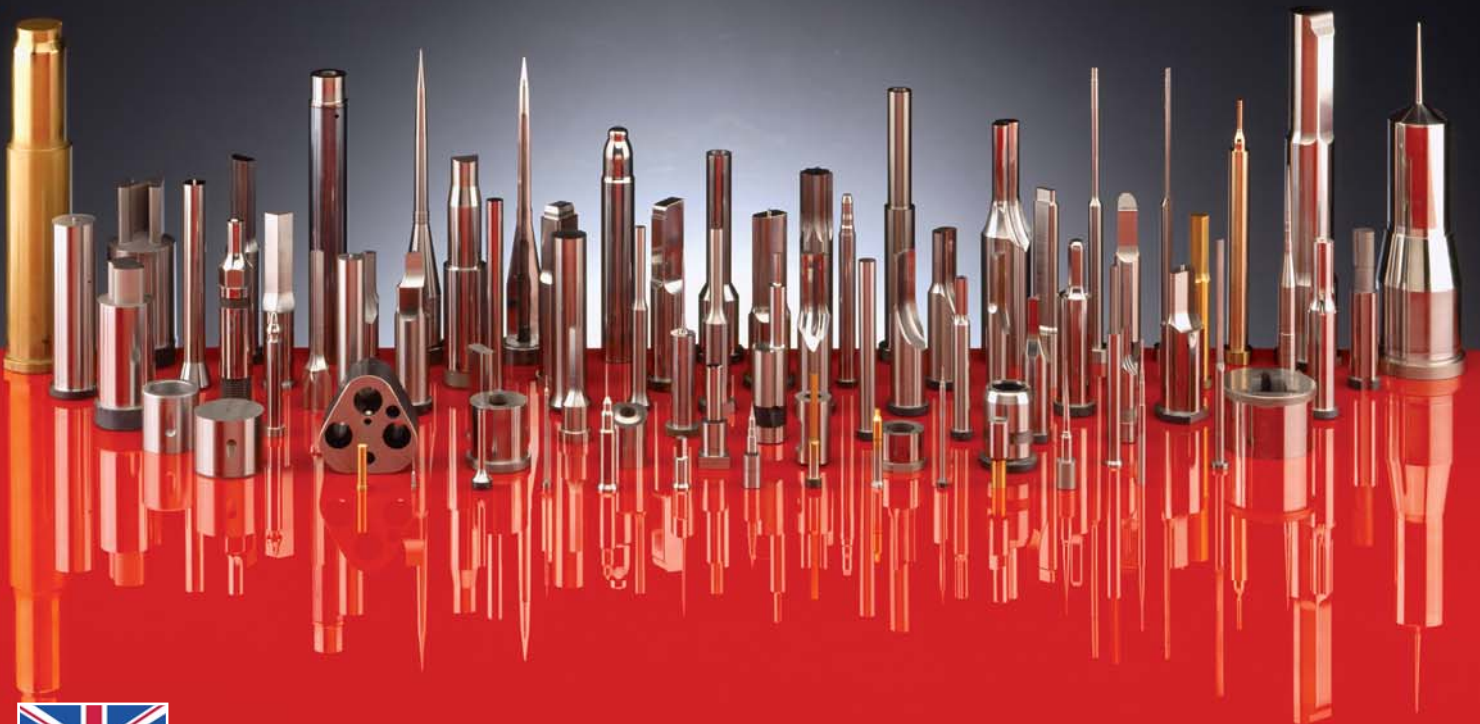


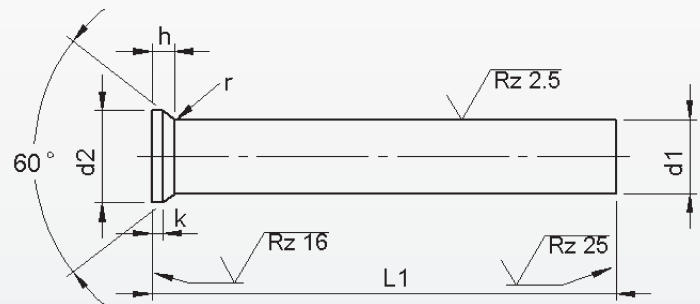
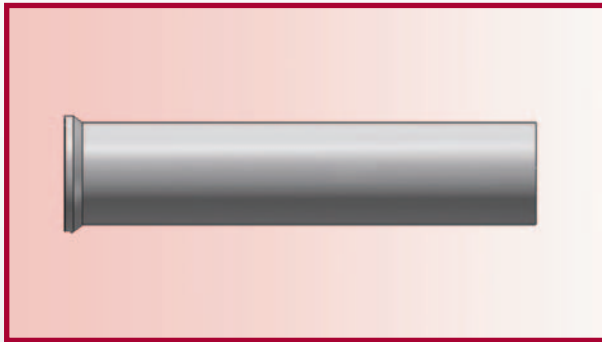


# GERIMEX

## Price List Production Program



# Punches DIN 9861 HWS



**Material:** HWS (1.2379)  
**Hardness:** Shaft: 62 ±2 HRC  
 Head: 50 ±5 HRC

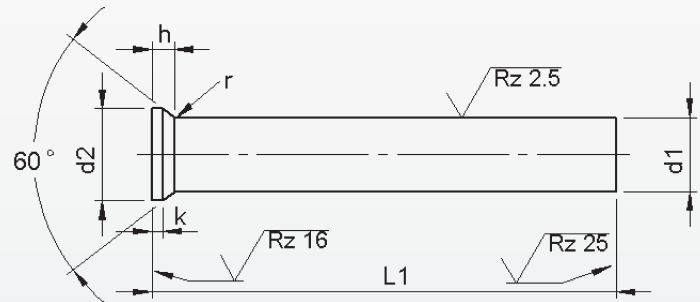
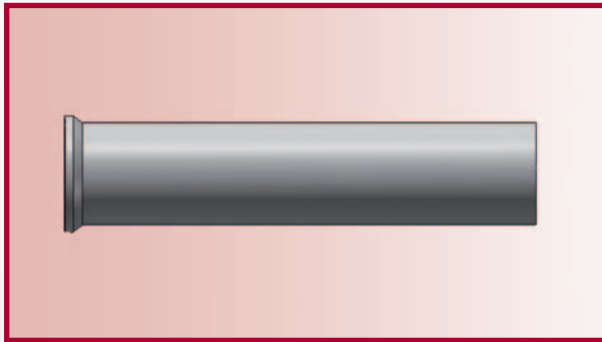
## DISCONTINUED

d <sub>1</sub>			d <sub>2</sub>	k	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>						
					71	80	90	100	120	150	
h6					Price by piece in EUROS						
					+ 0.2	0					
0.5			0.9	0.2	4,15						
0.6			1.1		4,15						
0.7			1.3		3,94						
0.8			1.4	0.4	3,94						
0.9			1.6		3,94						
1.0	t/m	1.1	1.8	0.5	3,10	3,62	4,10	4,62			
1.2	t/m	1.3	2.0		3,10	3,62	4,10	4,62			
1.4	t/m	1.5	2.2		3,10	3,62	4,10	4,62			
1.6	t/m	1.7	2.5		3,10	3,62	4,10	4,62			
1.8	t/m	1.9	2.8		3,10	3,62	4,10	4,62			
2.0			3.0		2,89	3,15	3,62	4,04	5,83		
2.1	t/m	2.2	3.2		2,89	3,15	3,62	4,04	5,83		
2.3	t/m	2.5	3.5		2,89	3,15	3,62	4,04	5,83		
2.6	t/m	2.9	4.0		2,89	3,15	3,62	4,04	5,83		
3.0	t/m	3.4	4.5		2,89	3,15	3,62	4,04	5,83		
3.5	t/m	3.9	5.0	3,26	3,52	3,99	4,57	6,46			
4.0	t/m	4.4	5.5	2,99	3,36	3,73	4,20	5,99	8,93		
4.5	t/m	4.9	6.0	3,26	3,47	3,89	4,57	6,46	9,66		
5.0	t/m	5.4	6.5	3,26	3,47	3,89	4,57	6,46	9,66		
5.5	t/m	5.9	7.0	3,26	3,52	4,15	4,57	6,46	9,71		
6.0	t/m	6.4	8.0	3,26	3,52	4,15	4,57	6,46	9,71		
6.5		7.0	9.0	1.0	3,47	3,78	4,31	4,83	6,88	10,29	
7.5		8.0	10.0		3,62	3,94	4,57	4,99	7,19	10,76	
8.5		9.0	11.0		4,04	4,52	5,04	5,72	8,09	12,08	
9.5		10.0	12.0		4,88	5,36	6,09	6,88	9,71	14,54	
10.5		11.0	13.0		5,36	5,99	6,72	7,56	10,71	16,07	
11.5		12.0	14.0		6,09	6,67	7,56	8,51	12,18	18,27	
12.5		13.0	15.0		6,30	7,09	8,03	8,93	12,60	18,90	

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

See page 2 for extra charges and discount.

# Punches DIN 9861 HSS



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

## DISCONTINUED

d <sub>1</sub>	h6	d <sub>2</sub>	k	I <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>					
				71	80	90	100	120	150
				<b>Price by piece in EUROS</b>					
13.5		14.0	1.5	7,35	8,14	9,19	10,34	14,70	22,05
14.5		15.0		8,82	9,71	11,08	12,39	17,59	26,41
15.5		16.0		9,82	10,87	12,29	13,76	19,58	29,40
16.5		19.0		10,19	11,18	12,71	14,28	20,32	30,50
17.0		19.5		10,19	11,18	12,71	14,28	20,32	30,50
17.5		20.0		10,92	11,97	14,54	15,33	21,79	32,71
18.0		20.5		10,92	11,97	14,54	15,33	21,79	32,71
18.5		21.0		11,66	12,81	15,02	16,33	23,31	34,91
19.0		21.5		11,66	12,81	15,02	16,33	23,31	34,91
19.5		22.0		12,39	13,65	15,49	17,33	24,78	37,12
20.0		22.5	12,39	13,65	15,49	17,33	24,78	37,12	
20.5		23.0	2.0	13,13	14,44	16,43	18,38	26,25	39,27
21.0		23.5		13,13	14,44	16,43	18,38	26,25	39,27
21.5		24.0		13,86	15,28	17,33	19,37	27,72	41,58
22.0		24.5		13,86	15,28	17,33	19,37	27,72	41,58
22.5		25.0		14,60	16,01	18,27	20,48	29,19	43,79
23.0		25.5		14,60	16,01	18,27	20,48	29,19	43,79
23.5		26.0		15,33	16,85	19,16	21,47	30,66	45,99
24.0		26.5		15,33	16,86	19,16	21,47	30,66	45,99
24.5		27.0		16,07	17,69	20,11	22,52	32,13	48,20
25.0		27.5		16,07	17,69	20,11	22,52	32,13	48,20

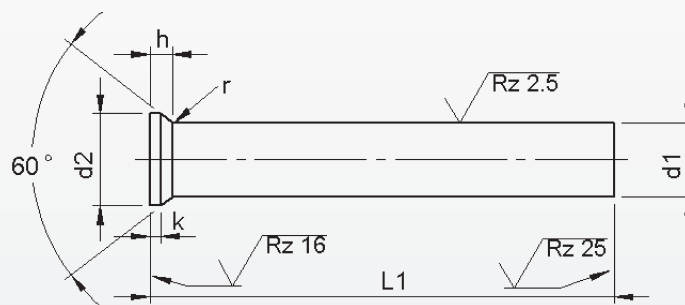
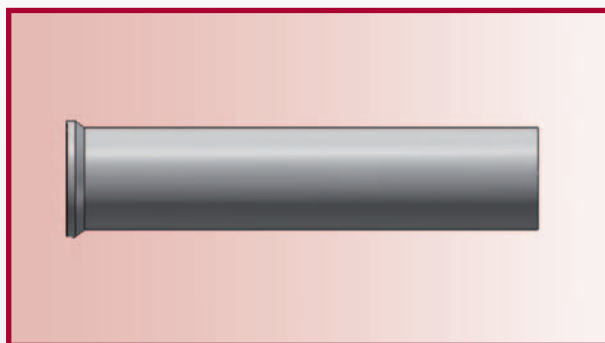
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches

## DIN 9861 HSS



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

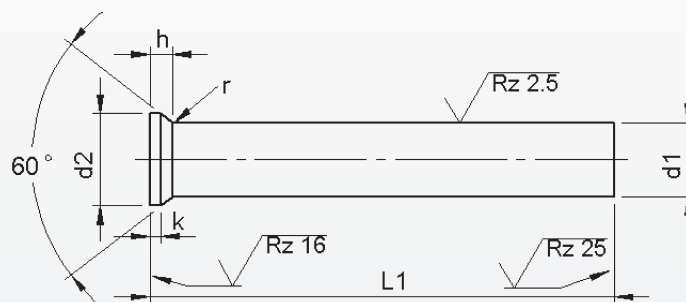
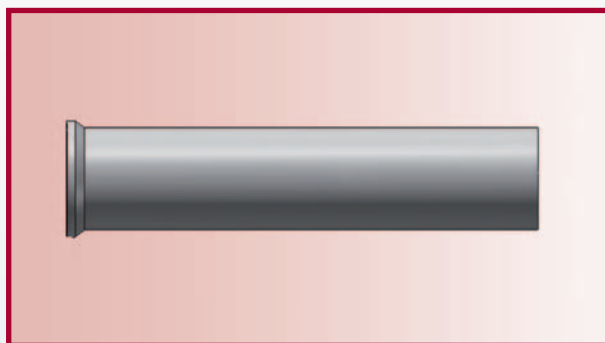
d <sub>1</sub>	h <sub>6</sub>	d <sub>2</sub>	k	I <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>						
				71	80	90	100	120	150	
				Price by piece in EUROS						
0.5		0.9	0.2	4,89						
0.6		1.1	0.2	4,89						
0.7		1.3	0.2	4,63						
0.8		1.4	0.4	4,63						
0.9		1.6	0.4	4,63						
1.0	t/m	1.1	1.8	3,79	4,26	4,74	5,32			
1.2	t/m	1.3	2.0	3,79	4,26	4,74	4,26			
1.4	t/m	1.5	2.2	3,79	4,26	4,74	4,26			
1.6	t/m	1.7	2.5	3,79	4,26	4,74	4,26			
1.8	t/m	1.9	2.8	3,79	4,26	4,74	4,26			
2.0		3.0	0.5	3,47	3,79	4,37	4,79	6,89		
2.1	t/m	2.2		3,47	3,79	4,37	4,79	6,89		
2.3	t/m	2.5		3,47	3,79	4,37	4,79	6,89		
2.6	t/m	2.9		3,47	3,79	4,37	4,79	6,89		
3.0	t/m	3.4		3,47	3,79	4,37	4,79	6,89		
3.5	t/m	3.9		3,79	4,26	4,74	5,32	7,58		
4.0	t/m	4.4		3,47	3,79	4,37	4,79	6,89		
4.5	t/m	4.9		3,79	4,26	4,74	5,32	7,58	11,32	
5.0	t/m	5.4		4,00	4,42	4,89	5,58	7,89	11,84	
5.5	t/m	5.9		3,95	4,42	4,89	5,58	7,89	11,84	
6.0	t/m	6.4	3,95	4,42	4,89	5,58	7,89	11,84		
6.5	+	7.0	4,37	4,68	5,37	6,00	8,68	13,00		
7.5	+	8.0	4,47	4,84	5,63	6,21	8,89	13,32		
8.5	+	9.0	4,89	5,42	6,05	6,84	9,74	14,58		
9.5	+	10.0	5,79	6,42	7,21	8,11	11,53	17,26		
10.5	+	11.0	6,47	7,05	8,00	9,05	12,89	19,32		
11.5	+	12.0	7,05	7,79	8,79	9,89	14,05	21,05		
12.5	+	13.0	8,63	9,42	10,74	12,00	17,21	25,84		

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

See page 2 for extra charges and discount.

