



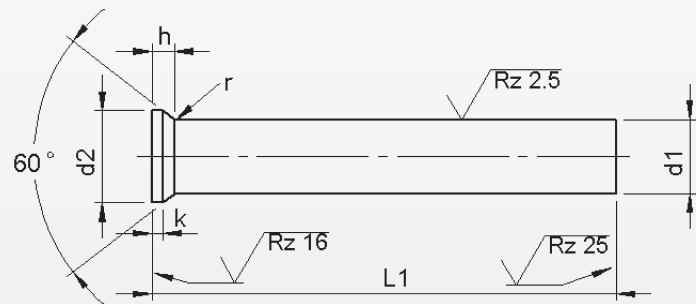
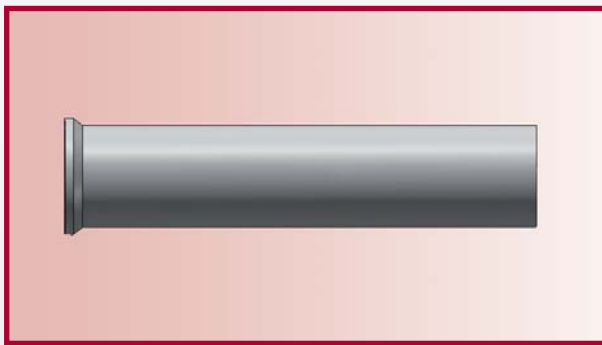
GERIMEX

Price List Production Program



Punches

DIN 9861 HWS



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

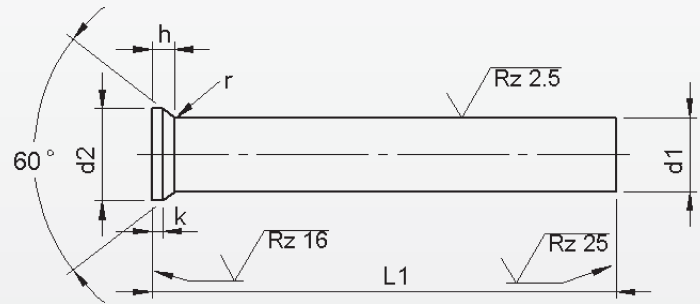
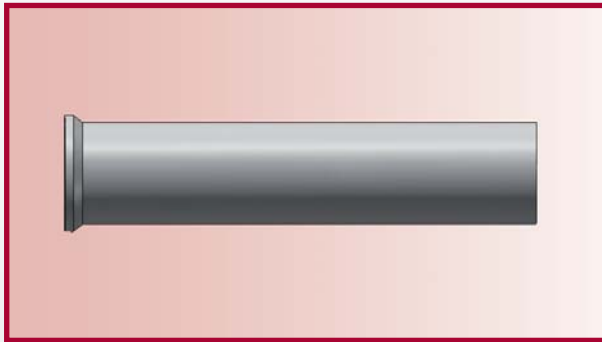
DISCONTINUED

d ₁	d ₂	k	l ₁ ^{+0.5} ₀					
			71	80	90	100	120	150
h6	+0.05 -0.05	+0.2 0	Price by piece in EUROS					
0.5	0.9	0.2	4,37					
0.6	1.1		4,37					
0.7	1.3		4,14					
0.8	1.4	0.4	4,14					
0.9	1.6		4,14					
1.0	1.1	0.5	3,26	3,81	4,31	4,86		
t/m	1.3		3,26	3,81	4,31	4,86		
1.2	1.5		3,26	3,81	4,31	4,86		
t/m	1.7		3,26	3,81	4,31	4,86		
1.4	1.9		3,26	3,81	4,31	4,86		
t/m	2.2		3,04	3,32	3,81	4,26	6,13	
1.6	2.5		3,04	3,32	3,81	4,26	6,13	
t/m	2.8		3,04	3,32	3,81	4,26	6,13	
1.8	3.0		3,04	3,32	3,81	4,26	6,13	
t/m	3.2		3,04	3,32	3,81	4,26	6,13	
2.0	3.5	1.0	3,43	3,70	4,20	4,81	6,80	
t/m	4.0		3,15	3,54	3,92	4,42	6,30	9,39
2.1	4.5		3,43	3,65	4,09	4,81	6,80	10,17
t/m	5.0		3,43	3,65	4,09	4,81	6,80	10,17
2.3	5.5		3,43	3,70	4,37	4,81	6,80	10,22
t/m	6.0		3,43	3,70	4,37	4,81	6,80	10,22
2.6	6.5		3,65	3,98	4,53	5,08	7,24	10,83
t/m	7.0		3,81	4,14	4,81	5,25	7,57	11,33
3.0	8.0		4,26	4,75	5,31	6,02	8,51	12,71
t/m	9.0		5,14	5,64	6,41	7,24	10,22	15,31
3.5	10.0	5,64	6,30	7,07	7,96	11,27	16,91	
t/m	11.0	6,41	7,02	7,96	8,95	12,82	19,23	
4.0	12.0	6,63	7,46	8,46	9,39	13,26	19,89	
t/m	13.0							

