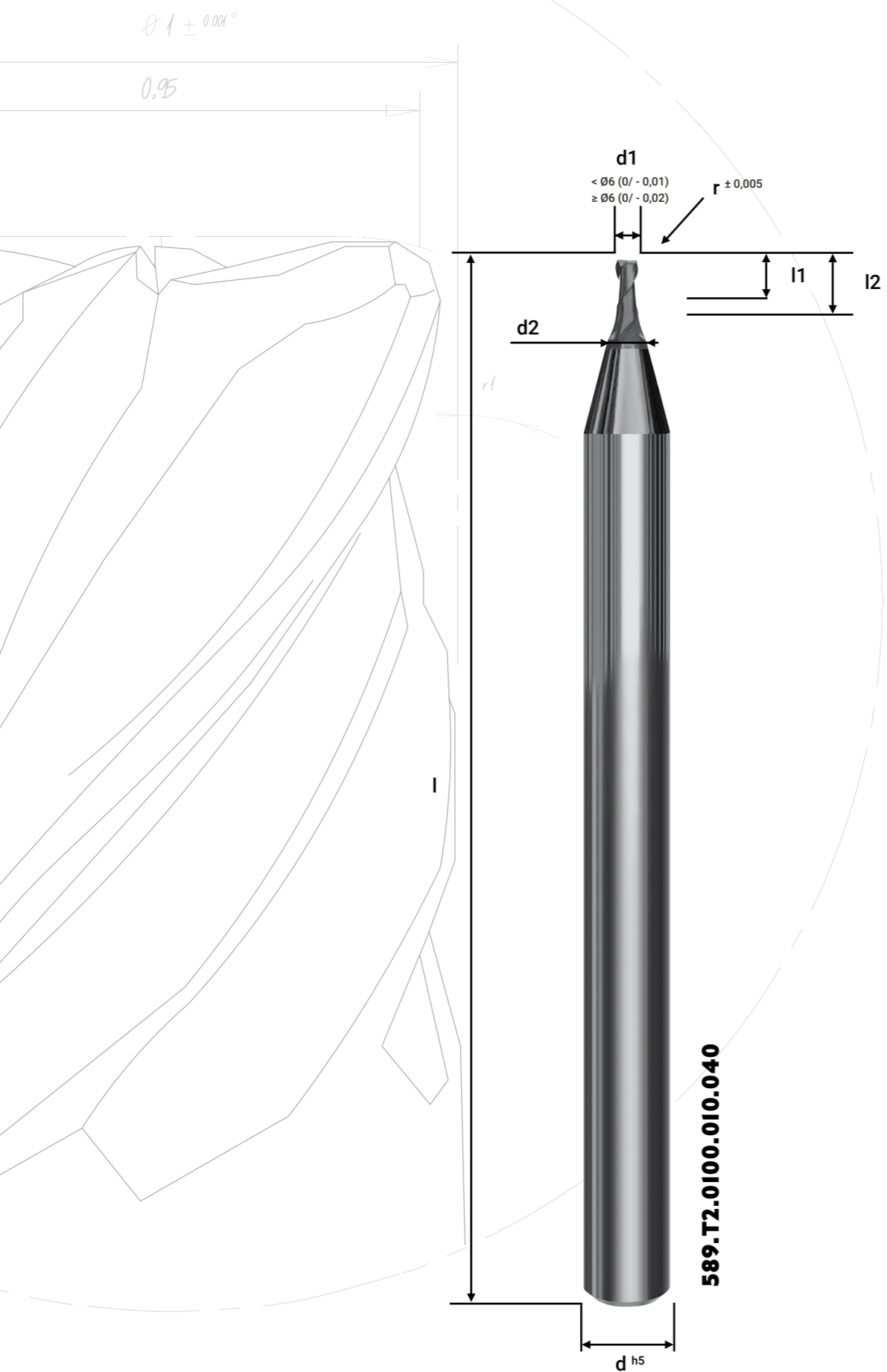


## QUEEN BEE 589.B2 SERIES...CONTINUED

Article No.	d1	d2	r	l1	l2	d	l	z	Inclination Angle				
									30°	1°	1°30'	2°	3°
589.B2.0200.100.000	2.0	-	1.00	2.0	-	6.0	60	2	2.19	2.28	2.34	2.40	2.49
589.B2.0200.100.040	2.0	1.90	1.00	2.5	4.0	4.0	48	2	4.65	4.78	4.90	5.00	5.19
589.B2.0200.100.060	2.0	1.90	1.00	2.5	6.0	4.0	48	2	6.72	6.90	7.05	7.19	7.42
589.B2.0200.100.080	2.0	1.90	1.00	2.5	8.0	4.0	48	2	8.78	9.00	9.18	9.34	9.94
589.B2.0200.100.100	2.0	1.90	1.00	2.5	10.0	4.0	48	2	10.84	11.10	11.30	11.50	12.44
589.B2.0200.100.120	2.0	1.90	1.00	2.5	12.0	4.0	48	2	12.90	13.18	13.39	13.80	14.95
589.B2.0200.100.150	2.0	1.90	1.00	2.5	15.0	4.0	60	2	15.98	16.30	16.64	17.27	18.69
589.B2.0200.100.180	2.0	1.90	1.00	2.5	18.0	4.0	60	2	19.05	19.40	19.97	20.73	-
589.B2.0200.100.200	2.0	1.90	1.00	2.5	20.0	4.0	60	2	21.09	21.41	22.19	23.04	-
589.B2.0300.150.080	3.0	2.90	1.50	3.5	8.0	6.0	60	2	8.77	8.98	9.15	9.30	9.92
589.B2.0300.150.120	3.0	2.90	1.50	3.5	12.0	6.0	60	2	12.89	13.16	13.38	13.79	14.92
589.B2.0300.150.160	3.0	2.90	1.50	3.5	16.0	6.0	60	2	16.99	17.31	17.73	18.40	19.92
589.B2.0300.150.200	3.0	2.90	1.50	3.5	20.0	6.0	60	2	21.08	21.40	11.27	11.49	24.92
589.B2.0300.150.240	3.0	2.90	1.50	3.5	24.0	6.0	70	2	25.17	25.68	26.62	27.63	-
589.B2.0400.200.080	4.0	3.90	2.00	4.5	8.0	6.0	60	2	8.75	8.95	9.11	9.26	9.89
589.B2.0400.200.100	4.0	3.90	2.00	4.5	10.0	6.0	60	2	10.81	11.05	11.24	11.40	12.39
589.B2.0400.200.160	4.0	3.90	2.00	4.5	16.0	6.0	60	2	16.98	17.29	17.72	18.39	19.89
589.B2.0400.200.200	4.0	3.90	2.00	4.5	20.0	6.0	60	2	21.07	21.43	22.16	23.00	12.43
589.B2.0400.200.240	4.0	3.90	2.00	4.5	24.0	6.0	70	2	25.16	25.67	26.61	27.62	18.68
589.B2.0400.200.280	4.0	3.90	2.00	4.5	28.0	6.0	70	2	29.23	29.96	31.05	-	-
589.B2.0500.250.120	5.0	4.90	2.50	5.5	12.0	6.0	60	2	12.86	13.11	13.32	13.75	-
589.B2.0500.250.180	5.0	4.90	2.50	5.5	18.0	6.0	60	2	19.01	19.34	19.93	-	-
589.B2.0600.300.120	6.0	5.90	3.00	6.5	12.0	6.0	60	2	-	-	-	-	-
589.B2.0600.300.160	6.0	5.90	3.00	6.5	16.0	6.0	60	2	-	-	-	-	-
589.B2.0600.300.200	6.0	5.90	3.00	6.5	20.0	6.0	60	2	-	-	-	-	-
589.B2.0800.400.160	8.0	7.90	4.00	8.5	16.0	8.0	60	2	-	-	-	-	-
589.B2.0800.400.240	8.0	7.90	4.00	8.5	24.0	8.0	60	2	-	-	-	-	-
589.B2.1000.500.200	10.0	9.90	5.00	10.5	20.0	10.0	70	2	-	-	-	-	-
589.B2.1000.500.400	10.0	9.90	5.00	10.5	40.0	10.0	90	2	-	-	-	-	-
589.B2.1200.600.240	12.0	11.90	6.00	12.5	24.0	12.0	75	2	-	-	-	-	-
589.B2.1200.600.400	12.0	11.90	6.00	12.5	40.0	12.0	90	2	-	-	-	-	-