# Punches

## DIN 9861 HSS



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

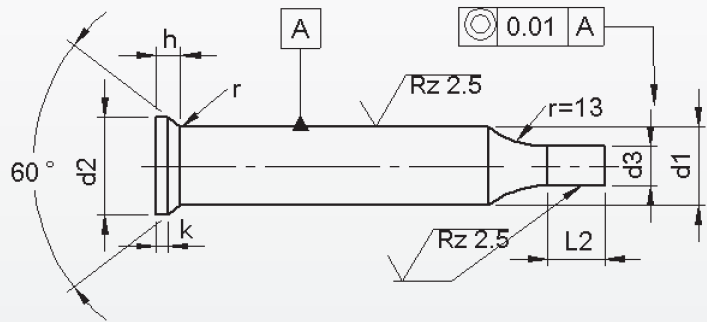
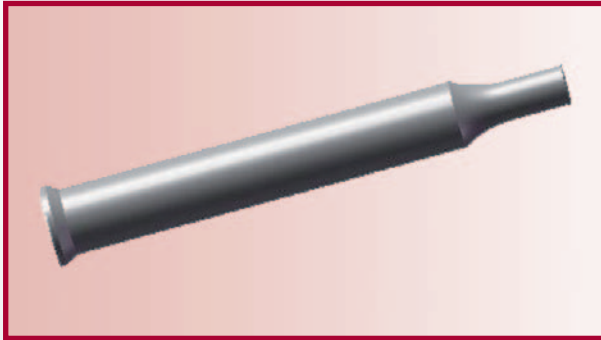
d <sub>1</sub>	h6	d <sub>2</sub>	k	l <sub>1</sub> <sup>+0.5</sup> / <sub>0</sub>					
				71	80	90	100	120	150
				<b>Price by piece in EUROS</b>					
13.5	+	14.0	16.0	9,89	10,79	12,32	13,74	19,74	29,63
14.5	+	15.0	17.0	10,58	11,63	13,21	14,79	21,16	31,68
15.5	+	16.0	18.0	11,84	13,00	14,79	16,58	23,68	35,53
16.5		19.0	1.5	12,16	13,37	15,21	17,00	24,32	36,47
17.0		19.5		12,16	13,37	15,21	17,00	24,32	36,47
17.5		20.0		12,95	14,26	16,21	18,16	25,89	38,84
18.0		20.5		12,95	14,26	16,21	18,16	25,89	38,84
18.5		21.0		13,74	15,11	17,16	19,21	27,47	30,63
19.0		21.5		13,74	15,11	17,16	19,21	27,47	30,63
19.5		22.0		14,53	16,00	18,16	20,37	29,05	45,16
20.0		22.5		14,53	16,00	18,16	20,37	29,05	45,16
20.5		23.0		15,32	16,84	19,11	21,42	30,53	45,79
21.0		23.5		15,68	16,84	19,11	21,42	30,53	47,05
21.5		24.0	2.0	16,11	17,68	20,11	22,53	32,21	48,32
22.0		24.5		16,11	17,68	20,11	22,53	32,21	48,32
22.5		25.0		16,89	18,11	21,11	23,63	33,79	50,68
23.0		25.5		16,89	18,11	21,11	23,63	33,79	50,68
23.5		26.0		17,68	19,42	22,05	24,74	35,37	53,05
24.0		26.5		17,68	19,42	22,05	24,74	35,37	53,05
24.5		27.0		18,47	20,32	23,05	25,84	36,95	55,42
25.0		27.5		18,47	20,32	23,05	25,84	36,95	55,42

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

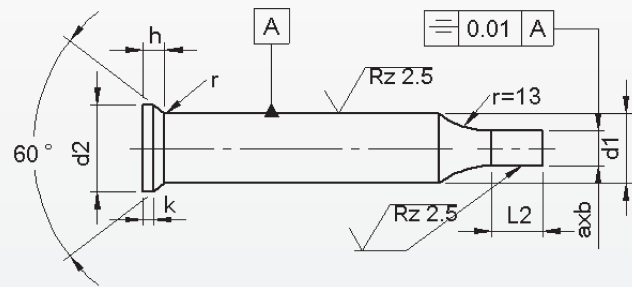
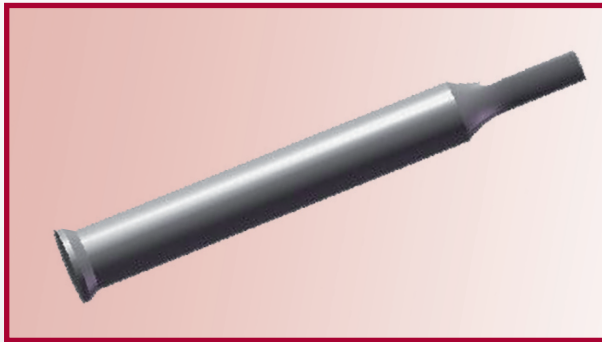
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Reduced shaft 'Round' DIN 9861



d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub> <sup>0.5</sup> <sub>0</sub>					
			Price by piece in EUROS/punche not include					
≥	≥	<sup>h6</sup> —	≤	7	10	13	17	
1.5	0.5	—	1.4	•				2,63
2	0.5	—	1,9	•				2,63
3	1.6	—	2,9	•				2,63
4	1.6	—	3,9		•			2,63
5	2.5	—	4,9		•			2,89
6	3	—	5,9		•			3,36
8	4	—	7,9			•		3,94
10	5	—	9,9				•	4,67
13	9	—	12,9				•	5,36
16	12	—	15,9				•	7,30
20	16	—	19,9				•	10,13
25	20	—	24,9				•	13,07
32	25	—	31,9				•	16,49
38	30	—	37,9				•	17,90

# Reduced shaft 'Form' DIN 9861

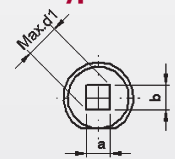
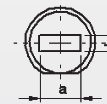
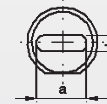
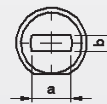


Type ..F

Type ..O

Type ..R

Type ..S



d <sub>1</sub>	axb ± 0.01			l <sub>2</sub> <sup>0.5</sup> / <sub>0</sub>				
	≥	-	≤	Price by piece in EUROS				Locking flat
				10	13	17		
5	2,5	-	4,9	•			16,54	4,15
6	3,0	-	5,9	•			16,54	4,15
8	4,0	-	7,9		•		22,05	5,51
10	5,0	-	9,9			•	22,05	5,51
13	9,0	-	12,9			•	22,05	5,51
16	12,0	-	15,9			•	22,05	5,51
20	16,0	-	19,9			•	33,08	8,30
25	20,0	-	24,9			•	38,59	9,66
32	27,0	-	31,9			•	44,15	11,03
38	33,0	-	37,9			•	44,15	11,03

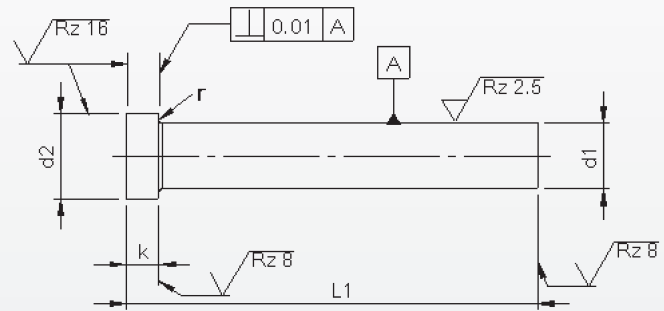
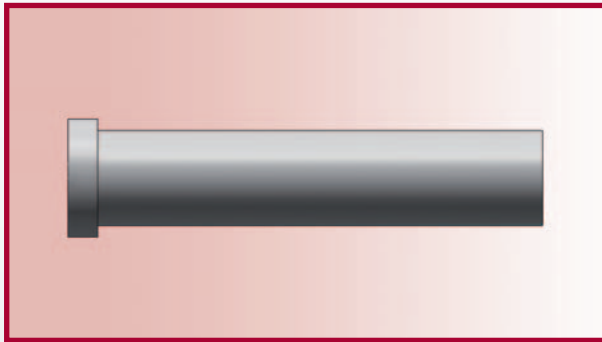
L<sub>2</sub> max is 7 times size b, however never longer than 40 mm.

Punches with locking flat against extra charge.

Without detailed specifications the locking is parallel to the major flat axis of surface 'a'.

# Punches ISO 8020 / type KP

With reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	Typ K	Typ K	ISO 8020	ISO 8020	r	l <sub>1</sub> <sup>+0.5</sup> / <sub>+0.2</sub>				
						63/71	80	90	100	120
m5	d <sub>2</sub> 0 -0.15	k +0.2 +0.1	d <sub>2</sub> +0.2 +0.1	k +0.1 0		<b>Price by piece in EUROS</b>				
3	5	3	5	3	0.2	6,04	6,62	7,56		
4	6	3	6	3		6,04	6,62	7,56	8,45	
5	8	5	8	5	0.3	6,04	6,67	7,35	8,03	9,66
6	9	5	9	5		6,93	7,67	8,40	9,24	11,08
8	11	5	11	5		8,19	9,03	9,92	10,92	13,13
10	13	5	13	5		9,61	10,55	11,60	12,76	15,33
13	16	5	16	5	0.5	12,13	13,34	14,65	16,12	19,32
16	19	6	19	5		14,91	16,38	18,06	19,85	23,84
20	<b>24</b>	6	<b>23</b>	5		18,11	19,90	21,89	24,05	28,93
25	<b>29</b>	10	<b>28</b>	5		22,47	24,73	27,20	29,93	35,96
32	<b>36</b>	12	<b>35</b>	5		29,77	32,76	36,02	39,64	47,62
38	<b>45</b>	15	<b>41</b>	5		36,70	40,37	44,42	48,83	58,75

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

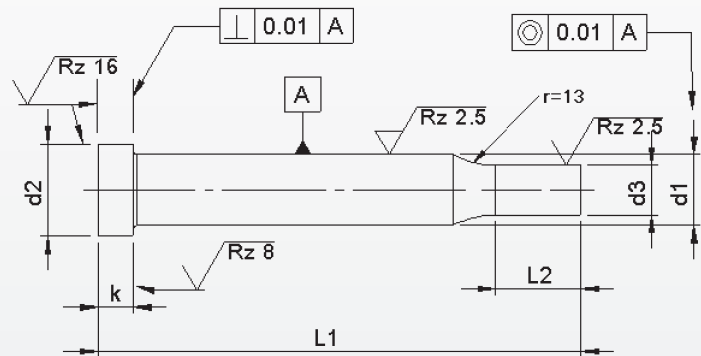
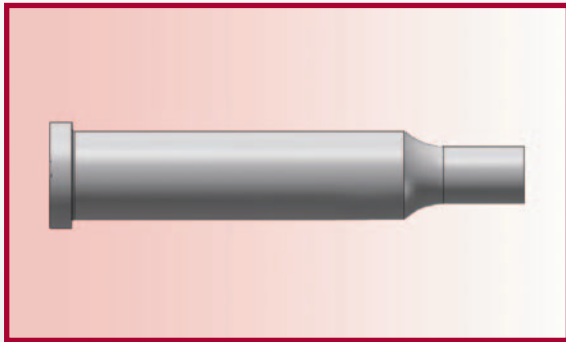
**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%



# Punches ISO 8020 / type KP

With reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub>	l <sub>1</sub> <sup>+0.5</sup> / <sub>+0.2</sub>					
	≥	≤		63/71	80	90	100	120	
m5	≥	j6	≤	Price by piece in EUROS					
3	1.6	–	2.9	7	8,66	9,24	10,19		
4	1.6	–	3.9	10	8,66	9,24	10,19	11,08	
5	2.5	–	4.9	10	8,93	9,56	10,24	10,92	12,55
6	3.0	–	5.9	10	10,29	11,03	11,76	12,60	14,44
8	4.0	–	7.9	13	12,13	12,97	13,86	14,86	17,06
10	5.0	–	9.9	17	14,28	15,23	16,28	17,43	20,00
13	9.0	–	12.9	17	17,38	18,69	20,00	21,47	24,68
16	12.0	–	15.9	17	22,21	23,68	25,31	27,14	31,08
20	16.0	–	19.9	17	28,19	30,03	32,03	34,18	39,06
25	20.0	–	24.9	17	35,54	37,80	40,27	43,00	49,04
32	27.0	–	31.9	17	46,25	49,25	52,50	56,12	64,10
38	33.0	–	37.9	17	54,60	58,28	62,32	66,73	92,30

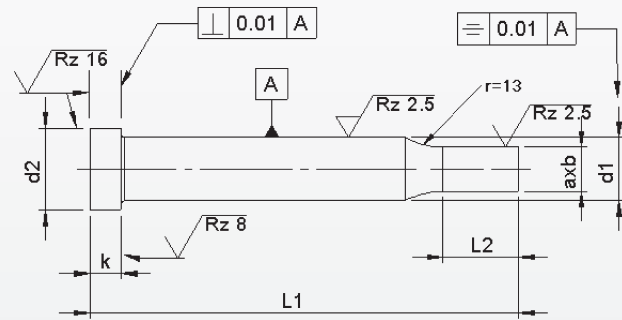
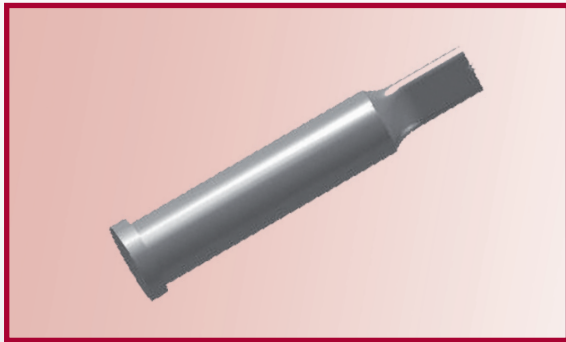
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

# Punches ISO 8020 / type K..

With reduced shaft 'Form'

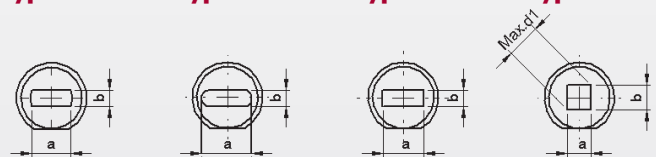


type KF

type KO

type KR

type KS



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub> m5	d <sub>3</sub>		l <sub>2</sub> +0.5 +0.0	l <sub>1</sub> +0.5 +0.2					Locking flat	
	b	a		63/71	80	90	100	120		
Price by piece in EUROS										
3	1.6	-	2.9	7	22,58	23,21	23,84	24,57		4,15
4	1.6	-	3.9	10	22,58	23,21	23,84	24,57		
5	2.5	-	4.9	10	22,58	23,21	23,84	24,57	26,20	
6	3.0	-	5.9	10	23,47	24,20	24,94	25,78	27,62	5,51
8	4.0	-	7.9	13	30,24	31,08	31,97	32,97	35,18	
10	5.0	-	9.9	17	31,66	32,60	33,65	34,81	37,38	
13	9.0	-	12.9	17	34,18	35,39	36,70	38,17	41,37	8,30
16	12.0	-	15.9	17	36,96	38,43	40,11	41,90	45,89	
20	16.0	-	19.9	17	51,19	52,97	54,97	57,12	62,00	
25	20.0	-	24.9	17	61,06	63,32	65,78	68,51	74,55	9,66
32	27.0	-	31.9	17	73,87	76,86	80,12	83,74	89,62	
38	33.0	-	37.9	17	80,80	84,47	88,52	92,93	102,90	
										11,03

**Punches with key-flat against surcharge.**

Without detailed specification the key-flat is parallel to the major axis of surface a.

