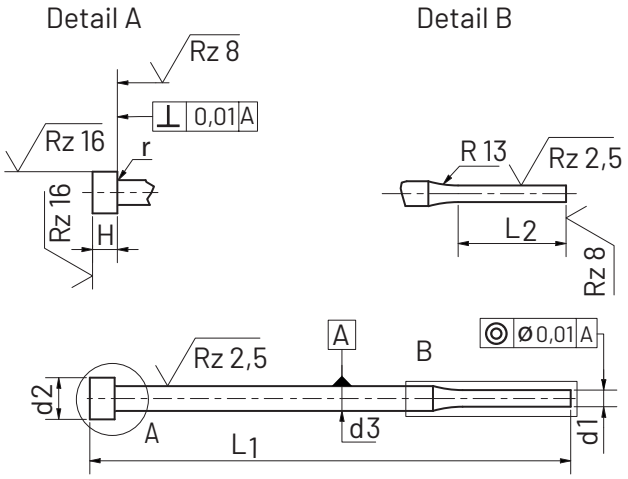
3 Prebijalna igla
Cutting Punch

DIN ISO 8020 B





Prebijalna igla s cilindrično glavo.

Punch with cylindrical head

Precizno zglajena rezilna igla z reducirnim rezilnim delom in cilindrično glavo, brušeno.

Precision smoothed Punch Pin with reduced point and cylindrical head, plunge cut ground.

Obseg uporabe:
V rezilnih orodjih za rezanje lukenj v plošče. Dimenzije so prikazane v tabeli.

Range of application:
Cutting tools for cutting holes in the plates. The dimensions are shown in the table.

Prileganje / Toleranca:
Reducirni del premer d_3, dolžina $L_{1+0,5}$

Fit / Tolerance:
Reduced point diameter d_3, the length $L_{1+0.5}$

Ø	0,8-3	3-6	6-10	10-18	18-30	30-31,9
	+0,004	+0,006	+0,009	+0,008	+0,009	+0,011
J6	-0,002	-0,002	-0,002	-0,003	-0,004	-0,005

Steblo premer d1, dolžina l+1

Stem diameter d1, length L+1

Ø	3	4+5+6	8+10	13+16	20+25	32
	+0,006	+0,009	+0,012	+0,015	+0,017	+0,020
M5	+0,002	+0,004	+0,006	+0,007	+0,008	+0,009

Material:
HSS (Hitrorezna jekla)
HWS (Jeklo za hladno preoblikovanje)

Material:
HSS (High speed steels)
HWS (Cold working tool steel)

Karakteristike:
HWS: visoka trpežnost, dolga življenjska doba
HSS: ekstremno visoka trpežnost, za materiale s katerimi se težko dela. Velika odpornost proti obrabi. Visoka natezalna trdnost, visoka odpornost proti vročini.

Material properties:
HWS: high durability, long life
HSS: extremely high durability for materials that are difficult to process. High abrasion resistance. High tear strength, high heat resistance.

Opomba | Note

HSS igle so lahko na zahtevo prevlečene s posebno prevleko. Možne so tudi igle iz volfram karbida (hartmetall).

HSS punch pins can be coated with a special coating upon request. Tungsten carbide (hartmetall) coating possible.

Trdota:
Steblo: WS 60 -64 / HWS 60-64
Glava: WS 40 -50 / HWS 45-55

Hardnes:
Shaft: WS 60 -64 / HWS 60-64
Head: WS 40 -50 / HWS 45-55

Obdelava:
Kaljeno, popuščeno, 60° stožčasta vroče kovana glava, naknadno brušeno po celotni dolžini, vključno z glavo.

Finish:
Hardened, tempered, 60 ° conical hot-forged head, subsequently ground over the entire length, including the head.