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

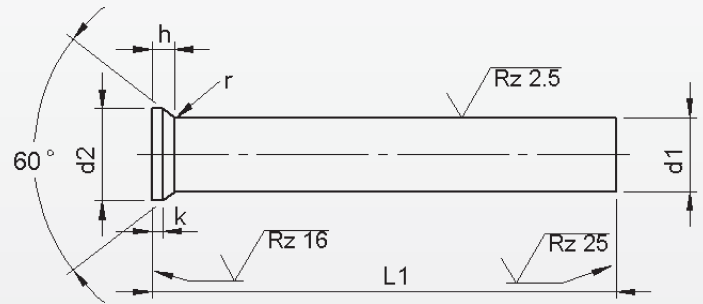
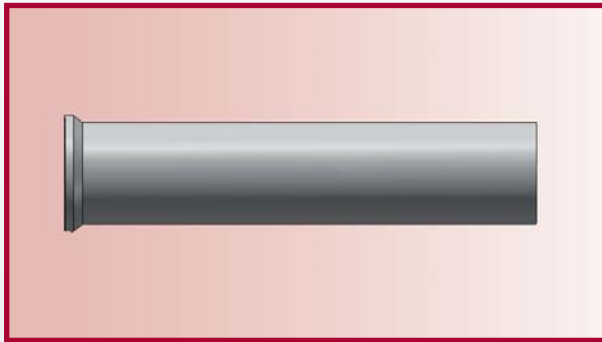
d ₁ h6			d ₂ + 0.05 - 0.05			l ₁ ^{+0.5} ₀					
						71	80	90	100	120	150
									Price by piece in EUROS		
13.5	+	14.0	16.0	1.5	7,74	8,57	9,67	10,89	15,47	23,21	
14.5	+	15.0	17.0		9,28	10,22	11,66	13,04	18,51	27,80	
15.5	+	16.0	18.0		10,33	11,44	12,93	14,48	20,61	30,95	
16.5			19.0		10,72	11,77	13,37	15,03	21,39	32,11	
17.0			19.5		10,72	11,77	13,37	15,03	21,39	32,11	
17.5			20.0		11,49	12,60	15,31	16,14	22,93	34,43	
18.0			20.5	11,49	12,60	15,31	16,14	22,93	34,43		
18.5			21.0	12,27	13,48	15,81	17,19	24,54	36,75		
19.0			21.5	12,27	13,48	15,81	17,19	24,54	36,75		
19.5			22.0	13,04	14,37	16,30	18,24	26,08	39,07		
20.0			22.5	13,04	14,37	16,30	18,24	26,08	39,07		
20.5			23.0	13,82	15,20	17,30	19,34	27,63	41,34		
21.0			23.5	13,82	15,20	17,30	19,34	27,63	41,34		
21.5			24.0	14,59	16,08	18,24	20,39	29,18	43,77		
22.0			24.5	14,59	16,08	18,24	20,39	29,18	43,77		
22.5			25.0	15,36	16,86	19,23	21,55	30,73	46,09		
23.0			25.5	15,36	16,86	19,23	21,55	30,73	46,09		
23.5			26.0	16,14	17,74	20,17	22,60	32,27	48,41		
24.0			26.5	16,14	17,74	20,17	22,60	32,27	48,41		
24.5			27.0	16,91	18,62	21,17	23,71	33,82	50,73		
25.0			27.5	16,91	18,62	21,17	23,71	33,82	50,73		

