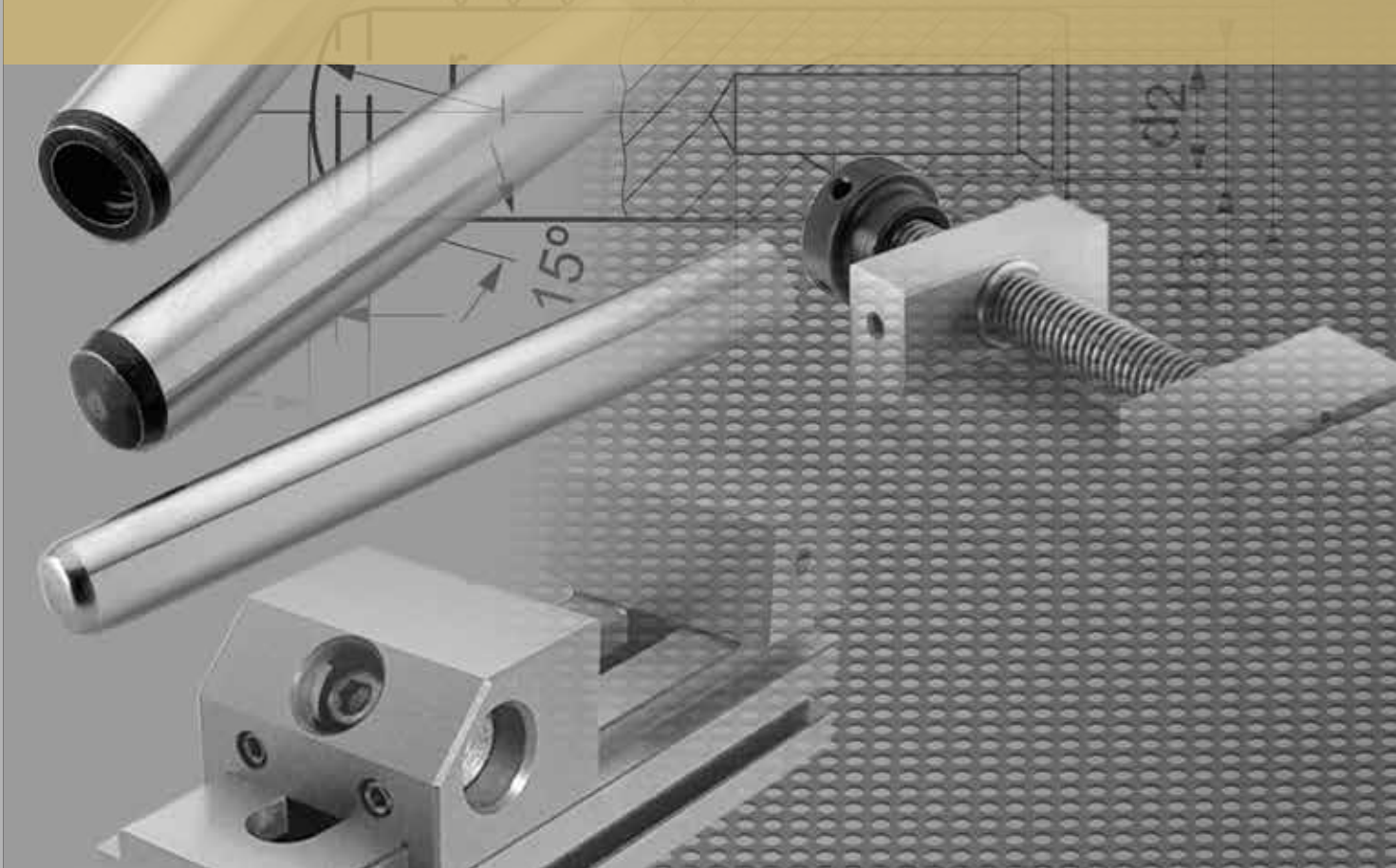


Zatiči se uporabljajo za pričvrstitev lamel, delov orodja ali posameznih kosov. Narejeni so iz materiala, odpornega na obrabo, zahvaljujoč kaljenemu jeklu. Po naročilu jih izdelujemo tudi iz drugih materialov.