Ø d3 j6	Stopnje-vanje Gradiation d3	Ø d2-0,25	Ø d1 m5	T+0,25	r ±0,1	L1 +0,5 0	L+1				
							63	71	80	90	100
0,8 - 2,9	0,10	5	3	3	0,20	10	●	●	●		
1,0 - 3,9		6	4				●	●	●		
1,0 - 4,9		8	5	5	0,30		●	●	●		
1,6 - 5,9		9	6				●	●	●	●	●
2,5 - 7,9		11	8			13	●	●	●	●	●
4,0 - 9,9		13	10			17	●	●	●	●	●
5,0 - 12,9		16	10		0,4		●	●	●	●	●
8,0 - 15,9		19	16				●	●	●	●	●
12,0 - 19,5		24	20					●	●	●	●
16,5 - 24,5	0,50	29	25					●	●	●	●
20,0 - 31,9		36	32					●	●	●	●

L2 10 mm

Ø d1 h6 [mm]	Stopnjevanje Gradation d2	d2 0 - 0,15 [mm]	d3 h6 [mm]	H 0 -0,2 [mm]	R 0 -0,2 [mm]	L2 +0,05 0 [mm]	L1 +0,05 +0,2			
							71	80	90	100
0,8 -1,9		5	3	3	0,2	10	●	●		
2,0 -2,9	0,1	5					●	●		
1,0-1,9		6	4				●	●		
2,0 - 2,9							●	●		
3,0 - 3,9			5				●	●		
1,2 - 1,9		8		5	0,2		●	●		
2,0 - 2,9							●	●		
3,0 - 3,9							●	●		
4,0 - 4,9							●	●		
1,6 - 2,9		9	6				●	●	●	●
3,0 - 3,9							●	●	●	●
4,0 - 4,9							●	●	●	●
5,0 - 5,9							●	●	●	●

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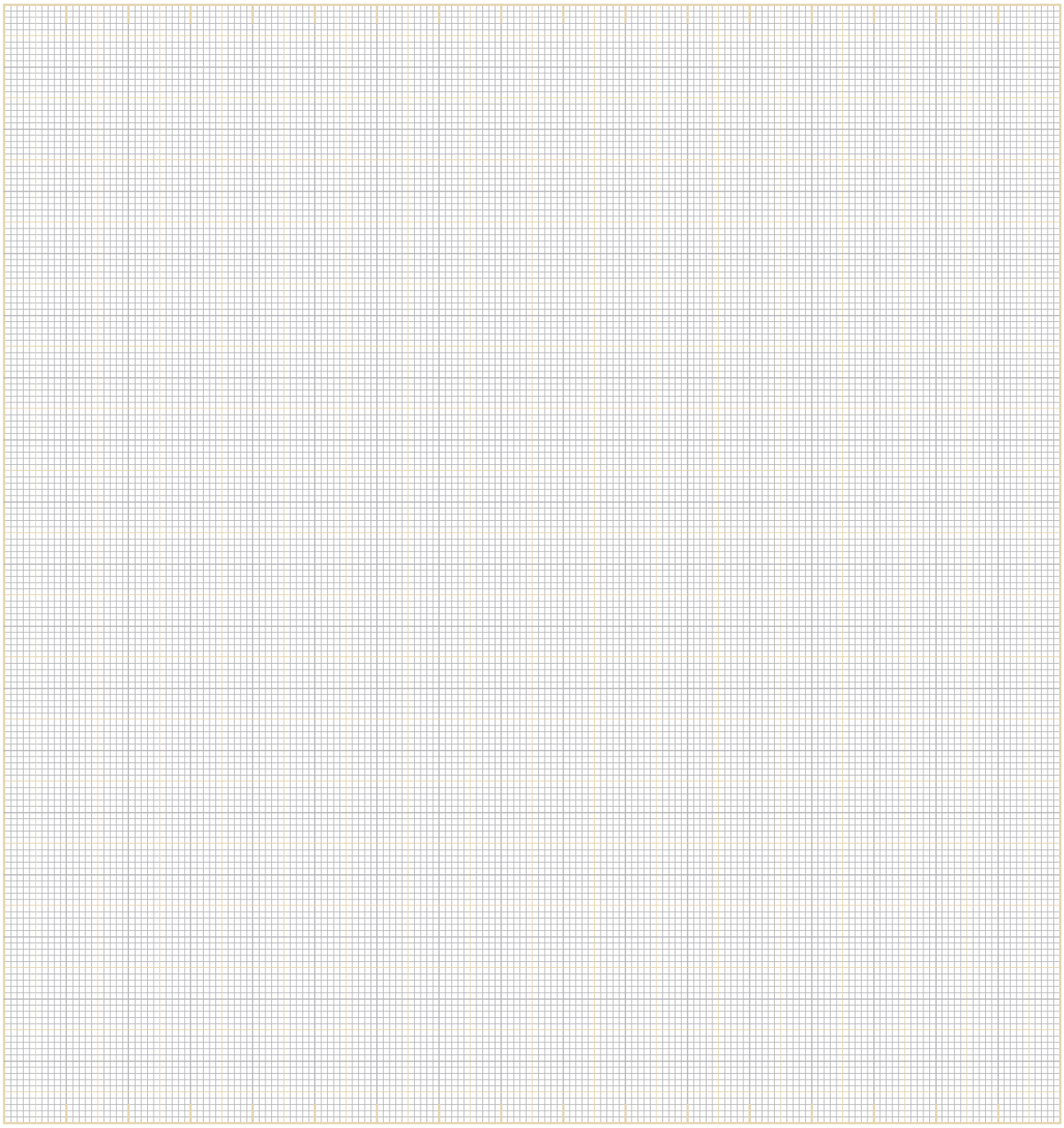
3 Rezilna igla
Punch Pin