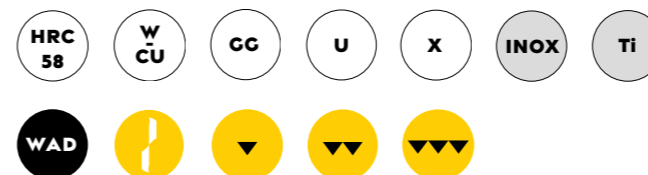
Einzelheit A

# QUEEN BEE SERIES



## QUEEN BEE 589.T2 SERIES

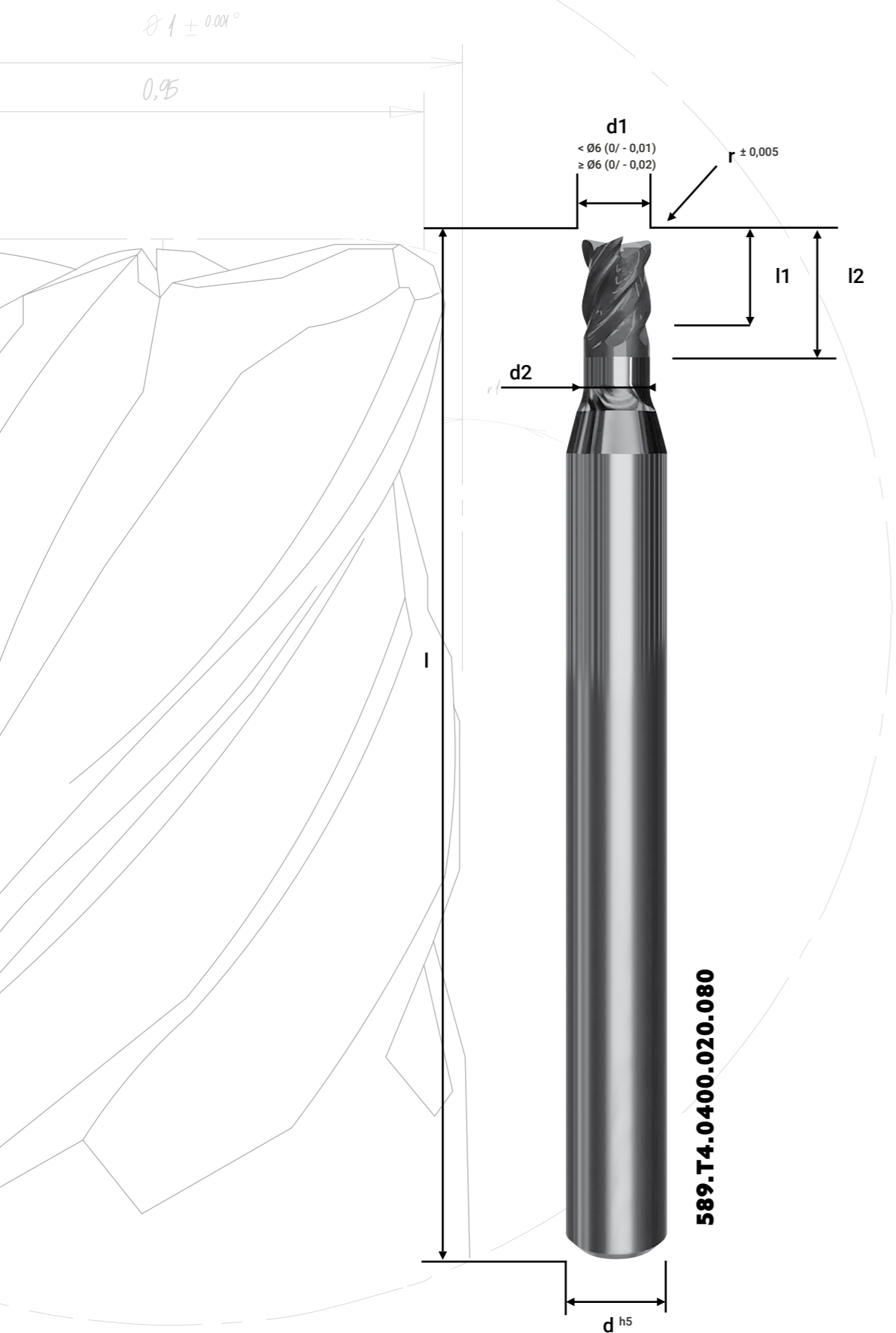
- Solid carbide end mill with corner radius, 2-helix cutting edges with 35° helix angle
- For wet or dry machining of steels up to 58 HRC



Article No.	d1	d2	r	l1	l2	d	l	z	Inclination Angle				
									30°	1°	1°30'	2°	3°
589.T2.0080.005.020	0.8	0.75	0.05	1.0	2.0	4.0	48	2	2.47	2.59	2.70	2.80	2.97
589.T2.0080.005.050	0.8	0.75	0.05	1.0	5.0	4.0	48	2	5.61	5.81	5.98	6.12	6.37
589.T2.0080.005.080	0.8	0.75	0.05	1.0	8.0	4.0	48	2	8.72	8.98	9.18	9.36	9.97
589.T2.0080.020.020	0.8	0.75	0.20	1.0	2.0	4.0	48	2	2.47	2.58	2.68	2.78	2.95
589.T2.0080.020.050	0.8	0.75	0.20	1.0	5.0	4.0	48	2	5.60	5.80	5.96	6.11	6.35
589.T2.0080.020.080	0.8	0.75	0.20	1.0	8.0	4.0	48	2	8.71	8.97	9.17	9.35	9.96
589.T2.0100.010.020	1.0	0.95	0.10	1.5	2.0	4.0	48	2	2.47	2.59	2.69	2.79	2.97
589.T2.0100.010.040	1.0	0.95	0.10	1.5	4.0	4.0	48	2	4.57	4.74	4.89	5.02	5.25
589.T2.0100.020.020	1.0	0.95	0.20	1.5	2.0	4.0	48	2	2.47	2.58	2.68	2.78	2.95
589.T2.0100.020.040	1.0	0.95	0.20	1.5	4.0	4.0	48	2	4.56	4.73	4.88	5.01	5.24
589.T2.0120.010.024	1.2	1.5	0.10	1.8	2.4	4.0	48	2	2.92	3.05	3.17	3.27	3.46