Dowel pins are used for fastening lamellae, tool parts or individual parts. Being made from hardened steel, they are highly wear resistant. They can also be manufactured from other materials on request.

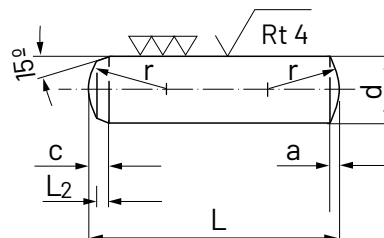


4 Zatiči

Dowel Pin

ISO 8734 DIN 6325

Kaljeni / Hardened



Cylindrical Dowel Pin.

Cilindrični zatič.

Obdelava:

Kaljeno, napuščeno, fino brušeno na toleranco m6. Površina je po želji bronirana.

Material:

Orodno jeklo

Trdota:

HRC 60 +/- 2

Primer naročila:

Cilindrični zatič premera 10 mm in dolžine 80 mm:
Cilindrični zatič: $\varnothing 10 \times 80$

Finish:

Fully hardened and tempered, fine ground to m6, chamfered both ends. The surface optionally Bright Zinc coated.

Material:

Tool steel

Hardness:

HRC 60 +/- 2

Order example:

Cylindrical dowel pin of 10 mm and a length of 80 mm:
Cylindrical dowel pin: $\varnothing 10 \times 80$

Opomba | Note

Zatiče izdelamo tudi v toleranci, ki jo predlaga stranka (m5, h4).

Zaključek zatiča po izbiri proizvajalca.

Other tolerances upon request (m5, h4).

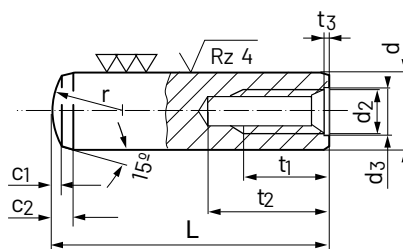
Permissible pin end at manufacturer's choice.



d	m6	0,8	1	1,5	2	2,5	3	4	5	6	8	10	12	13	14	16	20				
a	≈	0,12	0,12	0,20	0,25	0,3	0,4	0,5	0,63	0,8	1	1,2	1,6	2	2	2	2,5				
c		0,46	0,5	0,6	0,8	1	1,2	1,4	1,7	2,1	2,6	3	3,8	3,8	3,8	4,6	6				
r1	min	-	-	0,2	0,2	0,3	0,3	0,4	0,4	0,4	0,5	0,6	0,6	0,7	0,7	0,8	0,8				
	max	-	-	0,6	0,6	0,7	0,8	0,9	1	1,1	1,3	1,4	1,6	1,7	1,7	1,8	2				
Nom. vrednost Nominal value	L																				
	min	max																			
4	3,75	4,25	●	●	●	●															
5	4,75	5,25	●	●	●	●	●	●													
6	5,75	6,25	●	●	●	●	●	●	●	●											
8	7,75	8,25	●	●	●	●	●	●	●	●	●	●									
10	9,75	10,25	●	●	●	●	●	●	●	●	●	●									
12	11,50	12,50	●	●	●	●	●	●	●	●	●										
14	13,50	14,50			●	●	●	●	●	●	●	●	●								
16	15,50	16,50			●	●	●	●	●	●	●	●	●								
18	17,50	18,50			●	●	●	●	●	●	●	●	●								
20	19,50	20,50			●	●	●	●	●	●	●	●	●	●	●						
24	23,50	24,50			●	●	●	●	●	●	●	●	●	●	●	●	●				
28	27,50	28,50			●	●	●	●	●	●	●	●	●	●	●	●	●				
32	31,50	32,50			●	●	●	●	●	●	●	●	●	●	●	●	●				
36	34,50	35,50					●	●	●	●	●	●	●	●	●	●	●				
40	39,50	40,50			●			●	●	●	●	●	●	●	●	●	●				
45	44,50	45,50						●	●	●	●	●	●	●	●	●	●				
50	49,50	50,50							●	●	●	●	●	●	●	●	●				
55	54,25	55,75								●	●	●	●	●	●	●	●				
60	59,25	60,75									●	●	●	●	●	●	●				
70	69,25	70,75										●	●	●	●	●	●	●			
80	79,25	80,75											●	●	●	●	●	●			
90	89,25	90,75												●	●	●	●	●			
100	99,25	100,75													●	●	●	●			
120	119,25	120,75															●	●	●	●	●

4 Zatiči Dowel Pin

ISO 8735 DIN 7979



Zatič z notranjim navojem.