L2 13 mm

Ø d1 h6 [mm]	Stopnjevanje Gradation d2	d2 0 - 0,15 [mm]	d3 h6 [mm]	H 0 -0,2 [mm]	R 0 -0,2 [mm]	L2 +0,05 0 [mm]	L1 +0,05 +0,2			
							71	80	90	100
2,5-3,9		11	8	5	0,3	13	●	●	●	●
4,0-4,9	0,1						●	●	●	●
5,0-5,9							●	●	●	●
6,0-6,9							●	●	●	●
7,0-7,9							●	●	●	●

L2 17 mm

Ø d1 h6 [mm]	Stopnjevanje Gradation d2	d2 0 - 0,15 [mm]	d3 h6 [mm]	H 0 -0,2 [mm]	R 0 -0,2 [mm]	L2 +0,05 0 [mm]	L1 +0,05 +0,2			
							71	80	90	100
4,0-4,9		13	10	5	0,3	17	●	●	●	●
5,0-5,9	0,1						●	●	●	●
6,0-6,9							●	●	●	●
7,0-7,9							●	●	●	●
8,0-8,9							●	●	●	●
9,0-9,9							●	●	●	●
5,0-5,9		16	13		0,4		●	●	●	●
6,0-6,9							●	●	●	●
7,0-7,9							●	●	●	●
8,0-8,9							●	●	●	●
9,0-9,9							●	●	●	●
10,0-10,9							●	●	●	●
11,0-11,9							●	●	●	●
12,0-12,9							●	●	●	●
8,0-8,9		19	16				●	●	●	●
10,0-10,9							●	●	●	●
11,0-11,9							●	●	●	●
12,0-12,9		0					●	●	●	●
13,0-13,9							●	●	●	●
14,0-14,9							●	●	●	●
15,0-15,9							●	●	●	●
12,0-13,0		23	20					●	●	●
13,5-14,5								●	●	●
15,0-16,0								●	●	●
16,5-17,5								●	●	●
18,0-19,5								●	●	●
19,5-21,5			28					●	●	●
22,0-23,0								●	●	●



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