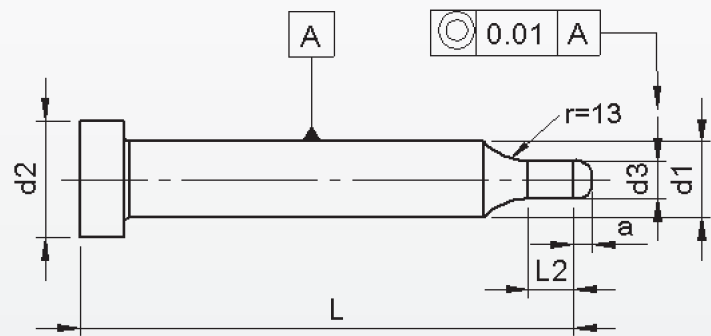
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches ISO 8020 / type KPL

With pilots



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>3</sub>		a	l <sub>2</sub>	l+a					
					63/71	80	90	100	120	
m5	≥	<sup>+0.01</sup> <sub>0</sub>	≤			Price by piece in EUROS				
5	0.8	-	2.0	3.0	10	11,81	12,44	13,13	13,81	15,44
6	2.1	-	4.5	4.5	10	13,65	14,39	15,12	15,96	17,80
8	4.6	-	7.5	6.5	13	16,07	16,91	17,80	18,80	21,00
10	7.6	-	10.0	8.0	17	18,95	19,90	20,95	22,10	24,68
13	10.1	-	13.0	9.5	17	22,73	24,05	25,36	26,83	30,03
16	13.1	-	16.0	11.5	17	29,51	30,98	32,60	34,44	38,38
20	16.1	-	20.0	13.5	17	38,33	40,16	42,16	44,31	49,19
25	20.1	-	25.0	13.5	17	48,62	51,50	53,34	56,07	62,11

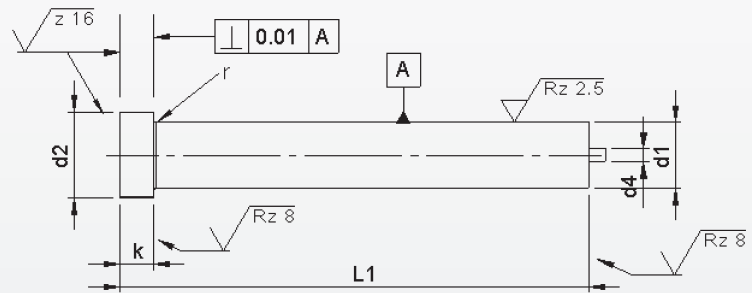
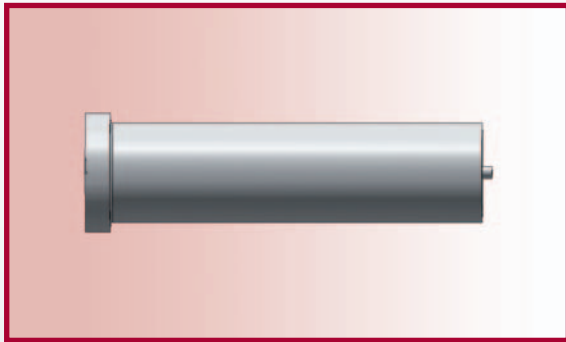
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches ISO 8020 / Type EK

With ejector



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>2</sub>	d <sub>4</sub>	k	r	l <sub>1</sub> <sup>+0.5</sup> / <sub>+0.2</sub>				
					63/71	80	90	100	120
m5	<sup>0</sup> / <sub>-0.15</sub>		<sup>+0.2</sup> / <sub>+0.1</sub>	<sup>+0.1</sup> / <sub>0</sub>	<b>Price by piece in EUROS</b>				
5	8	1	5	0.3	17,06	18,80	20,69	22,73	
6	9		5		16,85	18,59	20,42	22,47	
8	11	1,5	5		17,01	18,74	20,58	22,68	27,20
10	13		5		18,43	20,27	22,26	24,52	29,40
13	16	2,3	5	0.5	20,95	23,00	25,31	27,83	33,39
16	19		5		23,73	26,09	28,72	31,61	37,91
20	23		5		26,93	29,61	32,55	35,81	43,00
25	28		5		31,29	34,44	37,85	41,63	49,98
32	35	3	5		39,59	42,68	46,15	53,66	56,49
38	41		5		45,62	49,51	53,34	57,80	67,57

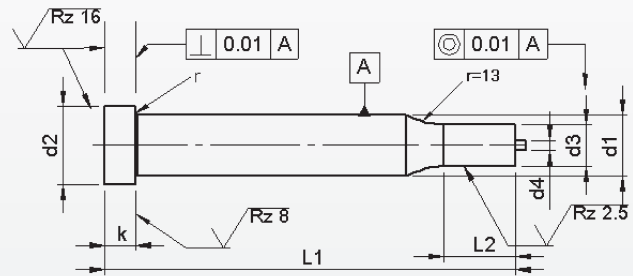
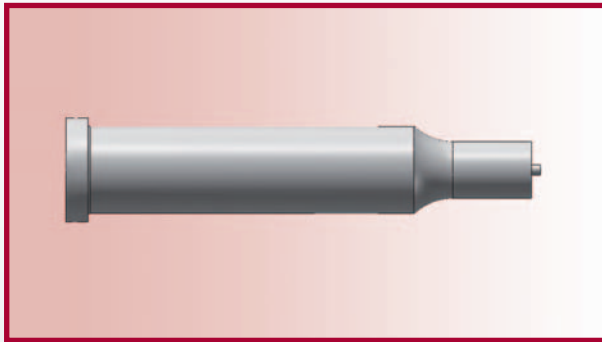
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches ISO 8020 / Typ EKP

With ejector with reduced shaft 'Round'



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

Head: 50 ±5 HRC

d <sub>1</sub> m5	d <sub>3</sub> j6		l <sub>2</sub> +0.5 +0.0	l <sub>1</sub> <sup>+0.5</sup> / <sub>+0.2</sub>					
				63/71	80	90	100	120	
				<b>Price by piece in EUROS</b>					
5	2.5	-	4.9	10	19,69	21,68	23,57	25,62	
6	3.0	-	5.9	10	20,27	21,95	23,78	25,83	
8	4.0	-	7.9	13	20,95	22,68	24,52	26,62	31,13
10	5.0	-	9.9	17	23,10	24,94	26,93	29,19	34,07
13	9.0	-	12.9	17	26,30	28,35	30,66	33,18	38,75
16	12.0	-	15.9	17	31,03	33,39	36,02	38,90	45,20
20	16.0	-	19.9	17	37,07	39,74	42,68	45,94	53,13
25	20.0	-	24.9	17	44,36	47,51	50,93	54,71	63,05
32	24.0	-	31.9	17	55,23	58,17	61,48	65,05	73,03
38	28.0	-	37.9	17	63,58	67,46	71,30	75,76	85,68

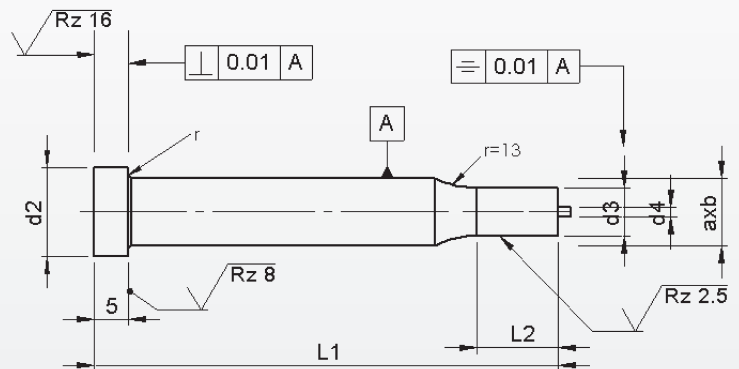
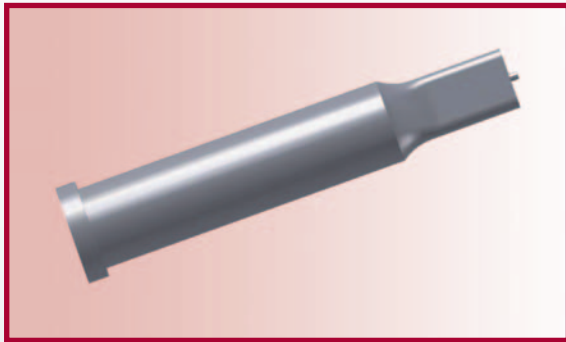
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

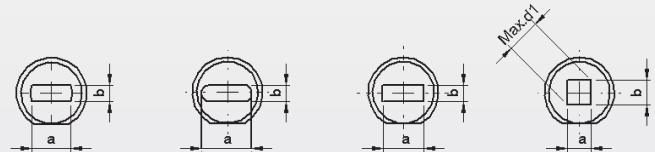
# Punches ISO 8020 / Typ EK..

With ejector with reduced shaft 'Form'



**Material:** HSS (1.3343)  
**Hardness:** Shaft:  $64 \pm 2$  HRC  
 Head:  $50 \pm 5$  HRC

**Type EKF    Type EKO    Type EKR    Type EKS**



$d_1$	$axb$		$l_2$	$l_1 \begin{matrix} +0.5 \\ +0.2 \end{matrix}$					
				63/71	80	90	100	120	Locking flat
$m5$	$b$	$a$	$\begin{matrix} +0.5 \\ 0 \end{matrix}$	Price by piece in EUROS					
5	2.5	4.9	10	33,60	35,33	37,22	39,27		4,15
6	3.0	5.9	10	33,39	35,12	36,96	39,01		
8	4.0	7.9	13	39,06	40,79	42,63	44,73	49,25	
10	5.0	9.9	17	40,48	42,32	44,31	46,57	51,45	5,51
13	9.0	12.9	17	43,00	45,05	47,36	49,88	55,44	
16	12.0	15.9	17	45,78	48,14	50,77	53,66	59,96	
20	16.0	19.9	17	60,01	62,69	65,63	68,88	76,07	8,30
25	20.0	24.9	17	69,88	73,03	76,49	80,27	88,57	9,66
32	24.0	31.9	17	83,74	86,78	90,25	97,76	100,59	
38	28.0	37.9	17	89,78	93,61	97,44	102,01	111,67	11,03

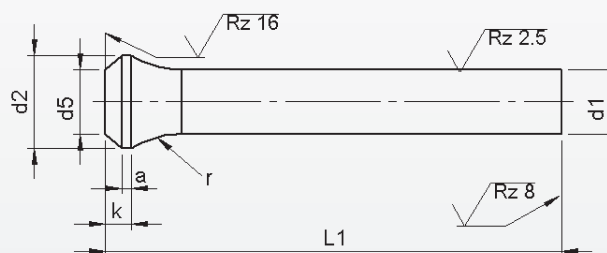
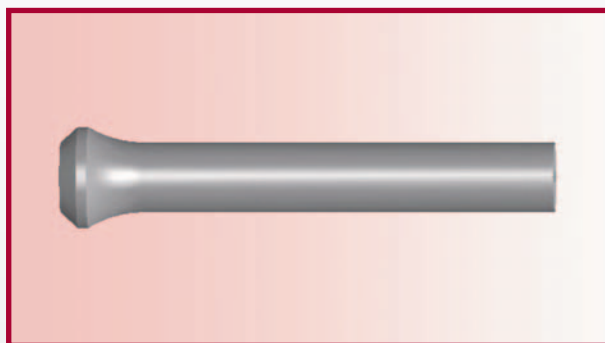
**Punches with key-flat against surcharge.**

Without detailed specification the key-flat is parallel to the major axis of surface a.

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

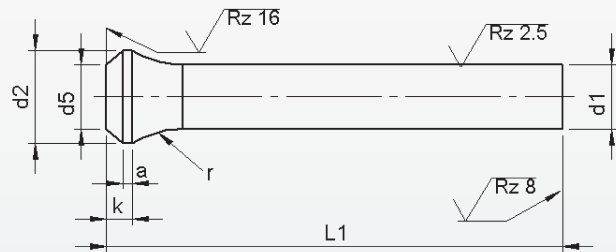
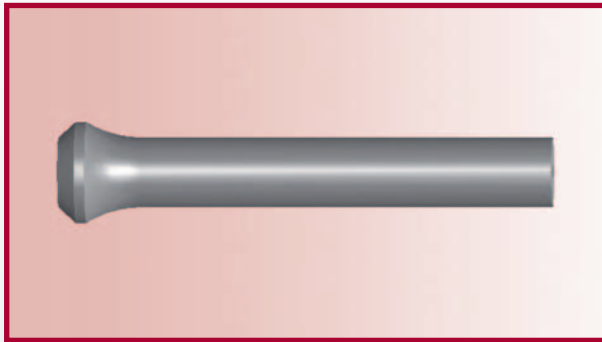


**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>2</sub>	k	a	d <sub>5</sub>	r	L <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>				
						71	80	90	100	120
h6	0 -0.2	+0.2 0			0 -0.2	<b>Price by piece in EUROS</b>				
5,0	7,0	4,0	1,5		10,0	6,04	6,67	7,35	8,03	9,66
5,5	8,0					6,46	7,14	7,88	8,61	10,34
6,0	9,0					6,93	7,67	8,40	9,24	11,08
6,5	10,0					7,25	7,98	8,77	9,66	11,55
7,0	10,0					7,56	8,30	9,14	10,08	12,08
7,5	11,0					7,88	8,61	9,50	10,50	12,60
8,0	11,0				8,19	9,03	9,92	10,92	13,13	
8,5	13,0				8,56	9,40	10,34	11,39	13,65	
9,0	13,0				8,93	9,77	10,76	11,71	14,18	
9,5	14,0				9,29	10,13	11,18	12,18	14,70	
10,0	14,0				9,61	10,55	11,60	12,76	15,33	
10,5	15,0				10,03	11,08	12,13	13,31	15,99	
11,0	15,0				10,45	11,60	12,65	13,87	16,65	
11,5	16,0				10,87	12,13	13,18	14,43	17,31	
12,0	16,0				11,18	12,65	13,70	14,98	17,98	
12,5	17,0				11,66	12,65	14,23	15,54	18,64	
13,0	17,0	12,13	13,34	14,65	16,12	19,32				
13,5	18,0	12,60	13,84	15,17	16,75	20,06				
14,0	18,0	13,07	14,34	15,70	17,38	20,79				
14,5	19,0	13,55	14,85	16,22	18,01	21,53				

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

See page 2 for extra charges and discount.



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>2</sub>	k	a	d <sub>5</sub>	r	l <sub>1</sub> <sup>+0.5</sup> / <sub>0</sub>				
						71	80	90	100	120
h6	<sup>0</sup> / <sub>-0.2</sub>	<sup>+0.2</sup> / <sub>0</sub>			<sup>0</sup> / <sub>-0.2</sub>	<b>Price by piece in EUROS</b>				
15,0	19,0	4.0	1.5	d1 ± 0.1	15.0	14,02	15,35	16,96	18,64	22,26
15.5	20.0					14,49	15,86	17,48	19,27	23,10
16,0	20,0					14,91	16,38	18,06	19,85	23,84
16.5	21,0					15,31	16,81	18,53	20,37	24,47
17,0	21,0					15,71	17,31	19,01	20,90	25,10
17.5	22,0					16,11	17,82	19,48	21,42	25,73
18,0	22,0					16,51	18,32	19,95	21,95	25,31
18.5	23,0					16,91	18,83	20,42	22,47	25,94
19,0	23,0					17,30	19,33	20,90	23,00	26,57
19.5	25,0					16,76	19,83	21,37	23,52	27,20
20,0	25,0					18,11	19,90	21,89	24,05	28,93
25,0	30,0					22,47	24,73	27,20	29,93	35,96

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

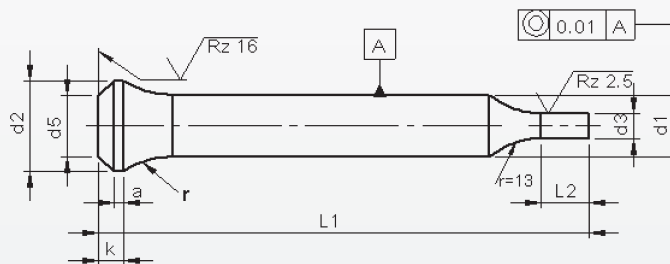
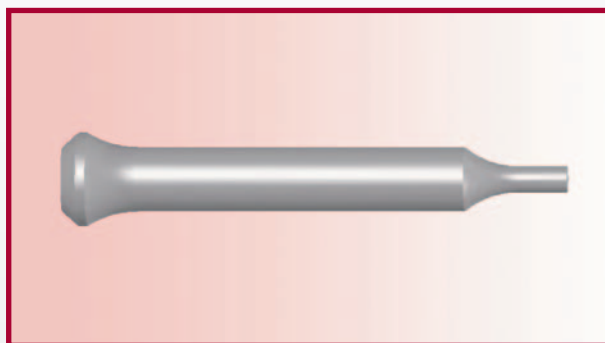
**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%