Dowel pin with internal thread.

Obdelava:

Kaljeno, napuščeno, fino brušeno na toleranco m5. Površina je bronirana.

Material:

Orodno jeklo

Trdota:

HRC 60 +/- 2

Primer naročila:

Cilindrični zatič z notranjim navojem premera 6 mm in dolžine 50 mm:
Cilindrični zatič: DIN 7979 \varnothing 6 x 50.

Finish:

Hardened, tempered and precision ground to ISO tolerance m5. The surface is burnished.

Material:

Tool steel

Hardness:

HRC 60 +/- 2

Order example:

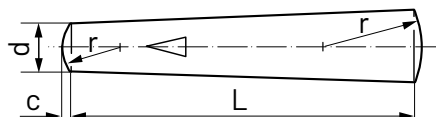
The tapered dowel pin with internal thread 6 x 50 mm.
Cylindrical dowel pin DIN 7979 \varnothing 6 x 50.



d	m6	4	5	6	8	10	12	13	14	16	20
r		4	5	6	8	10	12	13	14	16	20
d ²		M3	M3	M4	M5	M6	M6	M6	M8	M8	M10
d ³		3,3	3,3	4,3	5,3	6,4	6,4	6,4	8,4	8,4	10,5
t ¹		4,5-6	4,5-6	6	8	10	10	12	12	12	16
t ²	min	7-10	7-10	10	12	16	16	18	20	20	25
t ³		0,8	0,8	1	1,2	1,2	1,2	1,2	1,2	1,5	1,5
a		0,4	0,5	0,8	1,0	1,2	1,6	1,8	1,8	2,0	2,5
C		1,3	1,7	2,1	2,6	3,0	3,8	3,8	4,0	4,6	6,0
L	js 15										
	8		•								
	10	•	•								
	12	•	•	•							
	14	•	•	•							
	16	•	•	•	•						
	18	•	•	•	•						
	20	•	•	•	•	•	•				
	24		•	•	•	•	•				
	28	•	•	•	•	•	•		•	•	
	32		•	•	•	•	•	•	•	•	•
	36		•	•	•	•	•		•	•	•
	40		•	•	•	•	•	•	•	•	•
	45			•	•	•	•		•	•	•
	50			•	•	•	•	•	•	•	•
	55			•	•	•	•		•	•	•
	60			•	•	•	•	•	•	•	•
	70			•	•	•	•	•	•	•	•
	80			•	•	•	•	•	•	•	•
	90			•	•	•	•		•	•	•
	100			•	•	•	•	•	•	•	•
	120				•	•	•	•	•	•	•

4 Zatiči Dowel Pin

DIN 1 /K-70/K-80/ ISO 2339



Konični zatič.

Conical Dowel Pin.

Obdelava:

Po želji kaljeno, fino brušeno na toleranco h10.

Material:

Orodno jeklo

Trdota:

HRC 58-62

Primer naročila:

Konični zatič premera 6 mm in dolžine 60 mm, kaljen:

Konični zatič: K-70 $\varnothing 6 \times 60$

Finish:

Optionally hardened, fine ground to ISO tolerance h10.