589.T2.0120.010.036	1.2	1.5	0.10	1.8	3.6	4.0	48	2	4.18	4.34	4.49	4.61	4.83
589.T2.0120.010.060	1.2	1.5	0.10	1.8	6.0	4.0	48	2	6.64	6.86	7.04	7.19	7.46
589.T2.0150.020.040	1.5	1.45	0.20	2.0	4.0	4.0	48	2	6.64	4.73	4.88	5.01	5.24
589.T2.0150.020.060	1.5	1.45	0.20	2.0	6.0	4.0	48	2	8.71	6.86	7.04	7.19	7.46
589.T2.0150.020.080	1.5	1.45	0.20	2.0	8.0	4.0	48	2	4.56	8.97	9.17	9.35	9.96
589.T2.0200.020.040	2.0	1.95	0.20	2.5	4.0	4.0	48	2	6.64	4.73	4.88	5.01	5.24
589.T2.0200.020.060	2.0	1.95	0.20	2.5	6.0	4.0	48	2	6.64	6.86	7.04	7.19	7.46
589.T2.0200.020.120	2.0	1.95	0.20	2.5	12.0	4.0	48	2	12.84	13.15	13.40	13.81	14.96
589.T2.0200.050.000	2.0	-	0.50	4.0	-	6.0	60	2	4.27	4.38	4.47	4.35	4.55
589.T2.0200.050.060	2.0	1.95	0.50	4.0	6.0	6.0	60	2	6.63	6.84	7.02	7.17	7.42
589.T2.0300.030.060	3.0	2.90	0.30	3.5	6.0	6.0	60	2	6.74	6.94	7.10	7.25	7.48
589.T2.0300.030.080	3.0	2.90	0.30	3.5	8.0	6.0	60	2	8.81	9.04	9.23	9.40	9.98
589.T2.0300.030.120	3.0	2.90	0.30	3.5	12.0	6.0	60	2	12.92	13.21	13.44	13.83	14.98
589.T2.0300.030.160	3.0	2.90	0.30	3.5	16.0	6.0	60	2	17.02	17.36	17.76	18.45	19.98
589.T2.0300.050.000	3.0	-	0.50	6.0	-	6.0	60	2	6.33	6.46	6.38	6.52	6.82