# Punches with bottle neck type PP

With reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

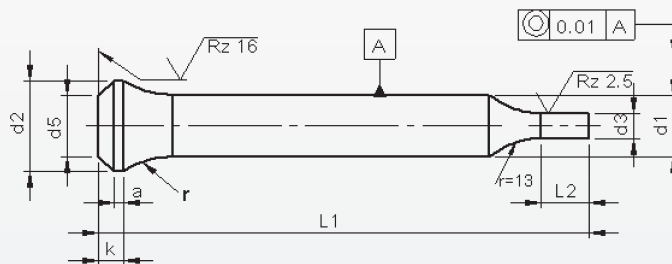
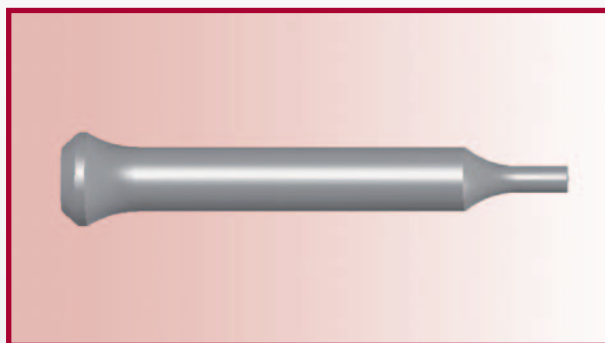
d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub>	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>				
				71	80	90	100	120
h6	≥	h6 ≤	+0.5 +0.0	Price by piece in EUROS				
5,0	2,5	– 4,9	10	8,93	9,56	10,24	10,92	12,55
5,5	2,5	– 4,4		9,82	10,50	11,24	11,97	13,70
6,0	3,0	– 5,9		10,29	11,03	11,76	12,60	14,44
6,5	3,0	– 6,4		11,19	11,92	12,71	13,60	15,49
7,0	3,5	– 6,9		11,50	12,24	13,08	14,02	16,02
7,5	3,0	– 7,4		11,82	12,55	13,44	14,44	16,54
8,0	3,5	– 7,9	13	12,13	12,97	13,86	14,86	17,07
8,5	4,0	– 8,4		13,23	14,07	15,01	16,06	18,32
9,0	4,0	– 8,9		13,60	14,44	15,43	16,38	18,85
9,5	4,5	– 9,4		13,96	14,80	15,85	16,85	19,37
10,0	5,0	– 9,9	17	14,28	15,22	16,27	17,43	20,00
10,5	5,5	– 10,4		15,39	16,44	17,49	18,67	21,35
11,0	5,5	– 10,9		15,81	16,96	18,01	19,23	22,01
11,5	6,0	– 11,4		16,23	17,49	18,54	19,79	22,67
12,0	6,0	– 11,9		16,54	18,01	19,06	20,34	23,34
12,5	7,0	– 12,4		17,02	18,01	19,59	20,90	24,00
13,0	9,0	– 12,9		17,49	18,70	20,01	21,48	24,68
13,5	9,0	– 13,4		19,90	21,14	22,47	24,05	27,36
14,0	9,5	– 13,9		20,37	21,64	23,00	24,68	28,09
14,5	9,5	– 14,4		20,85	22,15	23,52	25,31	28,83

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

See page 2 for extra charges and discount.

# Punches with bottle neck type PP

With reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub> h6	d <sub>3</sub> h6			l <sub>2</sub> +0.5 +0.0	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>				
	≥	–	≤		71	80	90	100	120
<b>Price by piece in EUROS</b>									
15,0	10,0	–	14,9	17	21,32	22,65	24,26	25,94	29,56
15,5	10,5	–	15,4		21,79	23,16	24,78	26,57	30,40
16,0	12,0	–	15,9		22,21	23,68	25,36	27,15	31,14
16,5	12,5	–	16,4		25,44	26,94	28,66	30,50	34,60
17,0	13,0	–	16,9		25,84	27,44	29,14	31,03	35,23
17,5	13,0	–	17,4		26,24	27,95	29,61	31,55	35,86
18,0	13,5	–	17,9		26,64	28,45	30,08	32,08	35,44
18,5	13,5	–	18,4		27,04	28,96	30,55	32,60	36,07
19,0	14,0	–	18,9		27,43	29,46	31,03	33,13	36,70
19,5	15,0	–	19,4		26,89	29,96	31,50	33,65	37,33
20,0	16,0	–	19,9		28,24	30,03	32,02	34,18	39,06
25,0	18,0	–	24,9		35,54	37,80	40,27	43,00	46,09

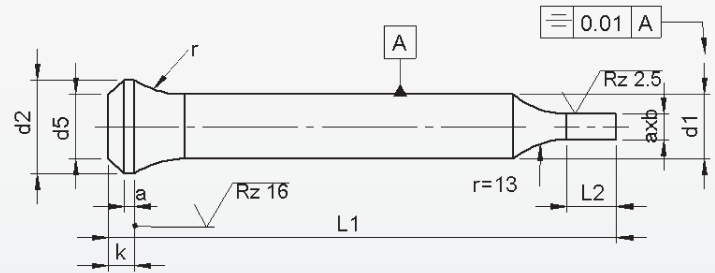
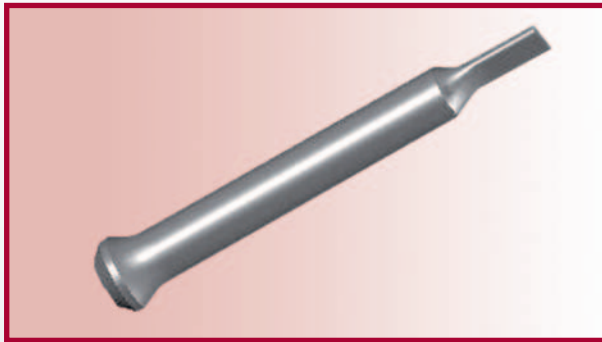
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

# Punches with bottle neck type PP..

With reduced shaft 'Form'

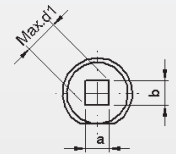
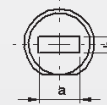
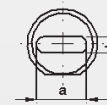
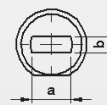


type PF

type PO

type PR

type PS



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub> h6	axb		l <sub>2</sub> +0.5 +0.0	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>					Locking flat	
	b ≥	a ≤		71	80	90	100	120		
				<b>Price by piece in EUROS</b>						
5	2,5	4,9	10	22,58	23,21	23,89	24,57	26,20	4,15	
5.5	2,5	4,4		23,00	23,68	24,42	25,15	26,88		
6	3,0	5,9		23,47	24,21	24,94	25,78	27,62		
6.5	3,0	6,4		29,30	30,03	30,82	31,71	33,60		
7	3,5	6,9		29,61	30,35	31,19	32,13	34,13		
7.5	3,0	7,4		29,93	30,66	31,55	32,55	34,65		
8	3,5	7,9	13	30,24	31,08	31,97	32,97	35,18		5,51
8.5	4,0	8,4		30,61	31,45	32,39	33,44	35,70		
9	4,0	8,9		30,98	31,82	32,81	33,76	36,23		
9.5	4,5	9,4		31,34	32,18	33,23	34,23	36,75		
10	5,0	9,9		31,66	32,60	33,65	34,81	37,38		
10.5	5,5	10,4		32,08	33,13	34,18	35,36	38,04		
11	5,5	10,9	17	32,50	33,65	34,70	35,92	38,70		
11.5	6,0	11,4		32,92	34,18	35,23	36,48	39,36		
12	6,0	11,9		33,23	34,70	35,75	37,03	40,03		
12.5	7,0	12,4		33,71	34,70	36,28	37,59	40,69		
13	9,0	12,9		34,18	35,39	36,70	38,17	41,37		
13.5	9,0	13,4		34,65	35,89	37,22	38,80	42,11		
14	9,5	13,9	17	35,12	36,39	37,75	39,43	42,84	5,51	
14.5	9,5	14,4		35,60	36,90	38,27	40,06	43,58		

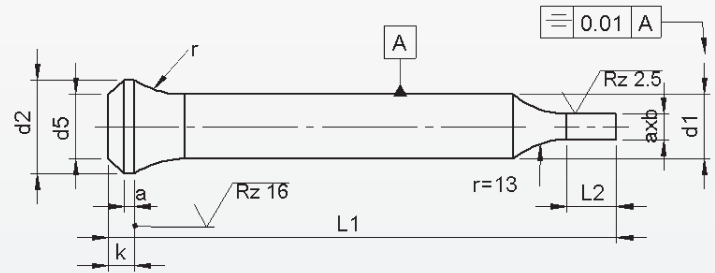
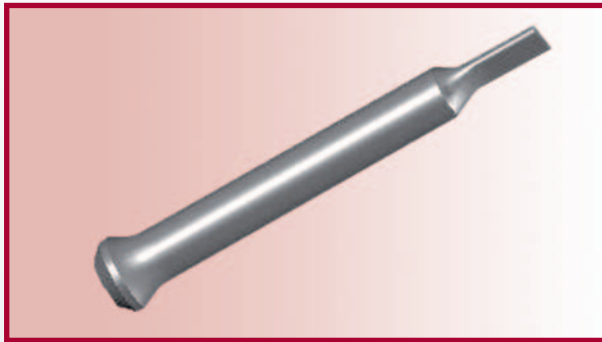
**Punches with key-flat against surcharge.**

**Without detailed specification the key-flat is parallel to the major axis of surface a.**

**Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.**

# Punches with bottle neck type PP..

With reduced shaft 'Form'



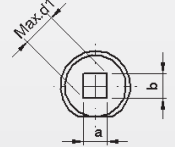
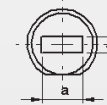
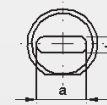
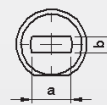
**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

type PF

type PO

type PR

type PS



d <sub>1</sub> h6	axb		l <sub>2</sub> +0.5 +0.0	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>					Locking flat
	b ≥	a ≤		71	80	90	100	120	
	± 0.01			<b>Price by piece in EUROS</b>					
15	10,0	14,9	17	36,07	37,40	39,01	40,69	44,31	5,51
15.5	10,5	15,4		36,54	37,91	39,53	41,32	45,15	
16	12,0	15,9		36,96	38,43	40,11	41,90	45,89	
16.5	12,5	16,4		48,39	49,89	51,61	53,45	57,55	8,30
17	13,0	16,9		48,79	50,39	52,09	53,98	58,18	
17.5	13,0	17,4		49,19	50,90	52,56	54,50	58,81	
18	13,5	17,9		49,59	51,40	53,03	55,03	58,39	
18.5	13,5	18,4		49,99	51,91	53,50	55,55	59,02	
19	14,0	18,9		50,38	52,41	53,98	56,08	59,65	
19.5	15,0	19,4		49,84	52,91	54,45	56,60	60,28	
20	16,0	19,9		51,19	52,98	54,97	57,13	62,01	
25	30	30		61,06	63,32	65,79	68,52	74,55	9,66

**Punches with key-flat against surcharge.**

Without detailed specification the key-flat is parallel to the major axis of surface a.

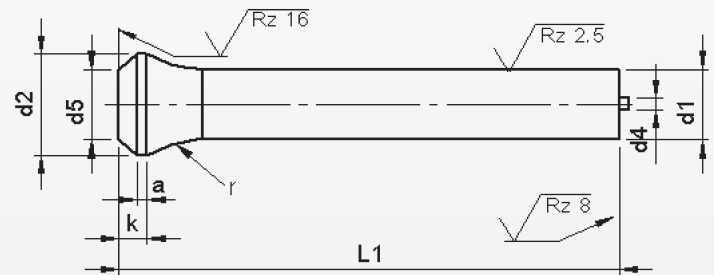
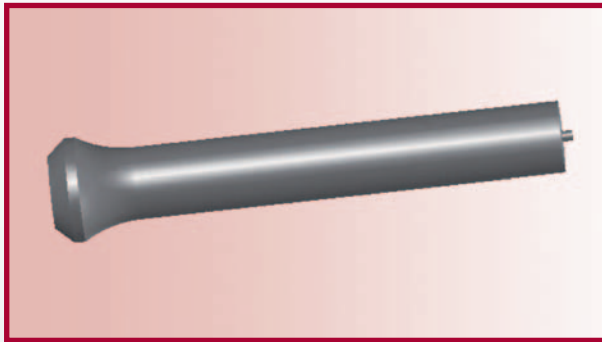
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches with bottle neck type EP

With ejector



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

Head: 50 ±5 HRC

d <sub>1</sub>	k	a	d <sub>5</sub>	r	d <sub>4</sub>	l <sub>1</sub>				
						71	80	90	100	120
h6	$\begin{matrix} 0 \\ -0.2 \end{matrix}$	$\begin{matrix} +0.2 \\ 0 \end{matrix}$				<b>Price by piece in EUROS</b>				
5	4	1,5	d1 ± 0,1	10	1	20,06	22,13	24,31	26,75	
6						20,31	22,38	24,63	27,06	
8				12	1,5	20,25	22,31	24,50	27,00	32,38
10						15	2,3	21,94	24,13	26,50
13				24,94	27,38			30,13	33,13	39,75
16				28,25	31,06	34,19	37,63	45,13		
20				32,06	35,25	38,75	42,63	51,19		
25				37,05	40,44	43,85	47,63	57,98		

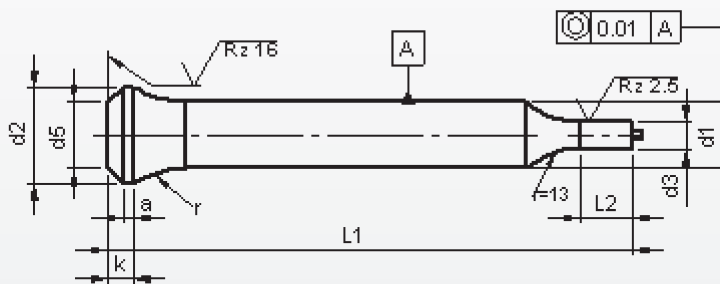
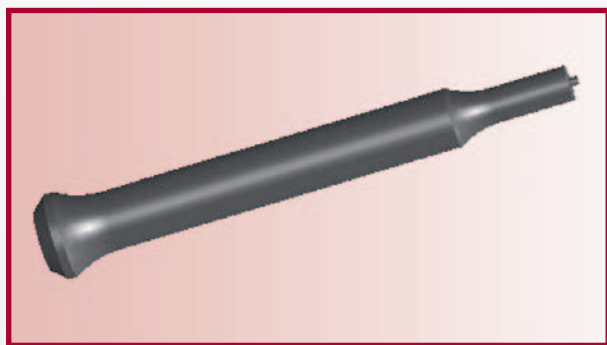
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches with bottle neck type EPP

With ejector and reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub> +0.5 0	l <sub>1</sub>					
	≥	h <sub>6</sub> -		≤	71	80	90	100	120
<b>Price by piece in EUROS</b>									
5	3,0	-	4,9	10	24,04	26,14	28,49	31,04	
6	3,0	-	5,9		24,21	26,36	28,66	31,16	
8	3,5	-	7,9	13	24,99	27,14	29,44	32,04	37,59
10	5,0	-	9,9	17	27,47	29,77	32,22	35,02	41,07
13	9,0	-	12,9		30,30	35,66	35,49	38,49	45,11
16	12,0	-	15,9		36,70	39,60	42,85	46,45	54,25
20	16,0	-	19,9		43,48	43,78	50,43	54,48	63,38
25	18	-	24,9		50,12	53,51	56,92	60,70	71,05

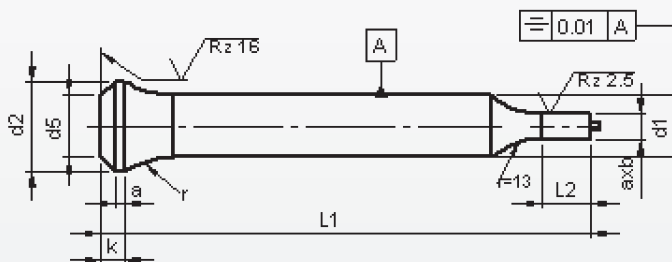
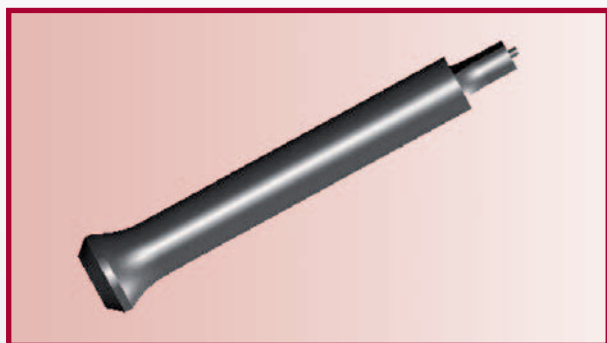
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

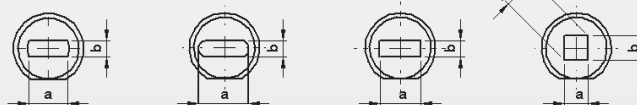
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches with bottle neck type EP..