Material:

Tool steel

Hardness:

HRC 58-62

Order example:

Conical dowel pin: 6 x 60 mm, hardened:

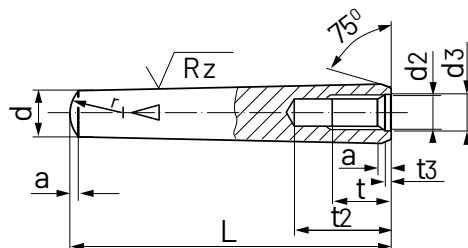
Conical Pin: K-70 $\varnothing 6 \times 60$



d	h10	0,6	0,8	1	1,5	2	2,5	3	4	5	6	8	10	12	14	16	20	25	30	40	50	
c	max.	0,1	0,12	0,15	0,23	0,3	0,4	0,45	0,6	0,75	0,9	1,2	1,5	1,8	2	2,5	3	4	4,5	6	7,5	
r	≈	0,6	0,8	1	1,5	2	2,5	3	4	5	6	8	10	12	16	16	20	25	32	40	50	
L	js 15																					
4	●																					
6	●	●																				
8	●	●	●																			
10	●	●	●	●																		
12		●	●	●	●	●																
14		●	●	●	●	●	●															
16			●	●	●	●	●	●	●													
18			●	●	●	●	●	●	●	●												
20				●	●	●	●	●	●	●	●											
(22)				●	●	●	●	●	●	●	●	●										
24				●	●	●	●	●	●	●	●	●	●									
(26)					●	●	●	●	●	●	●	●	●	●								
28					●	●	●	●	●	●	●	●	●	●	●							
(30)					●	●	●	●	●	●	●	●	●	●	●	●						
32					●	●	●	●	●	●	●	●	●	●	●	●	●					
36					●	●	●	●	●	●	●	●	●	●	●	●	●	●				
40						●	●	●	●	●	●	●	●	●	●	●	●	●	●			
45							●	●	●	●	●	●	●	●	●	●	●	●	●	●		
50								●	●	●	●	●	●	●	●	●	●	●	●	●	●	
55									●	●	●	●	●	●	●	●	●	●	●	●	●	●
60									●	●	●	●	●	●	●	●	●	●	●	●	●	●
70										●	●	●	●	●	●	●	●	●	●	●	●	●
80											●	●	●	●	●	●	●	●	●	●	●	●
90												●	●	●	●	●	●	●	●	●	●	●
100													●	●	●	●	●	●	●	●	●	●
110														●	●	●	●	●	●	●	●	●
120															●	●	●	●	●	●	●	●
130																●	●	●	●	●	●	●
140																	●	●	●	●	●	●
150																		●	●	●	●	●
165																			●	●	●	●
180																				●	●	●
200																					●	●
230																						●
260																						●

4 Zatiči Dowel Pin

ISO 8736 DIN 7979



Dowel Pin with internal thread.

Zatič z notranjim navojem.

Obdelava:

Kaljeno, napuščeno, fino brušeno na toleranco h10.

Material:

Orodno jeklo

Trdota:

HRC 58-62

Primer naročila:

Konični zatič z notranjim navojem premera 8 mm in dolžine 50 mm:
Konični zatič: K-90 \varnothing 8x50

Finish:

Hardened, tempered and precision ground to ISO tolerance h10.

Material:

Tool steel

Hardness:

HRC 58-62

Order example:

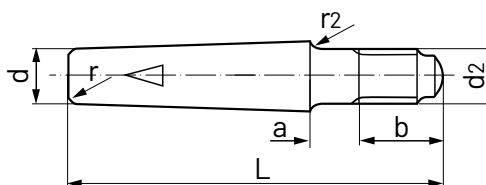
The tapered dowel pin with internal thread 8 x 50 mm:
Conical Dowel Pin: K-90 \varnothing 8x50



d	h10	6	8	10	12	14	16	20	25	30	40	50
a	≈	0,8	1,0	1,2	1,6	1,6	2,0	2,5	3,0	4,0	5,0	6,3
d²		M4	M5	M6	M8	M8	M10	M12	M16	M20	M20	M24
d³		4,3	5,3	6,4	8,4	8,4	10,5	13,0	17,0	21,0	21,0	25,0
t		6	8	10	12	12	16	18	24	30	30	36
t²	min	10	12	16	20	20	25	27	34	42	42	50
t³		1,0	1,2	1,2	1,2	1,2	1,5	1,5	2,0	2,0	2,0	2,5
L	js 15											
16		●										
20		●	●									
24		●	●	●								
28		●	●	●	●	●						
32		●	●	●	●	●	●					
36		●	●	●	●	●	●	●				
40		●	●	●	●	●	●	●	●			
45		●	●	●	●	●	●	●	●	●		
50		●	●	●	●	●	●	●	●	●		
55		●	●	●	●	●	●	●	●	●	●	
60			●	●	●	●	●	●	●	●	●	
70			●	●	●	●	●	●	●	●	●	
80			●	●	●	●	●	●	●	●	●	
90			●	●	●	●	●	●	●	●	●	●
100				●	●	●	●	●	●	●	●	●
110				●	●	●	●	●	●	●	●	●
120					●	●	●	●	●	●	●	●
130					●	●	●	●	●	●	●	●
140						●	●	●	●	●	●	●
150							●	●	●	●	●	●
165							●	●	●	●	●	●
180							●	●	●	●	●	●
200								●	●	●	●	●
230								●	●	●	●	●
260								●	●	●	●	●