Einzelheit A

# QUEEN BEE SERIES



## QUEEN BEE 589.T4 SERIES

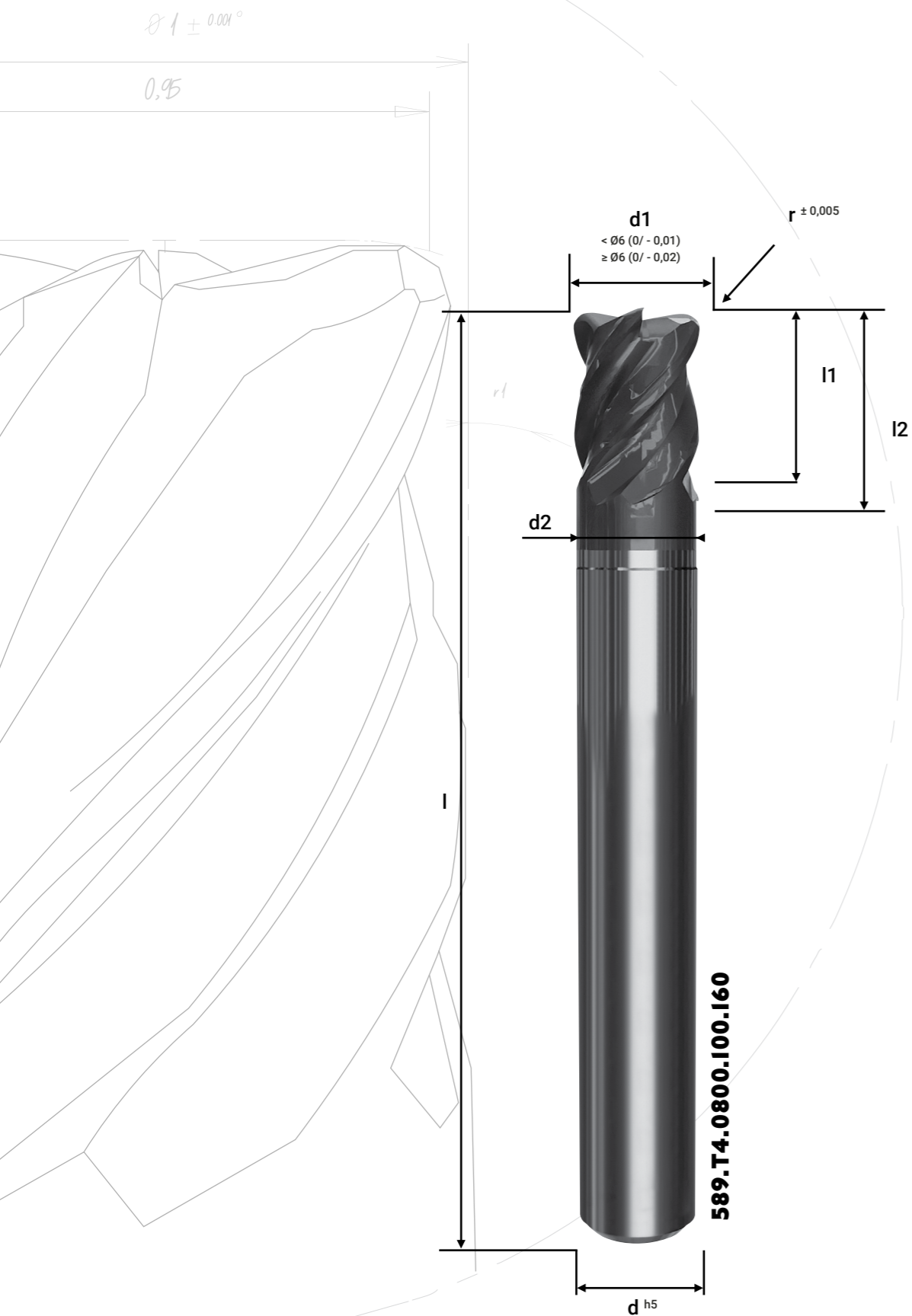
- Solid carbide end mill with corner radius, 4-helix cutting edges with 43°/45° helix angle  
- For wet or dry machining of steels up to 58 HRC