With ejector with reduced shaft 'Form'



type EPF      type EPO      type EPR      type EPS

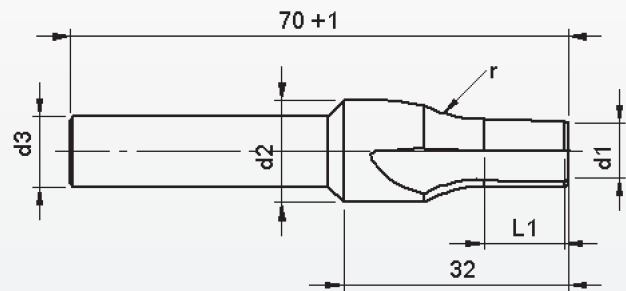
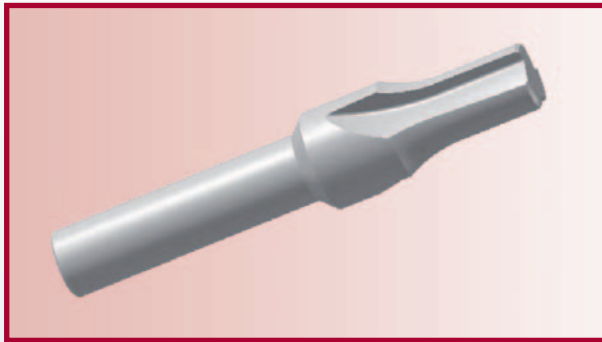


**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	axb ± 0.01		l <sub>2</sub> + 0.5 0	l <sub>1</sub>					
				63/71	80	90	100	120	Locking flat
<b>Price by piece in EUROS</b>									
5	2.5	4.9	10	36,60	38,67	40,85	43,29		4,15
6	3.0	5.9		36,85	38,92	41,17	43,60		
8	4.0	7.9	13	42,30	44,36	46,55	49,05	54,43	5,51
10	5.0	9.9	17	43,90	46,18	48,55	51,24	57,05	
13	9.0	12.9		46,99	49,43	52,18	55,18	61,80	
16	12.0	15.9		50,30	53,11	56,24	59,68	67,18	
20	16.0	19.9		65,14	66,73	73,38	77,43	84,27	
25	18	24,9		75,64	79,03	82,44	86,22	96,57	9,66

# Posaunenhead-countersink

For punches with bottle neck

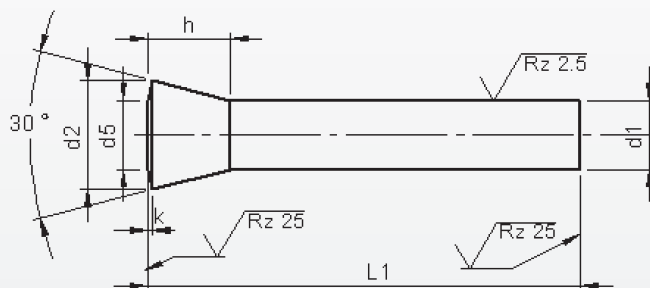
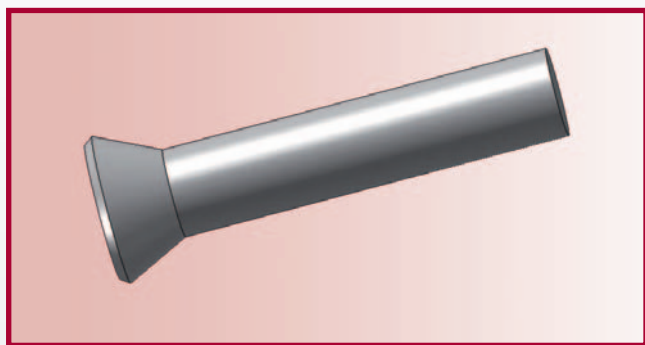


**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

d <sub>1</sub> f7	d <sub>2</sub> h8	d <sub>3</sub> h11	r	L <sub>1</sub>	X*(d <sub>1</sub> )	Price by piece in EUROS
5,0	7,4	10,0	10,0	10,0	0,1	37,50
5,5	8,5					41,50
6,0	9,5					45,50
6,5 - 7,0	10,5					48,50
7,5 - 8,0	11,5					52,50
8,5 - 9,0	13,5		10,0	12,0		61,00
9,5 - 10,0	14,5					65,00
10,5 - 11,0	15,5					65,00
11,5 - 12,0	16,5					65,00
12,5 - 13,0	17,5					79,00
13,5 - 14,0	18,5	16,0	10,0	15,0	79,00	
14,5 - 15,0	19,5				79,00	
15,5 - 16,0	20,5				79,00	
16,5 - 17,0	21,5				89,00	
17,5 - 18,0	22,5				89,00	
18,5 - 19,0	23,5				89,00	
19,5 - 20,0	25,5				89,00	
25,0	26,5				95,00	





**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>2</sub>	d <sub>5</sub>	h	k	L <sub>1</sub> <sup>+1.0</sup> <sub>0</sub>				
					71	80	90	100	120
h6	- 0.3 - 0.0				<b>Price by piece in EUROS</b>				
4	6.6	3.8	6	1	6,04	6,62	7,56	8,45	
5	8.2	5	7	1	6,04	6,67	7,35	8,03	9,66
6	9.7	6	8	1	6,93	7,67	8,40	9,24	11,08
7	11.8	7	10	1	8,19	9,03	9,92	10,92	13,13
8	12.8	8	10	1	9,61	10,55	11,60	12,76	15,33
9	14.4	9	11	1	10,87	11,81	12,86	14,02	16,59
10	15.9	10	12	1	12,13	13,34	14,65	16,12	19,32
11	17.4	11	13	1.5	13,49	14,70	14,96	17,48	20,69
12	18.7	12	14	1.5	14,91	16,38	18,06	19,85	23,84
13	20.2	13	15	1.5	15,96	17,43	19,11	20,90	24,89
14	21.8	14	16	1.5	17,06	18,64	20,16	21,95	25,94
15	23.3	15	17	1.5	18,11	19,90	21,89	24,05	28,93
16	24.6	16	18	2	19,16	20,95	22,94	25,10	29,98

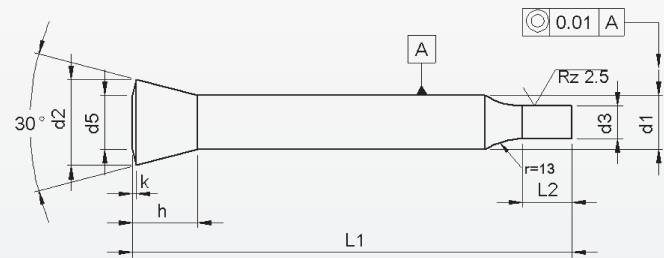
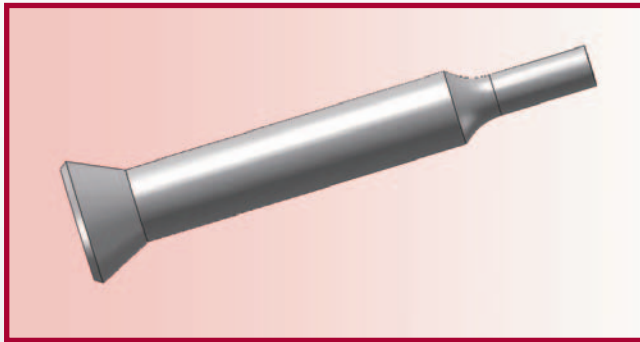
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches with conical head 30°

With reduced shaft 'Round'



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

Head: 50 ±5 HRC

d1	d3		l2	l1 +1.0 0					
				71	80	90	100	120	
h6	≥	h6 — ≤	+ 0.5 + 0.0	Price by piece in EUROS					
4	1,6	—	3,9	10	8,66	9,24	10,19	11,08	
5	2,5	—	2,4	10	8,93	9,56	10,24	10,92	12,55
6	3,0	—	2,9	10	10,29	11,03	11,76	12,60	14,44
7	3,0	—	6,9	10	12,13	12,97	13,86	14,86	17,06
8	4,0	—	7,9	13	13,55	14,49	15,54	16,70	19,27
9	4,5	—	8,9	13	15,54	16,49	17,54	18,69	21,26
10	5,0	—	9,9	17	16,80	18,01	19,32	20,95	23,99
11	5,0	—	10,9	17	18,85	19,95	20,32	22,84	25,94
12	6,0	—	11,9	17	20,27	21,74	23,42	25,20	29,19
13	9,0	—	12,9	17	21,32	22,79	24,47	26,25	30,24
14	9,5	—	13,9	17	24,36	25,94	27,46	29,24	33,23
15	10,0	—	14,9	17	25,41	27,20	29,19	31,34	36,23
16	12,0	—	15,9	17	26,46	28,25	30,24	32,39	37,28

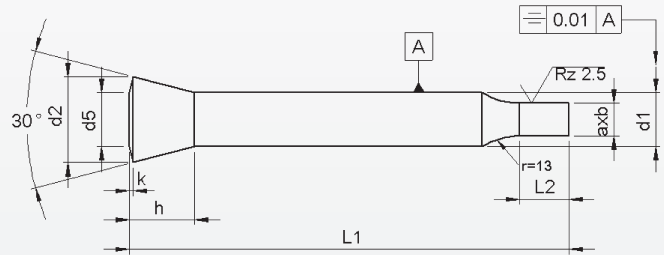
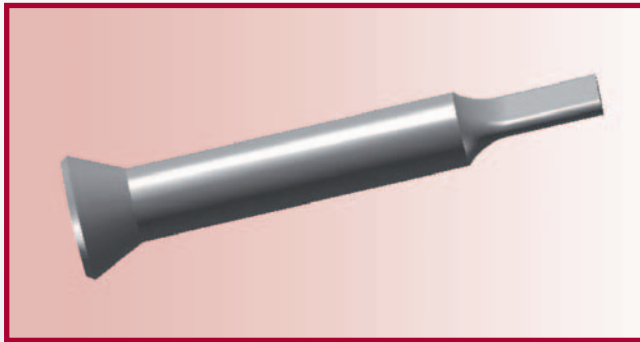
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Punches with conical head 30°

With reduced shaft 'Form'

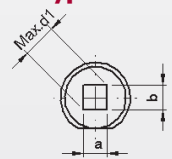
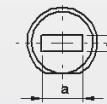
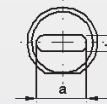
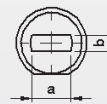


Type 30F

Type 300

Type 30R

Type 30S



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	axb		l <sub>2</sub>	l <sub>1</sub> <sup>+1.0</sup> / <sub>0</sub>					Verdrehsicherung
	b	a		71	80	90	100	120	
h6	≥	≤	+0.5	Price by piece in EUROS					
4	1,6	3,9	10	22,58	23,15	24,10	24,99		4,15
5	2,5	2,4	10	22,58	23,21	23,89	24,57	26,20	
6	3,0	2,9	10	23,47	24,20	24,94	25,78	27,62	
7	3,0	6,9	10	24,73	25,57	26,46	27,46	29,66	5,51
8	4,0	7,9	13	31,66	32,60	33,65	34,81	37,38	
9	4,5	8,9	13	32,92	33,86	34,91	36,07	38,64	
10	5,0	9,9	17	34,18	35,39	36,70	38,17	41,37	
11	5,0	10,9	17	35,54	36,75	37,01	39,53	42,74	
12	6,0	11,9	17	36,96	38,43	40,11	41,90	45,89	
13	9,0	12,9	17	38,01	39,48	41,16	42,95	46,94	
14	9,5	13,9	17	39,11	40,69	42,21	44,51	47,99	
15	10,0	14,9	17	40,16	41,95	43,94	46,10	50,98	
16	12,0	15,9	17	41,21	43,00	44,99	47,15	52,03	

**Punches with key-flat against surcharge.**

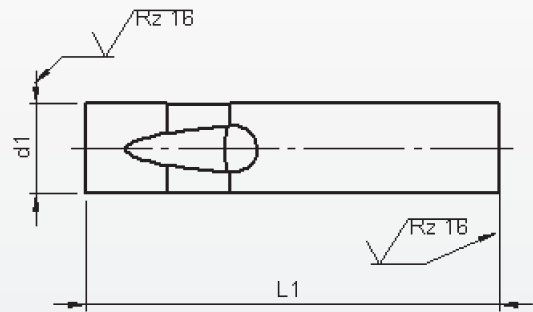
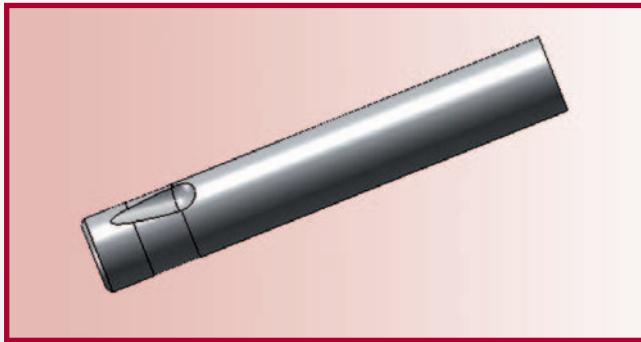
Without detailed specification the key-flat is parallel to the major axis of surface a.

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

**Ball-Lock punch type BT** (Light Duty)  
**Ball-Lock punch type BHT** (Heavy Duty)



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	l <sub>1</sub> <sup>+0.3</sup> <sub>+0.2</sub>				
	63/71	80	93	100	125
g5	Price by piece in EUROS				
6	8,19	8,82	9,56	10,40	12,08
10	10,71	11,55	12,65	13,70	16,17
13	13,13	14,18	15,49	16,91	19,95
16	15,75	17,22	18,74	20,48	24,15
20	18,80	20,48	22,42	24,52	29,03
25	22,94	25,10	27,46	30,03	35,70

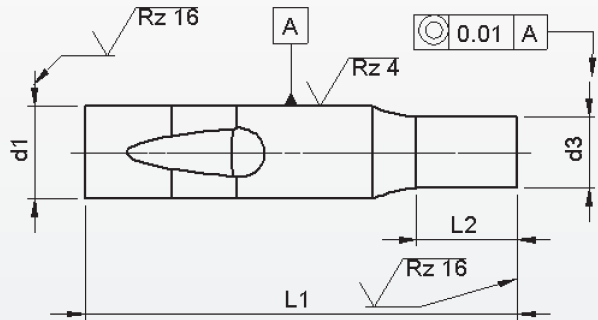
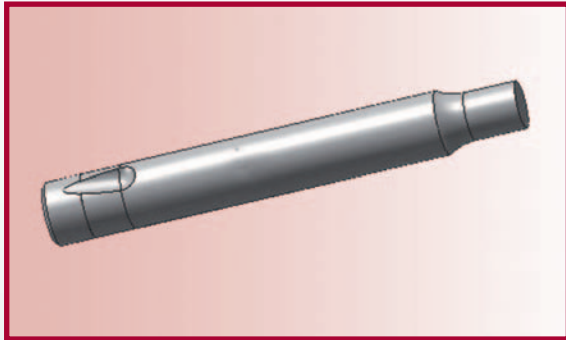
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

**Ball-Lock punch type BTP** (Light Duty)  
**Ball-Lock punch type BTPP** (Heavy Duty)

With reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub>	l <sub>1</sub> <sup>+0.3</sup> / <sub>+0.2</sub>					
				63/71	80	93	100	125	
g <sub>5</sub>	≥	<sup>+0.01</sup> / <sub>-0.0</sub>	≤	+0.5 +0.0					
				<b>Price by piece in EUROS</b>					
6	3,0	–	5,9	10	11,55	12,18	12,92	13,76	15,44
10	5,0	–	9,9	17	15,38	16,22	17,33	18,38	20,84
13	9,0	–	12,9	17	18,48	19,53	20,84	22,26	25,31
16	12,0	–	15,9	17	23,05	24,52	26,04	27,77	31,45
20	16,0	–	19,9	17	28,93	30,61	32,55	34,65	39,17
25	20,0	–	24,9	17	36,02	38,17	40,53	43,10	48,77