4 Zatiči Dowel Pin

DIN 7977



Dowel Pins.

Zatiči.

Obdelava:

Nekaljen, struženo ter brušeno na toleranco h10.

Finish:

Non-hardened, milled and ground to a tolerance of h10.

Material:

Orodno jeklo

Material:

Tool steel

Primer naročila:

Zatič DIN 7977 \varnothing 12x100.

Order example:

Dowel pin DIN 7977 \varnothing 12x100.

d1	5	6	8	10	12	14
b	14	18	22	24	27	30
a	2,4	3	4	4,5	5,3	6
d2	M5	M6	M8	M10	M12	M12
r1	0,3	0,4	0,4	0,5	0,6	0,6
r2	0,6	0,6	0,6	1	1	1

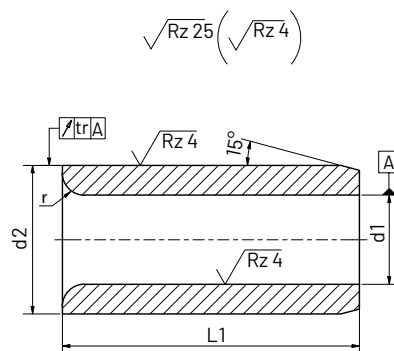
d1	16	20	25	30	40	50
b	35	35	40	46	58	70
a	6	6	7,5	9	10,5	12
d2	M16	M16	M20	M24	M30	M36
r1	0,8	0,8	1	1	1,2	1,6
r2	1,6	1,6	1,6	2,5	2,5	4



d h10	5	6	8	10	12	14	16	20	25	30	40	50
b +2P	14	18	22	24	27	30	35	35	40	46	58	70
a max.	2,4	3,0	4,0	4,5	5,3	6,0	6,0	6,0	7,5	9,0	10,5	12,0
d2	M5	M6	M10	M12	M12	M16	M16	M20	M10	M24	M30	M36
r	0,3	0,4	0,4	0,5	0,6	0,6	0,8	0,8	1,0	1,0	1,2	1,6
r2	0,6	0,6	0,6	1,0	1,0	1,0	1,6	1,6	1,6	2,5	2,5	4,0
L js15												
40	•											
45	•	•										
50	•	•										
55		•	•									
60		•	•									
65			•	•								
75			•	•								
85				•	•	•						
100				•	•	•	•					
120					•	•	•	•				
140					•	•	•	•	•			
160							•	•	•	•		
190								•	•	•	•	
220									•	•	•	•
250									•	•	•	•
280										•	•	•
320											•	•
360												•

4 Zatiči Dowel Pin

ISO 4247 DIN 179



Brezglavna vrtna tulka.

Headless Drill Bush.

Zunaj in znotraj obdelano v zahtevanih tolerancah.

Dimenzije so prikazane v tabeli.

Inside and outside grinded in tolerance, with insertion chamfer.

The dimensions are shown in the table.

Tipi:

- Tip A:** 7819.
Zaokroženo na eni strani
- Tip B:** 7829.
Zaokroženo na obeh straneh

Types:

- Type A:** 7819.
Bore hole rounded at one end
- Type B:** 7829.
Bore hole rounded at both ends

Material:

Jeklo, ki ga izbere proizvajalec.

Material:

Steel chosen by manufacturer.