Article No.	d1	d2	r	l1	l2	d	l	z	30°	Inclination Angle			
										1°	1°30'	2°	3°
589.T4.0200.020.040	2.0	1.9	0.2	2.5	4.0	4.0	48	4	4.68	4.83	4.96	5.09	5.30
589.T4.0200.020.060	2.0	1.9	0.2	2.5	6.0	4.0	48	4	6.74	6.94	7.11	7.26	7.48
589.T4.0200.020.120	2.0	1.9	0.2	2.5	12.0	4.0	48	4		13.21	13.32	13.83	14.98
589.T4.0200.050.000	2.0	-	0.5	4.0	-	6.0	60	4	4.27	4.38	4.47	4.35	4.55
589.T4.0300.010.080	3.0	2.9	0.1	3.5	8.0	6.0	60	4	8.81	9.05	9.24	9.41	9.99
589.T4.0300.010.160	3.0	2.9	0.1	3.5	16.0	6.0	60	4		17.37	17.77	18.45	19.99
589.T4.0300.020.080	3.0	2.9	0.2	3.5	8.0	6.0	60	4	8.81	9.04	9.24	9.40	9.98
589.T4.0300.020.160	3.0	2.9	0.2	3.5	16.0	6.0	60	4		17.36	17.77	18.45	19.98
589.T4.0300.030.080	3.0	2.9	0.3	3.5	8.0	6.0	60	4	8.81	9.04	9.24	9.40	9.98
589.T4.0300.030.160	3.0	2.9	0.3	3.5	16.0	6.0	60	4		17.36	17.76	18.45	19.98
589.T4.0300.050.000	3.0	-	0.5	6.0	-	6.0	60	4	6.33	6.46	6.38	6.52	6.82
589.T4.0400.020.080	4.0	3.9	0.2	4.5	8.0	6.0	60	4	8.81	9.04	9.24	9.40	9.98
589.T4.0400.020.120	4.0	3.9	0.2	4.5	12.0	6.0	60	4		13.21	13.32	13.83	14.98
589.T4.0400.040.080	4.0	3.9	0.4	4.5	8.0	6.0	60	4	8.80	9.03	9.22	9.39	9.97
589.T4.0400.040.120	4.0	3.9	0.4	4.5	12.0	6.0	60	4		13.21	13.44	13.83	14.97
589.T4.0400.050.080	4.0	3.9	0.5	4.5	8.0	6.0	60	4	8.80	9.03	9.22	9.38	9.97
589.T4.0400.050.120	4.0	3.9	0.5	4.5	12.0	6.0	60	4		13.20	13.43	13.82	14.97
589.T4.0400.050.200	4.0	3.9	0.5	4.5	20.0	6.0	60	4		21.62	22.02	22.69	-
589.T4.0400.050.300	4.0	3.9	0.5	4.5	30.0	6.0	60	4		31.98	32.95	-	-
589.T4.0400.100.080	4.0	3.9	1.0	4.5	8.0	6.0	60	4	8.78	9.00	9.18	9.34	9.94
589.T4.0400.100.120	4.0	3.9	1.0	4.5	12.0	6.0	60	4		13.18	13.41	13.81	14.94
589.T4.0500.020.080	5.0	4.9	0.2	5.5	8.0	6.0	60	4	8.81	9.04	9.24	9.40	9.98
589.T4.0500.020.150	5.0	4.9	0.2	5.5	15.0	6.0	60	4		16.33	16.66	-	-
589.T4.0500.050.080	5.0	4.9	0.5	5.5	8.0	6.0	60	4	8.80	9.03	9.22	9.38	9.97
589.T4.0500.050.150	5.0	4.9	0.5	5.5	15.0	6.0	60	4		16.32	16.65	-	-

continued on next page...