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

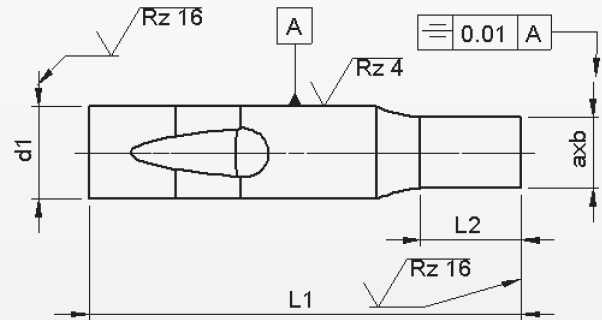
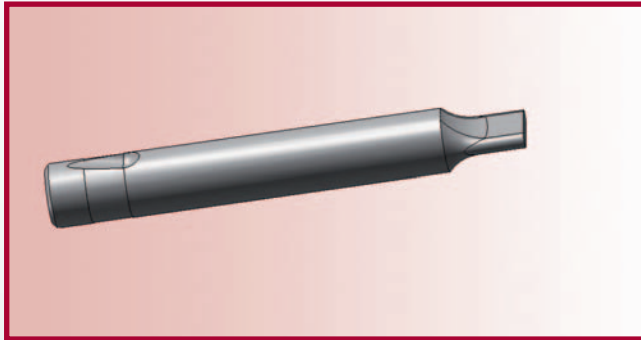
**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

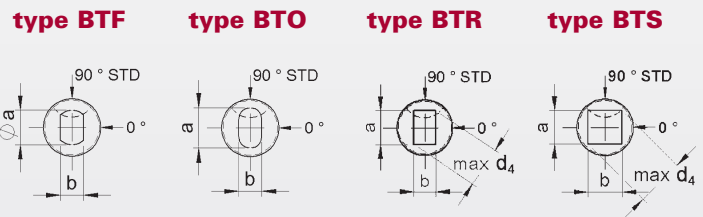
# Ball-Lock punch type BT.. (Light Duty)

# Ball-Lock punch type BHT.. (Heavy Duty)

With reduced shaft 'Form'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC



d <sub>1</sub>	axb			l <sub>2</sub>	l <sub>1</sub> <sup>+0.3</sup> / <sub>+0.2</sub>				
	b	±0.01	a		63/71	80	93	100	125
g <sub>5</sub>	≥		≤	<sup>+0.5</sup> / <sub>+0.0</sub>	Price by pièce in EUROS				
6	3,0	–	5,9	10	24,73	25,36	26,09	26,93	28,61
10	5,0	–	9,9	17	32,76	33,60	35,18	35,75	38,22
13	9,0	–	12,9	17	35,18	36,23	37,54	38,96	42,00
16	12,0	–	15,9	17	37,80	39,27	40,79	42,53	46,20
20	16,0	–	19,9	17	51,87	53,55	55,49	57,59	62,11
25	20,0	–	24,9	17	61,53	63,68	66,05	68,62	74,29

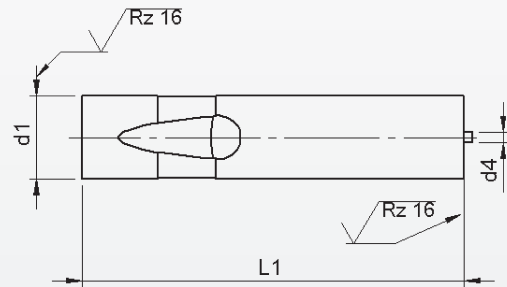
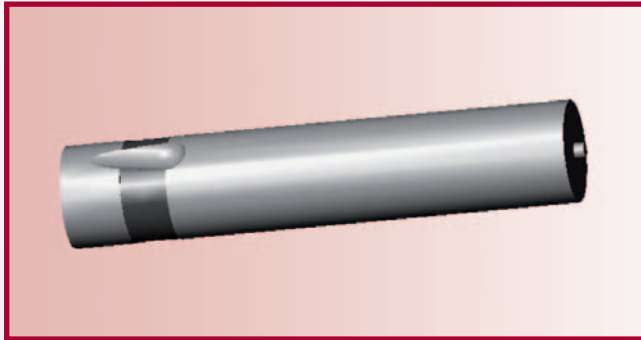
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

**Ball-Lock punch type EB** (Light Duty)  
**Ball-Lock punch type EHB** (Heavy Duty)

With ejector



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

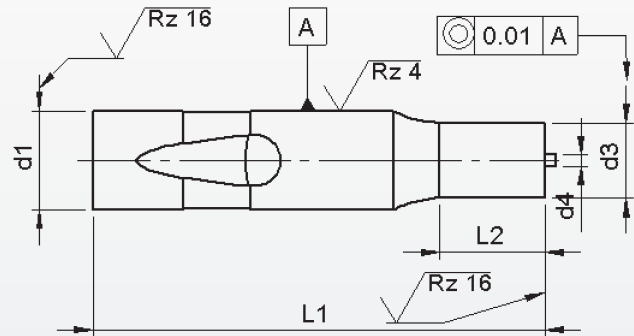
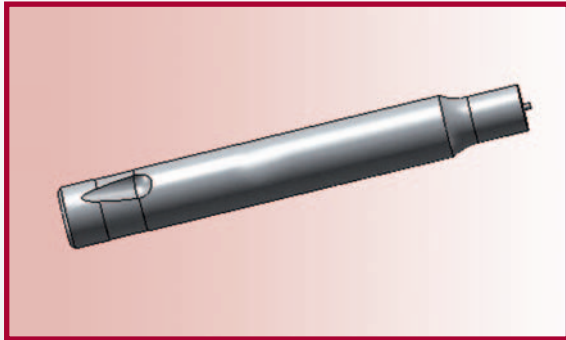
d1	L1 <sup>+0.3</sup> / <sub>+0.2</sub>				
	63/71	80	93	100	125
g5	Price by piece in EUROS				
6	18,69	19,32	20,06	20,90	22,58
10	21,21	22,05	23,15	24,20	26,67
13	23,63	24,68	25,99	27,41	30,45
16	26,25	27,72	29,24	30,98	34,65
20	29,30	30,98	32,92	35,02	39,53
25	33,44	35,60	37,96	40,53	46,20

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

**Ball-Lock punch type TP** (Light Duty)  
**Ball-Lock punch type EBHTP** (Heavy Duty)  
 With ejector with reduced shaft 'Round'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

d <sub>1</sub>	d <sub>3</sub>		l <sub>2</sub>	l <sub>1</sub> <sup>+0.3</sup> / <sub>+0.2</sub>					
				63/71	80	93	100	125	
g <sub>5</sub>	≥	<sup>+0.01</sup> / <sub>-0.0</sub>	≤	Price by piece in EUROS					
6	3,0	–	5,9	10	22,05	22,68	23,42	24,47	25,94
10	5,0	–	9,9	17	25,88	26,72	27,83	28,88	31,34
13	9,0	–	12,9	17	28,98	30,03	31,34	33,81	35,81
16	12,0	–	15,9	17	34,60	35,02	36,54	38,27	41,95
20	16,0	–	19,9	17	49,93	41,11	43,05	45,15	49,67
25	20,0	–	24,9	17	46,52	48,67	51,03	53,60	59,27

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

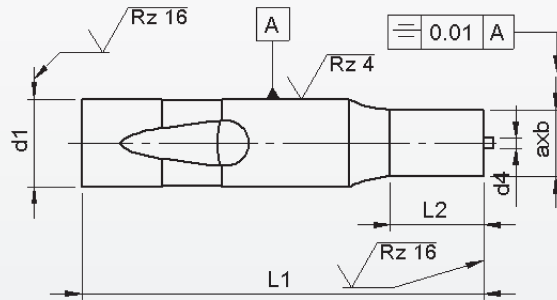
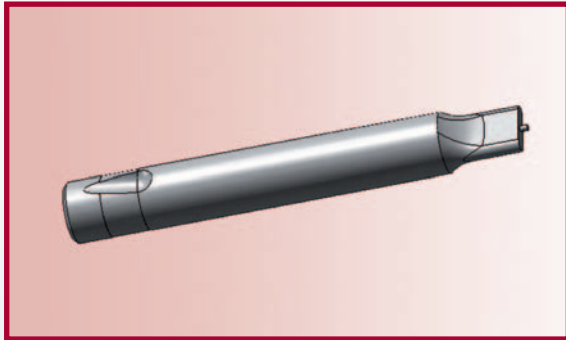
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%



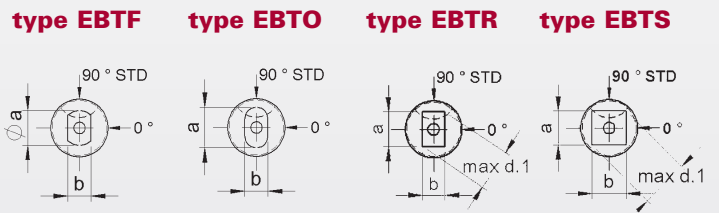
# Ball-Lock punch type EBT.. (Light Duty)

# Ball-Lock punch type EBHT.. (Heavy Duty)

With ejector with reduced shaft 'Form'



**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC



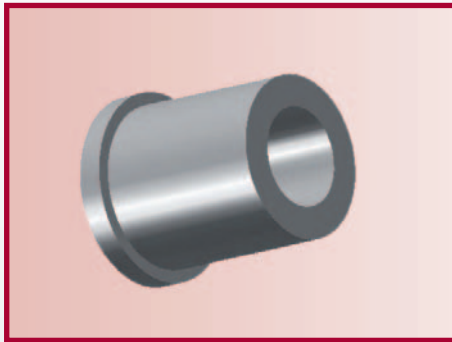
d <sub>1</sub>	axb		l <sub>2</sub>	l <sub>1</sub> <sup>+0.3</sup> / <sub>+0.2</sub>					
				63/71	80	93	100	125	
g <sub>5</sub>	b ≥	± 0.01	a ≤	Price by piece in EUROS					
6	3,0	–	5,9	10	35,23	35,86	36,59	37,43	39,11
10	5,0	–	9,9	17	43,26	44,10	45,68	46,25	48,72
13	9,0	–	12,9	17	45,68	46,73	48,04	49,46	52,50
16	12,0	–	15,9	17	48,30	49,77	51,29	53,03	56,70
20	16,0	–	19,9	17	62,37	64,05	65,99	68,09	72,61
25	20,0	–	24,9	17	72,03	74,18	76,55	79,12	84,79

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

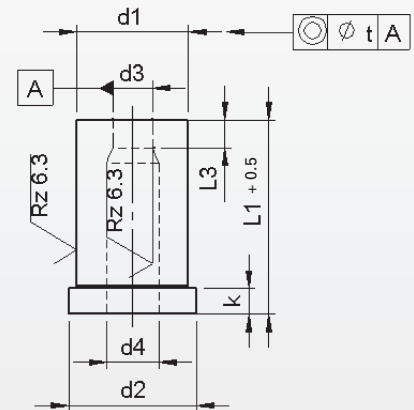
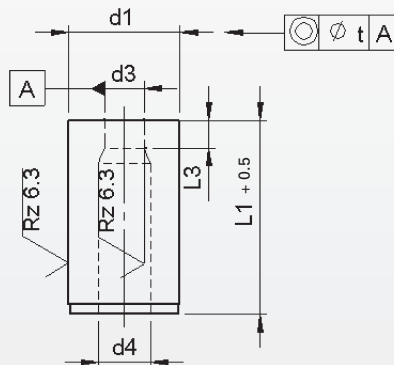
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

# Die buttons DIN 9845 A / B



type A

type B

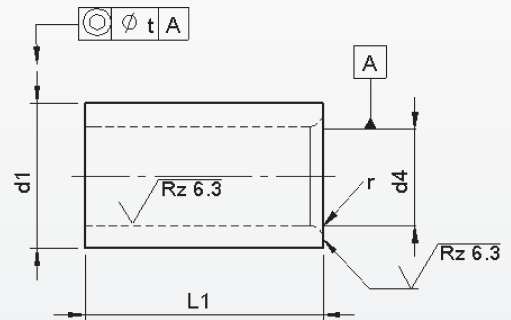
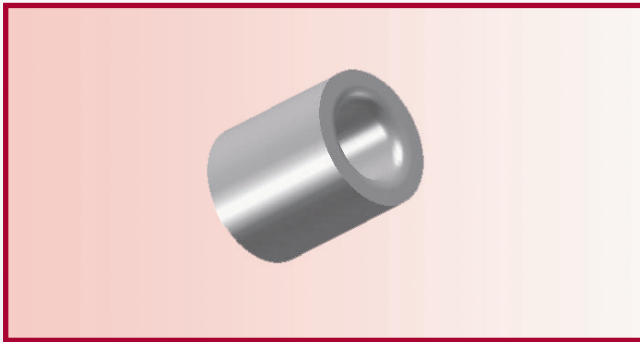


**Material:** HWS (1.2379)  
**Hardness:** Shaft: 64 ±2 HRC

d <sub>1</sub> Typ A n6 Typ B k6	d <sub>2</sub>	k	d <sub>3</sub> H8	l <sub>3</sub>	d <sub>4</sub> ± 0.1	Form A		Form B		
						l <sub>1</sub>	l <sub>1</sub>	l <sub>1</sub>	l <sub>1</sub>	
						20	28	20	28	
<b>Príče by piče in ĚUROŠ</b>										
5	7	4	1.0	2.0	d <sub>1</sub> + 0.3	13,95		16,80		
6	8		1.0	2.0	3.0	d <sub>1</sub> + 0.3	9,55	12,30	11,20	14,85
7	9		2.1	3.0	3.0	d <sub>1</sub> + 0.5	7,95	9,95	11,20	12,00
8	10		3.1	4.0	3.0	d <sub>1</sub> + 0.5	7,95	9,25	11,20	12,00
10	12		4.1	5.0	4.0	d <sub>1</sub> + 0.7	7,95	9,25	11,20	12,00
12	14		5.1	6.0	4.0	d <sub>1</sub> + 0.7	7,95	9,25	11,20	12,00
15	17		6.1	8.0	4.0	d <sub>1</sub> + 0,7	7,95	10,75	10,35	12,95
18	20		8.1	10.0	4.0	d <sub>1</sub> + 1.0	7,95	11,35	11,40	13,75
22	24		10.1	12.0	5.0	d <sub>1</sub> + 1.0	9,75	11,95	11,75	14,50
26	28		12.1	15.0	5.0	d <sub>1</sub> + 1.0	12,95	15,68	15,70	18,95
30	32		15.1	18.0	5.0	d <sub>1</sub> + 1.0		19,45		23,90

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

# Die buttons DIN 9845 C

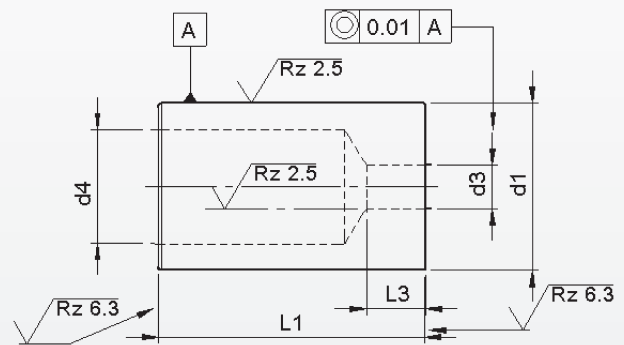
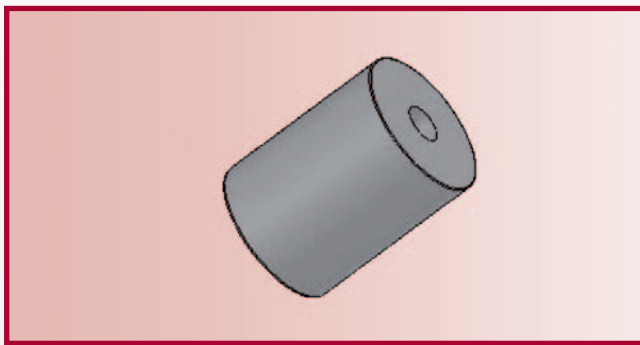