Trdota:

740 + 80 HV 10

Hardness:

740 + 80 HV 10



d1 F 7	a ± 0,01	L1			d2 ¹⁾ n 6	r + 0,5 0	tr
		kratak / short	srednji / me- dium	dolg / long			
0,4-0,8		6	/	/	3	1	0,01
0,6-1,0					3		
0,9-1,0			9	/	3		
1,1-1,8		6	9		12		
1,9-2,6					16		
2,7-3,3		8	12	16	6		
3,4-4,0					7		
4,1-5,0					8		
5,1-6,0		10	16	20	10	1,5	0,02
6,1-8,0	Graded bores d1 < 15 in increments of 0.1 > 15 preferably 0.5 mm				12		
8,1-10,0		12	20	25	15	2,0	
10,1-12,0					18		
12,1-15,0		16	28	36	22		
15,5-18,0					26		
18,5-22,0		20	36	45	30	3,0	
22,5-26,0					35		
26,5-30,0		25	45	56	42		
30,5-35,0					48		
35,5-42,0		30	56	67	55	3,5	
42,5-48,0				62		0,04	
48,5-55,0				70			
55,5-63,0		35	67	78	78	4	

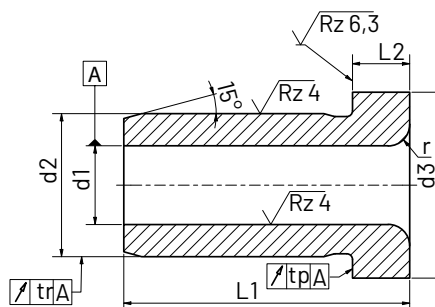
¹⁾Za vrtnanje s tolerančnim območjem H 6 ali H 7. / For drilling with tolerance range H 6 or H 7 in jig/fixture.

4 Zatiči Dowel Pin

ISO 4247 DIN 172



$$\sqrt{Rz\ 25} \left(\sqrt{Rz\ 4} \sqrt{Rz\ 6,3} \right)$$



Vrtalna tulka z glavom.

Drill Bush with head.

Zunaj in znotraj obdelano v zahtevanih tolerancah.

Dimenzije so prikazane v tabeli.

Tipi:

- Tip A:** 7619.
Zaokroženo na eni strani
- Tip B:** 7629.
Zaokroženo na obeh straneh

Material:

Jeklo, ki ga izbere proizvajalec.

Trdota:

740 + 80 HV 10

Inside and outside grinded in tolerance, with insertion chamfer. The dimensions are shown in the table.

Types:

- Type A:** 7619.
Bore radiused at one end
- Type B:** 7629.
Bore radiused at both ends

Material:

Steel chosen by manufacturer.

Hardness:

740 + 80 HV 10



d1 F 7	a ±0,01	l1			d2 1) n 6	d3	l2	r +0,5 0	tr	tp
		kratek / short	srednji / medium	dolg / long						
0,4- 0,8		6	/	/	3	6	2,0	1	0,01	0,03
0,9- 1,0			9	/	3	6				
1,1- 1,8					12	7				
1,9- 2,6					16	8				
2,7- 3,3		8	12	16	6	9	2,5			
3,4- 4,0					7	10				
4,1- 5,0					8	11				
5,1- 6,0		10	16	20	10	13	3,0	1,5	0,02	
6,1- 8,0					12	15				
8,1-10,0	Graded bores d1 < 15 in increments of 0.1 > 15 preferably 0.5 mm	12	20	25	15	18		2,0		
10,1-12,0					18	22	4,0			
12,1-15,0		16	28	36	22	26				
15,5-18,0					26	30				
18,5-22,0		20	36	45	30	34	5,0	3,0		
22,5-26,0				35	39					0,05
26,5-30,0		25	45	56	42	46				
30,5-35,0					48	52				
35,5-42,0		30	56	67	55	59		3,5		
42,5-48,0					62	66				0,04
48,5-55,0					70	74	6,0			
55,5-63,0		35	67	78	78	82		4		

1) Za vrtnanje s tolerančnim območjem H 6 ali H 7. / For drilling with tolerance range H 6 or H 7 in jig/fixture.