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



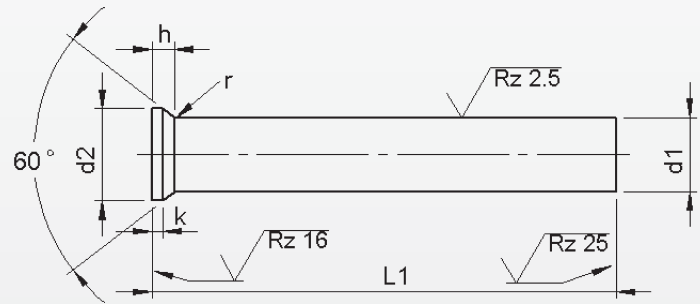
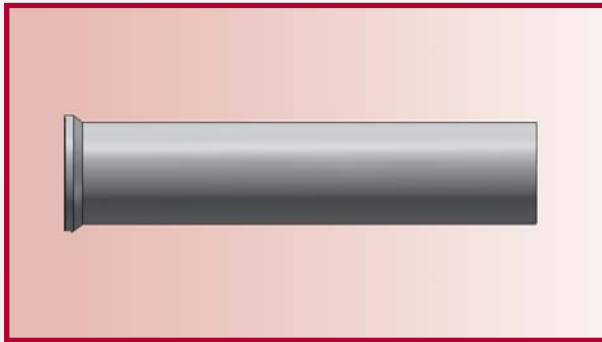
Material: HSS (1.3343)
Hardness: Shaft: 64 ±2 HRC
 Head: 50 ±5 HRC

d ₁	d ₂	k	I ₁ ^{+0.5} ₀						
			71	80	90	100	120	150	
h6	+0.05 -0.05	+0.2 0	Price by piece in EUROS						
0.5	0.9	0.2	5,15						
0.6	1.1	0.2	5,15						
0.7	1.3	0.2	4,88						
0.8	1.4	0.4	4,88						
0.9	1.6	0.4	4,88						
1.0	1.8	0.5	3,99	4,49	4,99	5,60			
1.2	2.0		3,99	4,49	4,99	4,49			
1.4	2.2		3,99	4,49	4,99	4,49			
1.6	2.5		3,99	4,49	4,99	4,49			
1.8	2.8		3,99	4,49	4,99	4,49			
2.0	3.0		3,66	3,99	4,60	5,04	7,26		
2.1	3.2		3,66	3,99	4,60	5,04	7,26		
2.3	3.5		3,66	3,99	4,60	5,04	7,26		
2.6	4.0		3,66	3,99	4,60	5,04	7,26		
3.0	4.5		3,66	3,99	4,60	5,04	7,26		
3.5	5.0	3,99	4,49	4,99	5,60	7,98			
4.0	5.5	3,66	3,99	4,60	5,04	7,26			
4.5	6.0	3,99	4,49	4,99	5,60	7,98	11,91		
5.0	6.5	4,21	4,65	5,15	5,87	8,31	12,47		
5.5	7.0	4,16	4,65	5,15	5,87	8,31	12,47		
6.0	8.0	4,16	4,65	5,15	5,87	8,31	12,47		
6.5	9.0	4,60	4,93	5,65	6,32	9,14	13,68		
7.5	10.0	4,71	5,10	5,93	6,54	9,36	14,02		
8.5	11.0	5,15	5,71	6,37	7,20	10,25	15,35		
9.5	12.0	6,09	6,76	7,59	8,53	12,13	18,17		
10.5	13.0	6,81	7,42	8,42	9,53	13,57	20,33		
11.5	14.0	7,42	8,20	9,25	10,42	14,79	22,16		
12.5	15.0	9,09	9,92	11,30	12,63	18,12	27,20		

