GÜHRING

Optimised for an impressive increase in performance

new

Pionex

The new generation of threading tools

Pionex tap blind hole

Performance & dimensional accuracy down to the bottom

Optimised blind hole tap for maximum tool lives

When machining deep blind holes, chips often become a problem: If they do not flow away safely, they can damage the tool and component. This is why we focussed on improving chip removal when further developing the Pionex blind hole tap.

The combination of an optimised flute shape and a Slidur coating specially adapted to the machining operations favours the targeted removal of chips from the hole. The new geometry also eliminates the need for cutting edge rounding, which results in lower process forces and longer tool lives. At the same time, this gives the tool greater stability, especially in the smallest diameter range. The ground centre point also makes it possible to produce threads almost to the bottom of the hole.

x **Process forces** reduced by 20 %

x **Tool life** up to 30 % higher

- X outstanding tool lives thanks to optimised geometry & coating
- X higher tool stability, especially in the smallest diameter range
- X better chip formation due to new flute geometry
- X universal suitability reduces the variety of tools

without centre point
for threads up to the base

optimised
flute shape

wear-resistant
Slidur coating

available in the dimensions
3xD, M3 – M16

Application example

Material:	C45 (1.0503)	
Tool:	Pionex tap #8330	
Dimension:	M8	
Thread depth:	20 mm	
Cutting data:	**Gühring** v_c 15 m/min **N** 597 1/min v_f 746.25 mm/min	**Competition** v_c 15 m/min **N** 597 1/min v_f 746.25 mm/min
Tool life:	45 min	39 min

Pionex tap through-hole

Wear under control thanks to geometry & coating

Our further development for better performance when drilling through-threads

Stronger and more robust: By optimising this thread specialist, we have succeeded in reducing the process forces when drilling through-threads. The result: The wear is equally distributed, which means that the tap achieves up to 20 per cent longer tool lives.

For even better chip formation, we have changed the geometries of the flutes and the spiral point. A new flute geometry also leads to greater tool stability, especially in the smallest diameter range. We also rely on the tried-and-tested Sirius coating for this tap, which is ideal for machining through-threads and makes the tool wear-resistant and universal in use.

x **Tool life** increased by up to 20 %

- X reduced process forces thanks to new macro-geometry
- X optimised flute shape for perfect chip control
- X stable structure and customised coating reduce wear
- X for universal application in a wide range of materials

Application example

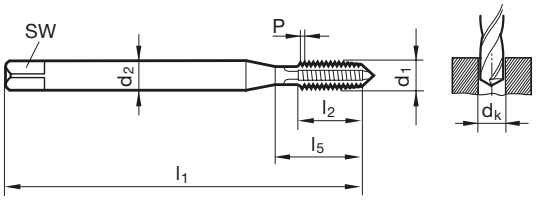
Material:	V2A (1.4305)	
Tool:	Pionex tap #8354	
Dimension:	M10	
Thread depth:	25 mm	
Cutting data:	**Gühring**	**Competition**
	v_c 12 m/min **N** 382 1/min v_f 573 mm/min	v_c 12 m/min **N** 382 1/min v_f 573 mm/min
Tool life:	145 min	125 min

Taps for ISO metric threads

Article no. **8354**

NEW | HSS-E | S | 6HX | R | Cyl | B | 3xD

P	M	K	N	S	H
●	●	●	●	○	



Standard **DIN 371**

Article no. **8354**

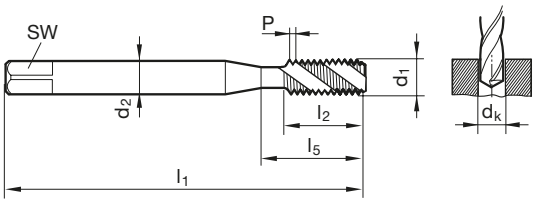
d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm		Order no.
M3	0.500	3.50	2.70	2.50	56.00	10.00	18.00	DIN 371	8354 3.000
M4	0.700	4.50	3.40	3.30	63.00	12.00	21.00	DIN 371	8354 4.000
M5	0.800	6.00	4.90	4.20	70.00	14.00	25.00	DIN 371	8354 5.000
M6	1.000	6.00	4.90	5.00	80.00	16.00	30.00	DIN 371	8354 6.000
M8	1.250	8.00	6.20	6.80	90.00	17.00	35.00	DIN 371	8354 8.000
M10	1.500	10.00	8.00	8.50	100.00	20.00	39.00	DIN 371	8354 10.000
M12	1.750	9.00	7.00	10.20	110.00	24.00	49.00	DIN 376	8354 12.000
M14	2.000	11.00	9.00	12.00	110.00	26.00	53.00	DIN 376	8354 14.000
M16	2.000	12.00	9.00	14.00	110.00	26.00	54.00	DIN 376	8354 16.000

Taps for ISO metric threads

Article no. **8330**

NEW | HSS-E | X | 6HX | R | Cyl | C | 3xD

P	M	K	N	S	H
●	●	●	●	○	



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M16	2.000	12.00	9.00	14.00	110.00	20.00	54.00	DIN 376	8330 16.000

Taps Pionex

Machining group	Blind holes	Through-holes
	HSS-E	HSS-E
	A	S
	v_c (m/min)	
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	18	18
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	18	18
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	18	18
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	18	18
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	18	18
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	15	15
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	13	13
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	18	18
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	15	15
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	13	13
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	11	11
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	11	11
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	11	11
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	11	11
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	11	11
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	6	6
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	4	4
M2.2.1 Duplex steel, high-strength stainless steels	3	3
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB	14	14
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB	14	14
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB	14	14
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB	14	14
K1.3.1 Malleable cast iron, ferritic, 130 HB	14	14
K1.3.2 Malleable cast iron, pearlitic, 230 HB	14	14
K2.1.1 Vermicular graphite cast iron (GJV)	9	9
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)	9	9
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB	25	25
N1.1.2 Wrought aluminium alloys, hardened, 100 HB	25	25
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB	20	20
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB	20	20
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB	15	15
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %		
N3.1.2 Copper and copper alloys: CuZn, CuSnZn		
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte		
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics		
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.		
N4.1.3 Non-metallic materials: Graphite		
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	2	2
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	2	2
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	2	2
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	2	2
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	2	2
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	2	2
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	2	2
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC		
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC		
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC		
H2.1.1 Chilled cast iron, 400 HB		
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC		

All the values stated are guide values. You can find detailed cutting values online in our Gühring Navigator at webnavigator.guehring.de/en.

Pionex threading tools

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GÜHRING

Gühring KG | P.O. Box 100247 | 72423 Albstadt | Germany
Gühring KG | Herderstrasse 50–54 | 72458 Albstadt | Germany
Telephone: +49 74 31 17-0 | info@guehring.de | www.guehring.com

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