# QUEEN BEE SERIES



## QUEEN BEE 589.T4 SERIES...CONTINUED

Article No.	d1	d2	r	l1	l2	d	l	z	Inclination Angle				
									30'	1°	1°30'	2°	3°
589.T4.0600.020.120	6.0	5.9	0.2	6.5	12.0	6	60	4	-	-	-	-	-
589.T4.0600.020.200	6.0	5.9	0.2	6.5	20.0	6	60	4	-	-	-	-	-
589.T4.0600.030.120	6.0	5.9	0.3	6.5	12.0	6	60	4	-	-	-	-	-
589.T4.0600.030.200	6.0	5.9	0.3	6.5	20.0	6	60	4	-	-	-	-	-
589.T4.0600.050.120	6.0	5.9	0.5	6.5	12.0	6	60	4	-	-	-	-	-
589.T4.0600.050.200	6.0	5.9	0.5	6.5	20.0	6	60	4	-	-	-	-	-
589.T4.0600.060.120	6.0	5.9	0.6	6.5	12.0	6	60	4	-	-	-	-	-
589.T4.0600.060.200	6.0	5.9	0.6	6.5	20.0	6	60	4	-	-	-	-	-
589.T4.0800.050.160	6.0	7.9	0.5	8.5	16.0	8	60	4	-	-	-	-	-
589.T4.0800.050.400	6.0	7.9	0.5	8.5	40.0	8	80	4	-	-	-	-	-
589.T4.0800.100.160	6.0	7.9	1.00	8.5	16.0	8	60	4	-	-	-	-	-
589.T4.0800.100.400	6.0	7.9	1.00	8.5	40.0	8	80	4	-	-	-	-	-
589.T4.0800.200.160	6.0	7.9	2.00	8.5	16.0	8	60	4	-	-	-	-	-
589.T4.0800.200.400	8.0	7.9	2.00	8.5	40.0	8	80	4	-	-	-	-	-
589.T4.1000.050.200	8.0	9.9	0.5	10.5	20.0	10	70	4	-	-	-	-	-
589.T4.1000.050.400	10.0	9.9	0.5	10.5	40.0	10	90	4	-	-	-	-	-
589.T4.1000.100.200	10.0	9.9	1.0	10.5	20.0	10	70	4	-	-	-	-	-
589.T4.1000.100.300	10.0	9.9	1.0	10.5	30.0	10	70	4	-	-	-	-	-
589.T4.1000.100.400	10.0	9.9	1.0	10.5	40.0	10	90	4	-	-	-	-	-
589.T4.1000.100.500	10.0	9.9	1.0	10.5	50.0	10	90	4	-	-	-	-	-
589.T4.1000.200.200	10.0	9.9	2.0	10.5	20.0	10	70	4	-	-	-	-	-
589.T4.1000.200.400	10.0	9.9	2.0	10.5	40.0	10	90	4	-	-	-	-	-
589.T4.1200.100.240	10.0	11.9	1.0	12.5	24.0	12	70	4	-	-	-	-	-
589.T4.1200.100.400	12.0	11.9	1.0	12.5	40.0	12	90	4	-	-	-	-	-
589.T4.1200.200.240	12.0	11.9	2.0	12.5	24.0	12	70	4	-	-	-	-	-
589.T4.1200.200.400	12.0	11.9	2.0	12.5	40.0	12	90	4	-	-	-	-	-

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# QUEEN BEE SERIES

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## SERIES OVERVIEW

The QUEEN BEE Series has several variations, which we break down below. Here you will find a brief explanation of the tool series as well as relevant symbols for the properties of the tools. More information about the series and a legend to the symbols can be found on the following pages.

Series	Suitable Materials						Suitable Machining Processes							Coating	Tool design						
	Cast Iron	High-alloy steel	Suitable Materials	Stahl < 1.000N/mm <sup>2</sup>	Titanium	Tungsten Coppe	Drilling	Roughing	Pre-Finish- ing	Finishing	Dry	Wet	HSC	WAD	Geometry	Flutes	Center Cut	Soft-Cut Geometry	Helix Flutes	Internal cooling	Measure- ment protocol
589.B2	xx	xx	x	xx	x	xx		x	x	x	x	x	x	x	Ball	2	x	x	x		
589.T2	xx	xx	x	xx	x	xx		x	x	x	x	x	x	x	Toric	2	x	x	x		
589.T4	xx	xx	x	xx	x	xx		x	x	x	x	x	x	x	Toric	4		x	x		

<sup>1</sup> „xx“ indicates that it is optimally designed for processing this material, „x“ indicates that it also works in this material.

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# QUEEN BEE SERIES

## ICON LEGEND

- White background icons represent Primary Recommended Materials
- Grey background icons represent Secondary Recommended Materials
- Icons to represent tool coating
- Icons to represent the tool design properties
- Icons to represent the indication types of the tool

## ICONS

### Material Icons

<b>HRC 58</b> STATED HARDNESS	<b>W CU</b> TUNGSTEN COPPER	<b>CG</b> CAST IRON	<b>U</b> < 1.000 N/MM <sup>2</sup> STEEL	<b>X</b> HIGH-ALLOY STEEL	<b>INOX</b> STAINLESS STEEL	<b>Ti</b> TITANIUM
----------------------------------	--------------------------------	------------------------	---	------------------------------	--------------------------------	-----------------------

### Coating

**WAD**  
WAD COATING

### Tool properties

<b>2-FLUTES WITHOUT CENTER CUT</b>	<b>2-FLUTES WITH CENTER CUT<sup>1</sup></b>	<b>4-FLUTES WITHOUT CENTER CUT</b>	<b>4-FLUTES WITH CENTER CUT<sup>1</sup></b>
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### Recommended use

<b>ROUGHING</b>	<b>PREFINISHING</b>	<b>FINISHING</b>
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<sup>1</sup> Please note point 5 under 'Important information' on the next page.

## FURTHER INFO

Safety instructions:

1. Tools have the finest cutting edge geometry (cutting edge finishing)
2. Tools are designed for use in high-speed machining (HSC)
3. Tools are ideally suited for wet and dry machining
4. High concentricity of the machine is essential for the safe and efficient use of our end mills and drills
5. A tool with a central cut is not necessarily suitable for a plunging process! In this case, consult ZECHA support

## AWARD-WINNING: AWARDS FOR OUTSTANDING PERFORMANCE

Only with motivated, positive thinking and independent personalities can a company exist and grow together on new challenges. ZECHA is proud of all its employees for their tireless commitment, passion for progress and willingness to actively contribute to innovation. The awards are the result of creative collaboration and a tribute to the industry.