**Material:** HWS (1.2379)  
**Hardness:** Shaft: 64 ±2 HRC

d <sub>4</sub>			d <sub>1</sub>	l <sub>1</sub>	r	t	d <sub>4</sub>	Price by piece in EUROS
≥	H7	≤	n6					
		1.0	5	9	1.0	0.01	0.10	11,35
1.1	-	2.0	6	12	1.0	0.01	0.10	9,75
2.1	-	3.0	7	12	1.0	0.01	0.10	6,50
3.1	-	4.0	8	12	1.0	0.01	0.10	4,90
4.1	-	5.0	10	16	1.0	0.01	0.10	5,40
5.1	-	6.0	12	16	1.5	0.01	0.10	6,10
6.1	-	8.0	15	20	1.5	0.01	0.10	7,00
8.1	-	10.0	18	20	2.0	0.01	0.10	8,00
10.1	-	12.0	22	28	2.0	0.01	0.10	10,00
12.1	-	15.0	26	28	2.0	0.01	0.10	12,50
15.5	-	18.0	30	36	2.0	0.01	0.50	20,50

# Die buttons ISO 8977 A

With round holes



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

d <sub>1</sub>	l <sub>3</sub>	d <sub>3</sub> +0.02 0	d <sub>4</sub>	l <sub>1</sub> <sup>+0.5</sup> <sub>0</sub>								
				16	20	22	25	28	30	32	35	
n5		≥ — ≤		<b>Price by piece in EUROS</b>								
5	2	1,0 — 2,4	2,8	15,00	15,20	15,40	15,60	15,80	16,00	16,20	16,40	
6	3	1,6 — 3,0	3,5	15,00	15,20	15,40	15,60	15,80	16,00	16,20	16,40	
8	4	2,0 — 3,5	4,0	15,00	15,20	15,40	15,60	15,80	16,00	16,20	16,40	
10	4	2,5 — 5,0	5,8	15,60	15,80	16,00	16,20	16,40	16,60	16,80	17,00	
13	5	3,0 — 7,0	8,0		16,45	16,65	16,85	17,05	17,25	17,45	17,65	
16	5	4,0 — 9,0	9,5		17,05	17,25	17,45	17,65	17,85	18,05	18,25	
20	8	6,0 — 11,0	12,0		17,65	17,85	18,05	18,25	18,45	18,65	18,85	
22	8	8,0 — 11,0	15,0		18,50	18,70	18,90	19,10	19,30	19,50	19,70	
25	8	8,0 — 16,0	17,3		19,65	19,85	20,05	20,25	20,45	20,65	20,85	
32	8	8,0 — 20,0	20,7		27,05	27,25	27,45	27,65	27,85	28,05	28,25	
40	8	19 — 27,0	27,7		42,80	43,00	43,20	43,40	43,60	43,80	44,00	
50	8	26 — 36,0	37,0		51,40	51,60	51,80	52,00	52,20	52,40	52,60	

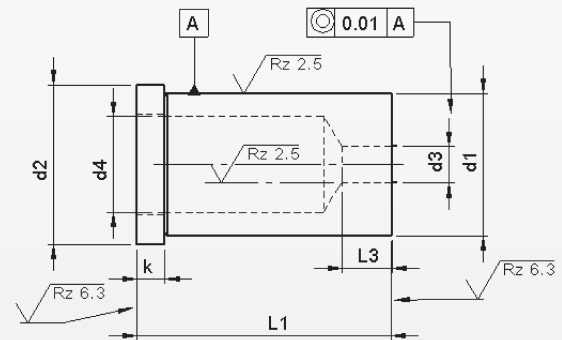
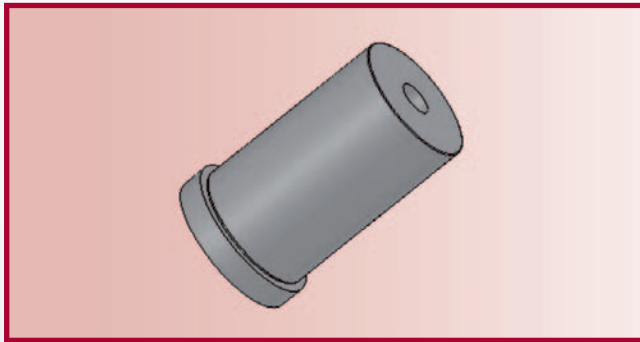
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Die buttons ISO 8977 B

With round holes



**Material:** HSS (1.3343)

**Hardness:** Shaft: 64 ±2 HRC

d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	d <sub>3</sub>	d <sub>4</sub>	k	$l_1^{+0.5}_0$							
						16	20	22	25	28	30	32	35
m5			$\begin{matrix} +0.02 \\ 0 \\ \leq \end{matrix}$		$\begin{matrix} +0.25 \\ 0 \end{matrix}$	<b>Price by piece in EUROS</b>							
5	8	2	1,0 – 2,4	2,8	5	17,00	17,20	17,40	17,60	17,80	18,00	18,20	18,40
6	9	3	1,6 – 3,0	3,5		17,00	17,20	17,40	17,60	17,80	18,00	18,20	18,40
8	11	4	2,0 – 3,5	4,0		17,00	17,20	17,40	17,60	17,80	18,00	18,20	18,40
10	13	4	2,5 – 5,0	5,8		17,60	17,80	18,00	18,20	18,40	18,60	18,80	19,00
13	16	5	3,0 – 7,0	8,0			18,45	18,65	18,85	19,05	19,25	19,45	19,65
16	19	5	4,0 – 9,0	9,5			19,05	19,25	19,45	19,65	19,85	20,05	20,25
20	23	8	6,0 – 11,0	12,0			19,65	19,85	20,05	20,25	20,45	20,65	20,85
22	25	8	8,0 – 14,0	15,0			20,50	20,70	20,90	21,10	21,30	21,50	21,70
25	28	8	8,0 – 16,0	17,3			21,65	21,85	22,05	22,25	22,45	22,65	22,85
32	35	8	8,0 – 20,0	20,7			29,05	29,25	29,45	29,65	29,85	30,05	30,25
40	43	8	19 – 27,0	27,7			44,80	45,00	45,20	45,40	45,60	45,80	46,00
50	53	8	26 – 36,0	37,0		53,40	53,60	53,80	54,00	54,20	54,40	54,60	

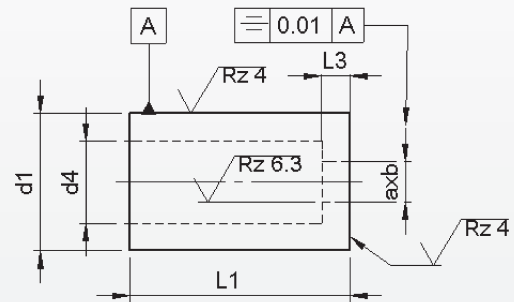
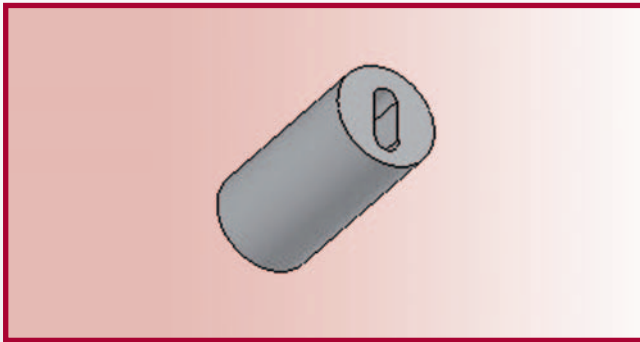
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

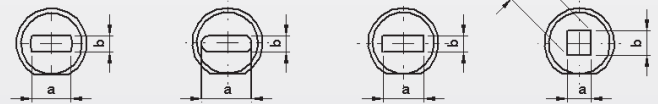
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

# Die buttons ISO 8977 A..

With shape-hole



type 8977A F    type 8977A O    type R    type S



**Materials:** HSS (1.3343)  
**Hardness:** Schacht: 64 ±2 HRC

d <sub>1</sub>	l <sub>3</sub>	d <sub>3</sub>			d <sub>4</sub>	l <sub>1</sub> <sup>+0,5</sup> <sub>0</sub>							
		≥	–	≤		16	20	22	25	28	30	32	35
n5		± 0.01				<b>Price by piece in EUROS</b>							
5	2	1,0	–	2,4	2,8	30,00	30,40	30,80	31,20	31,60	32,00	32,40	32,80
6	3	1,6	–	3,0	3,5	30,00	30,40	30,80	31,20	31,60	32,00	32,40	32,80
8	4	2,0	–	3,5	4,0	30,00	30,40	30,80	31,20	31,60	32,00	32,40	32,80
10	4	2,5	–	5,0	5,8	31,20	31,60	32,00	32,40	32,80	33,20	33,60	34,00
13	5	3,0	–	7,0	8,0		32,90	33,30	33,70	34,10	34,50	34,90	35,30
16	5	4,0	–	9,0	9,5		34,10	34,50	34,90	35,30	35,70	36,10	36,50
20	8	6,0	–	11,0	12,0		35,30	35,70	36,10	36,50	36,90	37,30	37,70
22	8	8,0	–	11,0	15,0		37,00	37,40	37,80	38,20	38,60	39,00	39,40
25	8	8,0	–	16,0	17,3		39,30	39,70	40,10	40,50	40,90	41,30	41,70
32	8	8,0	–	20,0	20,7		54,10	54,50	54,90	55,30	55,70	56,10	56,50
40	8	19	–	27,0	27,7		85,60	86,00	86,40	86,80	87,20	87,60	88,00
50	8	26	–	36,0	37,0		102,80	103,20	103,60	104,00	104,40	104,80	105,20

Cost of locking flat are 15% from total price of die button.

Without detailed specifications the locking is parallel to the major flat axis of surface 'a'.

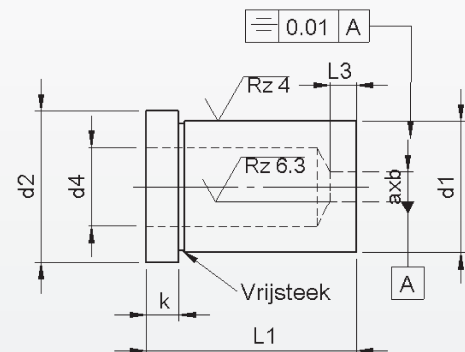
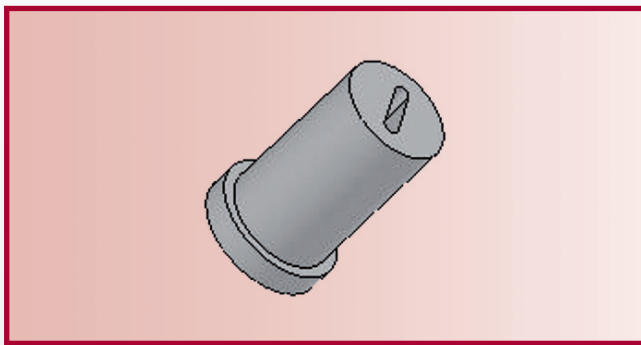
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

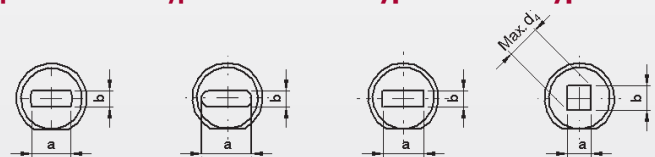
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

# Die buttons ISO 8977 B..

With shape-hole



type 8977B F    type 8977B O    type R    type S



**Materials:** HSS (1.3343)  
**Hardness:** Schacht: 64 ±2 HRC

d <sub>1</sub>	d <sub>2</sub>	l <sub>3</sub>	d <sub>3</sub>			d <sub>4</sub>	k +0.25 0	l <sub>1</sub> <sup>+0.5</sup> / <sub>0</sub>							
			≥	-	≤			16	20	22	25	28	30	32	35
m5			±0.01					<b>Price by piece in EUROS</b>							
5	8	2	1,0	-	2,4	2,8	5	34,00	34,40	34,80	35,20	35,60	36,00	36,40	36,80
6	9	3	1,6	-	3,0	3,5		34,00	34,40	34,80	35,20	35,60	36,00	36,40	36,80
8	11	4	2,0	-	3,5	4,0		34,00	34,40	34,80	35,20	35,60	36,00	36,40	36,80
10	13	4	2,5	-	5,0	5,8		35,20	35,60	36,00	36,40	36,80	37,20	37,60	38,00
13	16	5	3,0	-	7,0	8,0			36,90	37,30	37,70	38,10	38,50	38,90	39,30
16	19	5	4,0	-	9,0	9,5			38,10	38,50	38,90	39,30	39,70	40,10	40,50
20	23	8	6,0	-	11,0	12,0			39,30	39,70	40,10	40,50	40,90	41,30	41,70
22	25	8	8,0	-	14,0	15,0			41,00	41,40	41,80	42,20	42,60	43,00	43,40
25	28	8	8,0	-	16,0	17,3			43,30	43,70	44,10	44,50	44,90	45,30	45,70
32	35	8	8,0	-	20,0	20,7			58,10	58,50	58,90	59,30	59,70	60,10	60,50
40	43	8	19	-	27,0	27,7			101,60	102,00	102,40	102,80	103,20	103,60	104,00
50	53	8	26	-	36,0	37,0			106,80	107,20	107,60	108,00	108,40	108,80	109,20

Cost of locking flat are 15% from total price of die button.

Without detailed specifications the locking is parallel to the major flat axis of surface 'a'.

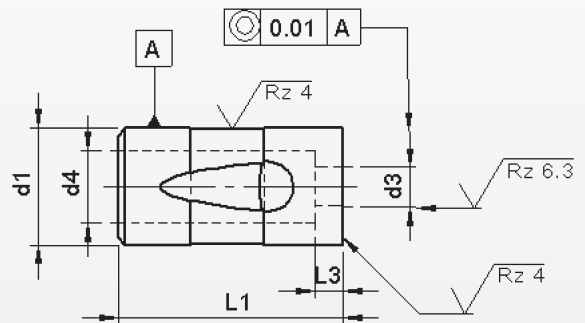
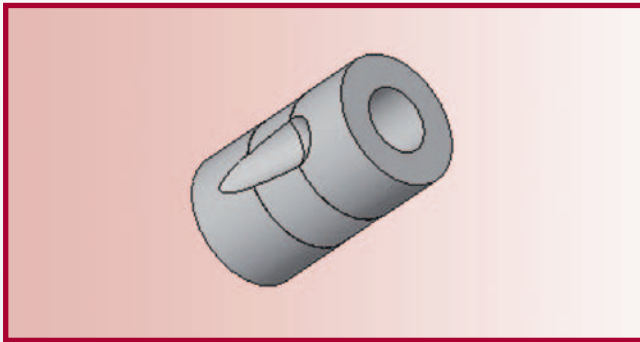
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Die buttons type BTB

With round holes



**Material:** HWS (1.2379)

**Hardness:** Shaft: 64 ±2 HRC

d <sub>1</sub>	l <sub>3</sub>	d <sub>3</sub>			d <sub>4</sub>	l <sub>1</sub>	Price by piece in EUROS
		≥	+0.01 0	≤			
h5 13	3,5	3	-	7	7.5	32	13,91
16	4	4	-	8	9		16,17
20	4,5	6	-	11	12		17,17
25	5	12	-	16	17		22,31
32	6	13	-	20	22		29,66
38	6	16	-	26	28		38,96
63,5	7	25	-	50	51		71,40

Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

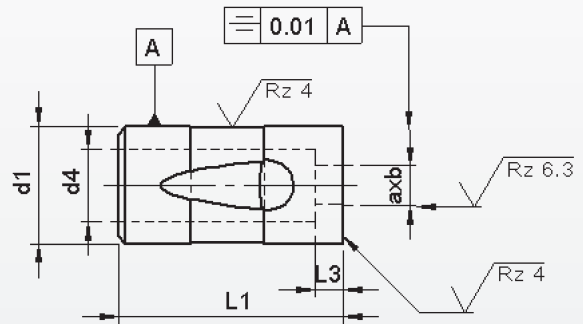
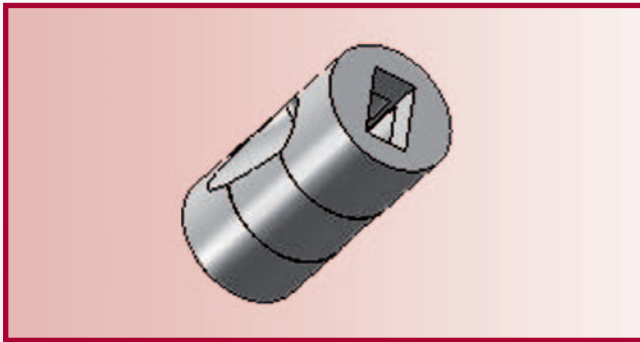
**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

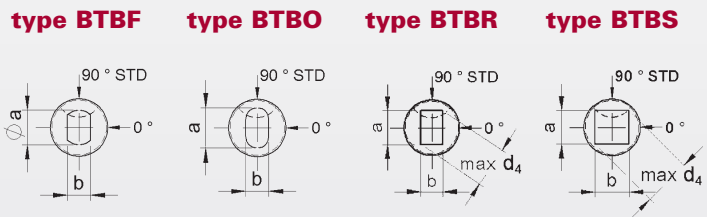


# Die buttons type BTB..

With shape-hole



**Material:** HWS (1.2379)  
**Hardness:** Shaft: 64 ±2 HRC



d <sub>1</sub> h5	l <sub>3</sub>	axb			d <sub>4</sub>	l <sub>1</sub> +0.2 0	Price by piece in EUROS
		b ≥	<sup>+0.01</sup> -	a ≤			
13	3,5	3	-	7	7.5	35,33	
16	4	4	-	8	9	37,59	
20	4,5	6	-	11	12	38,59	
25	5	12	-	16	17	43,73	
32	6	13	-	20	22	51,08	
38	6	16	-	26	28	60,38	
63,5	7	25	-	50	51	92,51	

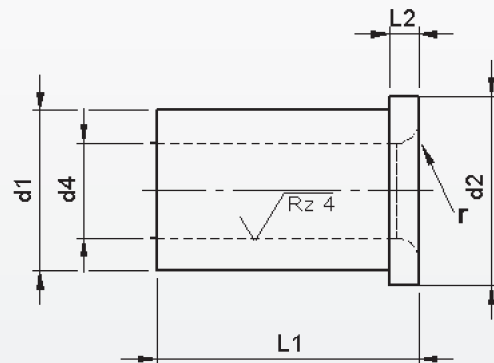
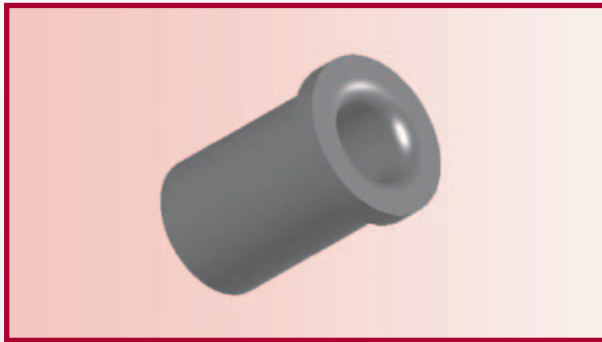
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

**Extra charges and discounts:**

- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

# Press fit jig Bushes DIN 172 a

With shoulder



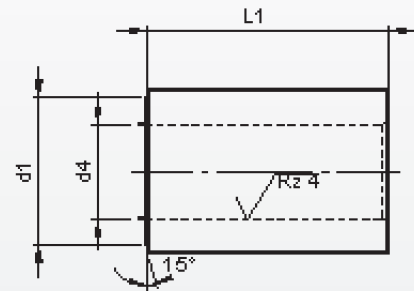
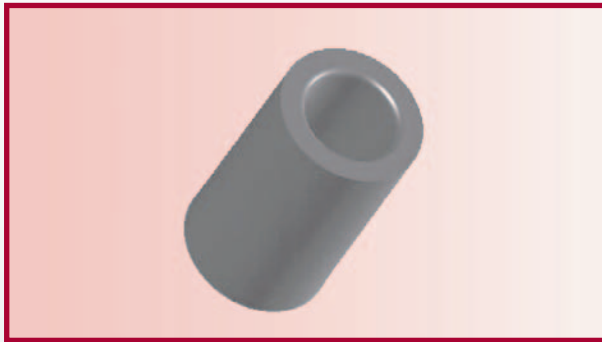
**Material:** 1.7262

**Hardness:** 62-65 HRC

d <sub>4</sub>		d <sub>1</sub>	d <sub>2</sub>	l <sub>2</sub>	Price by piece in EUROS						
					L <sub>1</sub> short	EURO	L <sub>1</sub> middle	EURO	L <sub>1</sub> long	EURO	
0,4	t/m	1,0	6	2	6						
1,1	t/m	1,8	4	2	6			9			
1,9	t/m	2,6	5	2	6		5,30	9	5,72		
2,7	t/m	3,3	6	2,5	8		3,99	12	3,31		
3,4	t/m	4,0	7	2,5	8		3,20	12	3,47	16	6,72
4,1	t/m	5,0	8	2,5	8		3,31	12	3,52	16	5,72
5,1	t/m	6,0	10	3	10		3,41	16	3,57	20	6,04
6,1	t/m	8,0	12	3	10		3,52	16	3,94	20	6,46
8,1	t/m	10,0	15	3	12		3,94	20	4,31	25	6,93
10,1	t/m	12,0	18	4	12		4,25	20	4,83	25	7,82
12,1	t/m	15,0	22	4	16		4,83	28	5,62	36	8,45
15,25	t/m	18,0	26	4	16		5,62	28	7,14	36	11,34
18,25	t/m	22,0	30	5	20		6,56	36	8,51		
22,25	t/m	26,0	35	5	20		8,51	36	11,55		
26,25	t/m	30,0	42	5	25		11,03	45			
30,25	t/m	35,0	48	5	25		13,02	45			
35,50	t/m	40,0	55	5	30		17,06	56			

# Press fit jig Bushes DIN 179 a

Without shoulder

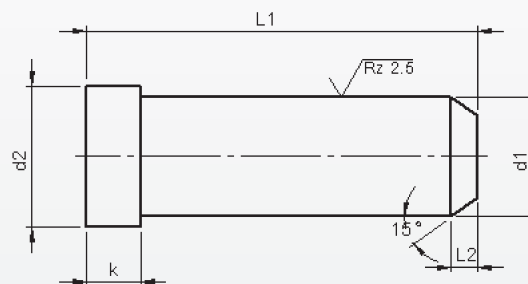
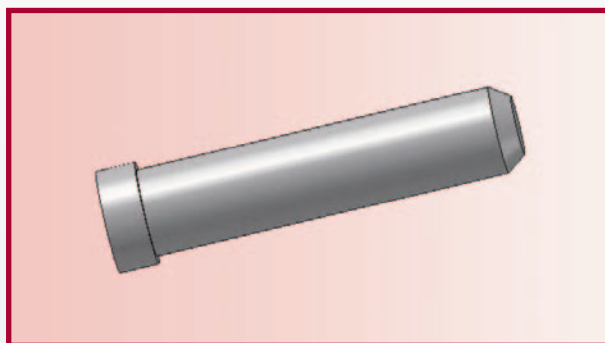


**Material:** 1.7262

**Hardness:** 62-65 HRC

d <sub>4</sub> F7	t/m	d <sub>1</sub> n6	Price by piece in EUROS						
			L <sub>1</sub> short	EURO	L <sub>1</sub> middle	EURO	L <sub>1</sub> long	EURO	
0,4	t/m	1,0	3	6	*	9	*	16	*
1,1	t/m	1,8	4	6	3,36	9	4,62	16	
1,9	t/m	2,6	5	6	2,31	9	3,10	16	
2,7	t/m	3,3	6	8	3,41	12	2,57	16	4,99
3,4	t/m	4,0	7	8	2,47	12	2,63	16	3,75
4,1	t/m	5,0	8	8	2,63	12	2,78	16	4,00
5,1	t/m	6,0	10	10	2,63	16	2,99	20	4,10
6,1	t/m	8,0	12	10	2,99	16	3,20	20	4,40
8,1	t/m	10,0	15	12	3,20	20	3,78	25	5,20
10,1	t/m	12,0	18	12	3,78	20	4,31	25	5,55
12,1	t/m	15,0	22	16	4,10	28	5,46	36	7,30
15,25	t/m	18,0	26	16	4,88	28	6,56	36	8,45
18,25	t/m	22,0	30	20	6,62	36	8,93		
22,25	t/m	26,0	35	20	8,35	36	10,61		
26,25	t/m	30,0	42	25	10,03	45	12,29		
30,25	t/m	35,0	48	25	12,92	45			
35,50	t/m	40,0	55	30	17,12	56			

# Guide pillar type G100

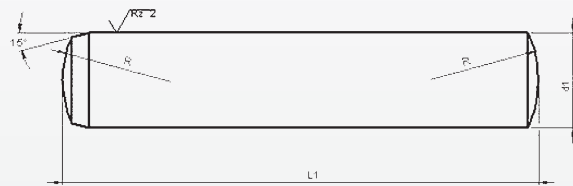
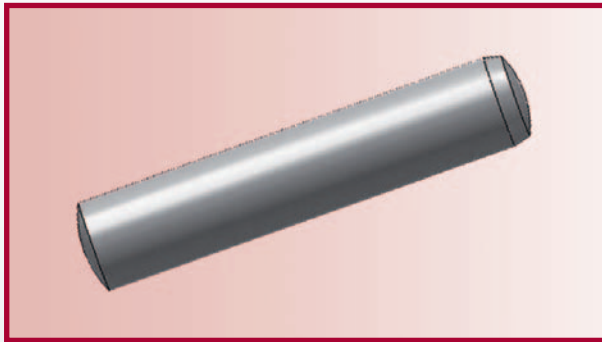


**Material:** 1.7262  
**Hardness:** 60 ±2 HRC

d <sub>1</sub> g6	10	12	14	16	18	20	22	24	26
d <sub>2</sub> -0.2	12	16	18	20	22	24	26	28	30
k	3	6	8	8	8	8	15	15	15
<b>l<sub>1</sub></b>	<b>Příce by piéce in EURÖS</b>								
<b>40</b>	4,25	4,57							
<b>60</b>	4,41	5,04	5,09	5,51	5,83				
<b>80</b>	4,57	5,25	5,36	5,83	6,41	7,30	8,35		
<b>100</b>	5,04	5,67	6,04	6,67	7,30	8,14	9,50	10,61	12,39
<b>120</b>	5,67	6,41	6,67	7,56	8,35	9,56	11,66	12,44	14,70
<b>140</b>		7,04	8,14	8,61	9,50	10,45	12,39	13,76	16,22
<b>160</b>		7,77	9,50	9,98	10,45	11,71	13,76	15,02	17,85
<b>180</b>			10,61	11,29	12,18	13,39	15,12	16,38	19,58
<b>200</b>			11,76	12,76	13,07	15,02	16,59	17,59	21,21
<b>220</b>			13,65	16,75	16,75	16,75	18,69	20,48	27,46
<b>240</b>				19,79	20,11	19,85		22,94	
<b>270</b>								30,03	

# Parallel Pins DIN 6325

Tolerances m6/h6



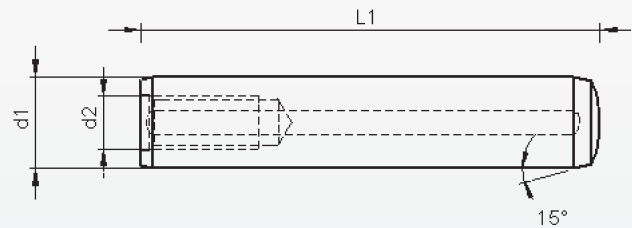
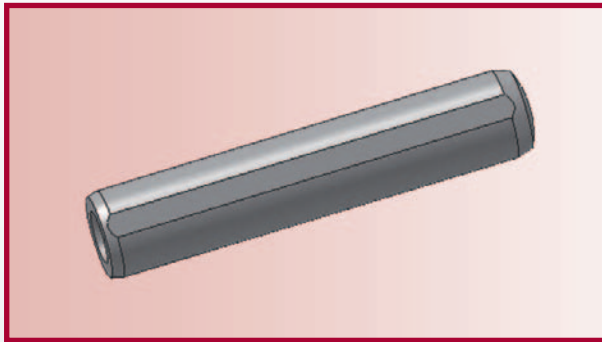
Hardness: 60 ±2 HRC

Price by piece in EUROS												
L	1,5	2	3	4	5	6	8	10	12	14	16	20
4	7,10											
6	7,35	4,20	3,85	5,00	8,25							
8	7,65	4,35	4,20	5,40	8,25	9,45						
10	7,95	4,40	4,40	5,70	8,25	9,60						
12	8,40	4,60	4,70	6,05	8,45	9,95						
14	9,60	4,80	5,00	6,35	8,85	10,10	19,50					
16	9,05	5,10	5,25	6,70	9,20	10,60	19,50					
18		5,40	5,50	7,20	9,60	11,15	20,45	28,70				
20	9,65	5,50	5,70	7,55	9,95	11,75	20,80	31,60	47,20			
24	11,45	6,05	6,15	8,25	10,95	12,90	22,80	34,50	51,10			
28		6,50	8,70	9,45	11,80	14,05	24,75	37,35	55,05			
32			9,95	10,10	12,80	15,35	26,60	41,70	59,10			
36			10,75	10,40	13,80	16,70	28,50	43,05	63,15	83,15		
40			11,55	15,70	15,90	17,65	30,45	45,90	66,90	88,70	113,60	
45				18,40	17,25	19,55	32,90	49,35	71,90	102,35	131,20	168,85
50					18,60	26,20	35,35	53,00	76,85	115,90	148,75	195,85
60					35,35	29,35	42,10	63,50	86,90	129,70	167,50	222,75
70					44,55	46,05	48,60	71,15	97,70	143,20	185,30	249,75
80						59,45	57,75		114,20	160,65	202,90	276,90
90						77,05	65,05		125,10	181,50	231,40	303,85
100						77,05	70,95		129,65	224,90	269,05	330,75
120							91,80		161,55			410,30

**Minimum order quantity:**

- Ø 1,5 t/m Ø5 100 pieces/dimension
- Ø 6 t/m Ø8 50 pieces/dimension
- Ø 10 t/m Ø30 10 pieces/dimension

Tolerances h6 = price m6 + 25 %



**Hardness:** 60 ±2 HRC

d <sub>1</sub> m6	4	5	6	8	10	12	14	16	20
d <sub>2</sub>	m3	m3	m4	m5	m6	m6	m8	m8	m10
l <sub>1</sub>	Price by piece in EUROS								
10	111,85	42,60							
12	111,85	43,50	33,90						
14	111,85	44,40	33,90						
16	112,45	45,25	33,90	50,65	58,20				
18	112,60	46,20	35,70	50,65	63,15				
20	112,60	47,05	35,70	50,65	63,15	92,70			
24	113,10	48,35	37,25	51,80	66,55	92,70			
28	120,75	50,15	39,05	50,65	70,15	92,70			
32	124,35	51,95	40,75	53,15	73,60	97,20	123,00	163,05	
36	125,25	35,50	42,60	55,60	77,25	101,75	123,00	163,05	
40	129,70	55,40	45,15	58,15	80,50	106,35	123,00	163,05	232,55
50	137,60	59,70	51,80	73,05	90,50	118,00	143,85	182,25	232,55
60			58,00	81,20	98,50	129,70	165,35	201,75	232,55
70			76,50	89,30	108,25	141,90	185,10	224,70	263,85
80				98,90	120,90	157,20	204,75	250,05	305,65
90				122,05	126,95	167,25	248,20	289,50	392,50
100				122,05	136,10	167,25	248,20	293,55	443,20
120				147,85	191,25	213,80	289,35	346,70	638,65

**Minimum order quantity:**

Ø 4 t/m Ø 8 50 pieces/dimension  
 Ø 10 t/m Ø 20 25 pieces/dimension