### INNOVATION AWARD OF THE STATE OF BADEN-WÜRTTEMBERG

In 2021, ZECHA Hartmetall-Werkzeugfabrikation GmbH was awarded the Innovation Prize of the State of Baden-Württemberg for the first time. The prize was awarded for the development of a tool family with diamond-coated micro-precision tools that offer outstanding performance in machining the most demanding materials with smooth surfaces. These achievements set new standards worldwide in the field of precision tools.



### TOP 100-AWARD

With its outstanding innovation management, ZECHA Hartmetall-Werkzeugfabrikation GmbH receives the TOP 100 seal 2023, an award that is only given to particularly innovative medium-sized companies. The competition is based on a scientific selection process. The decisive factor is whether a company's innovations are random or systematically planned and will be repeatable in the future.

# QUEEN BEE SERIES

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# ZECHA

*außergewöhnlich.*



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## THE NEW ZECHA BRANDING

Over the years, brands consistently evolve and transform to meet the changing needs and preferences of their consumers. In the competitive landscape of 2024, ZECHA is poised to introduce its new brand identity, marking a significant milestone in its journey. The unveiling of the ZECHA branding represents a culmination of the brand's growth and commitment to excellence.

At the core of the new ZECHA logo lies a perfect circle, which symbolizes the meticulous process of the first step in the process of making all tools at ZECHA, which is grinding tools into flawless cylinders. This iconic image embodies ZECHA's

dedication to precision and quality. It signifies the brand's unwavering pursuit of perfection, ensuring that every tool manufactured by ZECHA is perfectly concentric, guaranteeing superior performance.

In the new branding, ZECHA also integrates the word "außergewöhnlich" into various visuals. Derived from the German language, "außergewöhnlich" translates to "extraordinary" in English. This carefully chosen word encapsulates the overarching goal of every product created by ZECHA. It signifies the brand's commitment to delivering exceptional tools that surpass expectations and set new standards within the industry.

The ZECHA Logo through the years:





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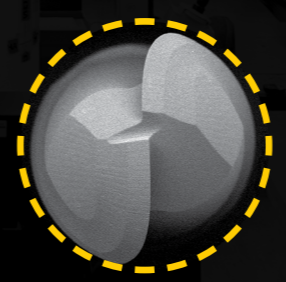


# ZECHA'S COMMITMENT TO EXCELLENCE

## OVER HALF A CENTURY OF PRECISION

ZECHA Hartmetall-Werkzeugfabrikation GmbH is a precision tool manufacturer that has been in Baden-Württemberg, Germany for nearly 60 years. With a focus on manufacturing high quality micro tools, we pride ourselves on providing our customers with the highest level of precision and consistency in our products. Our state-of-the-art manufacturing and measurement technologies allow us to maintain the highest quality standards and ensure that our tools meet our customers' needs.

With a focus on innovation and the constant research of new technologies, we improve the precision and efficiency of our tools. This philosophy allows us to stay at the forefront of the industry and provide our customers with state-of-the-art solutions for their tooling needs.

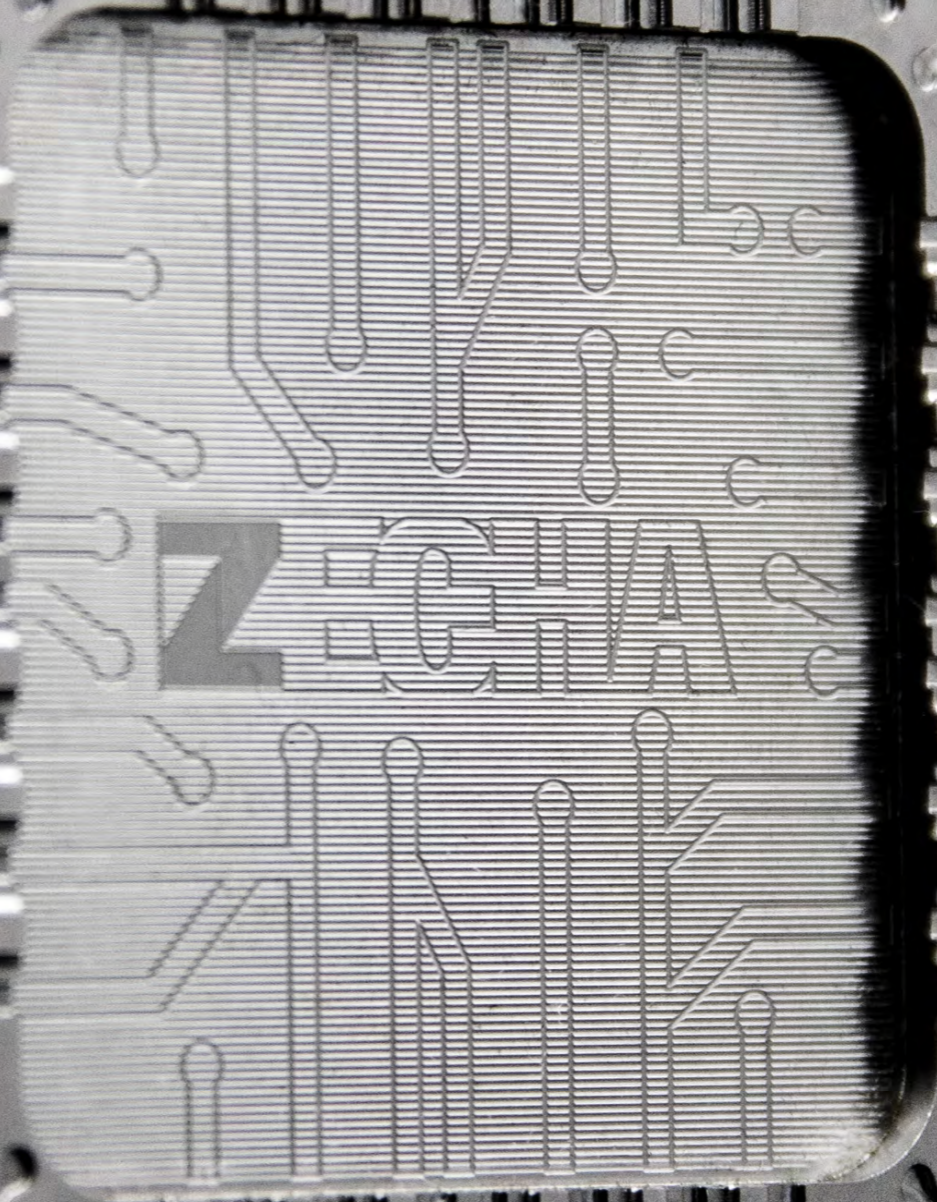


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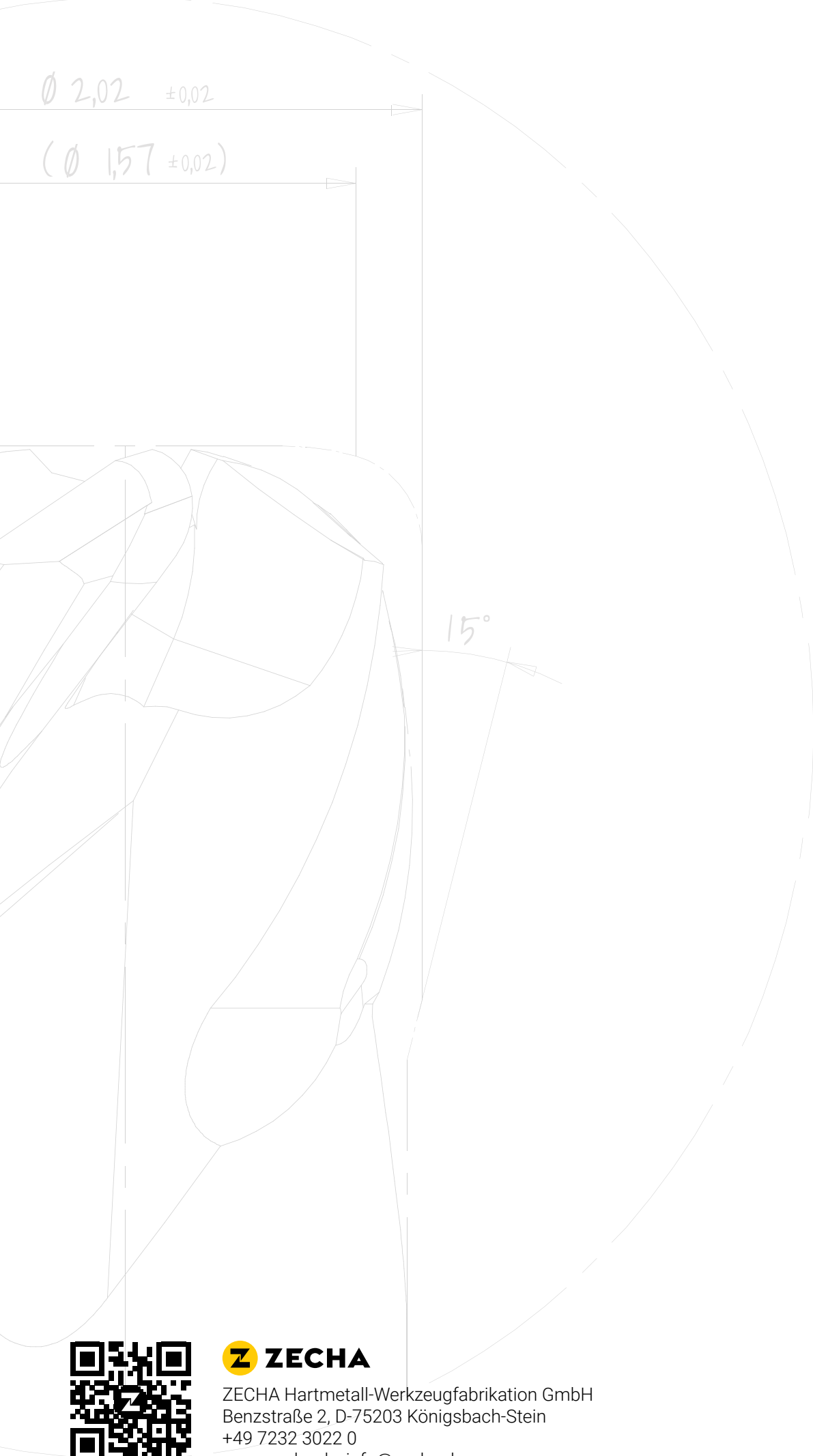
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**ZECHA**

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