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

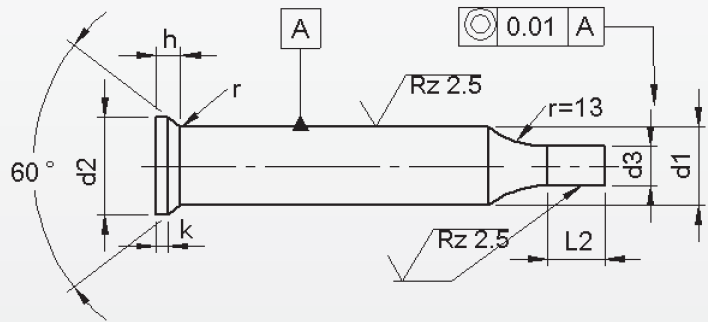
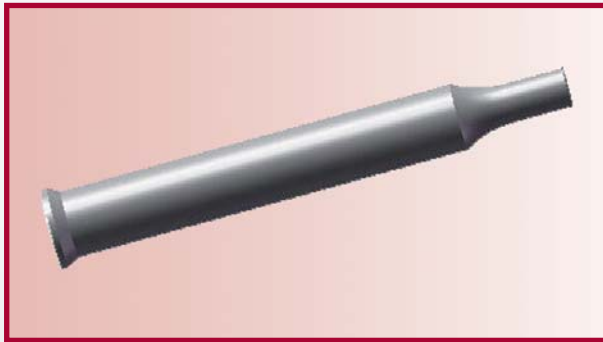
d ₁ h6	+	d ₂ +0.05 -0.05	k +0.2 0	I ₁ ^{+0.5} ₀					
				71	80	90	100	120	150
				Price by piece in EUROS					
13.5	+	14.0	1.5	10,42	11,36	12,96	14,46	20,78	31,19
14.5	+	15.0		11,14	12,24	13,91	15,57	22,27	33,35
15.5	+	16.0		12,47	13,68	15,57	17,45	24,93	37,40
16.5		19.0	2.0	12,80	14,07	16,01	17,89	25,60	38,39
17.0		19.5		12,80	14,07	16,01	17,89	25,60	38,39
17.5		20.0		13,63	15,01	17,06	19,11	27,26	40,89
18.0		20.5		13,63	15,01	17,06	19,11	27,26	40,89
18.5		21.0		14,46	15,90	18,06	20,22	28,92	32,24
19.0		21.5		14,46	15,90	18,06	20,22	28,92	32,24
19.5		22.0		15,29	16,84	19,11	21,44	30,58	47,53
20.0		22.5		15,29	16,84	19,11	21,44	30,58	47,53
20.5		23.0		16,12	17,73	20,11	22,55	32,13	48,20
21.0		23.5		16,51	17,73	20,11	22,55	32,13	49,53
21.5		24.0		16,95	18,61	21,16	23,71	33,91	50,86
22.0		24.5		16,95	18,61	21,16	23,71	33,91	50,86
22.5		25.0		17,78	19,06	22,22	24,88	23,38	53,35
23.0		25.5		17,78	19,06	22,22	24,88	35,57	53,35
23.5		26.0		18,61	20,44	23,21	26,04	37,23	55,84
24.0		26.5	18,61	20,44	23,21	26,04	37,23	55,84	
24.5		27.0	19,45	21,39	24,27	27,20	38,89	58,34	
25.0		27.5	19,45	21,39	24,27	27,20	38,89	58,34	

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

Extra charges and discounts:

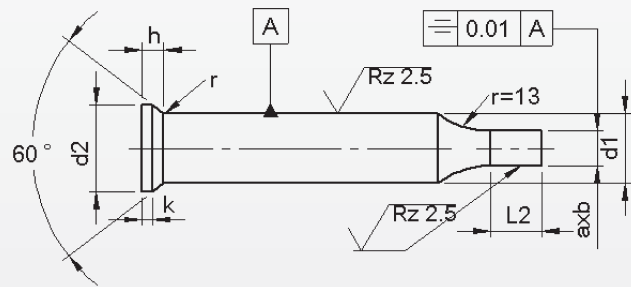
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

Reduced shaft 'Round' DIN 9861



d ₁	d ₃		l ₂ ^{+0.5} ₀				Price by piece in EUROS/punche not include
			7	10	13	17	
≥	≥	^{h6} -	≤				
1.5	0.5	-	1.4	•			2,77
2	0.5	-	1,9	•			2,77
3	1.6	-	2,9	•			2,77
4	1.6	-	3,9		•		2,77
5	2.5	-	4,9		•		3,05
6	3	-	5,9		•		3,54
8	4	-	7,9			•	4,15
10	5	-	9,9				4,92
13	9	-	12,9				5,64
16	12	-	15,9				7,68
20	16	-	19,9				10,66
25	20	-	24,9				13,76
32	25	-	31,9				17,36
38	30	-	37,9				18,84

Reduced shaft 'Form' DIN 9861

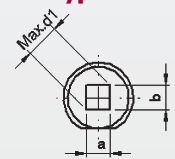
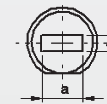
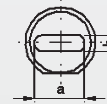
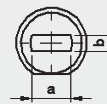


Type ..F

Type ..O

Type ..R

Type ..S



d ₁	axb ± 0.01		l ₂ ^{+0.5} ₀					
			Price by piece in EUROS					
			10	13	17	Locking flat		
≥	≥	≤						
5	2,5	-	4,9	•			17,41	4,37
6	3,0	-	5,9	•			17,41	4,37
8	4,0	-	7,9		•		23,21	5,80
10	5,0	-	9,9			•	23,21	5,80
13	9,0	-	12,9			•	23,21	5,80
16	12,0	-	15,9			•	23,21	5,80
20	16,0	-	19,9			•	34,82	8,73
25	20,0	-	24,9			•	40,62	10,17
32	27,0	-	31,9			•	46,48	11,61
38	33,0	-	37,9			•	46,48	11,61

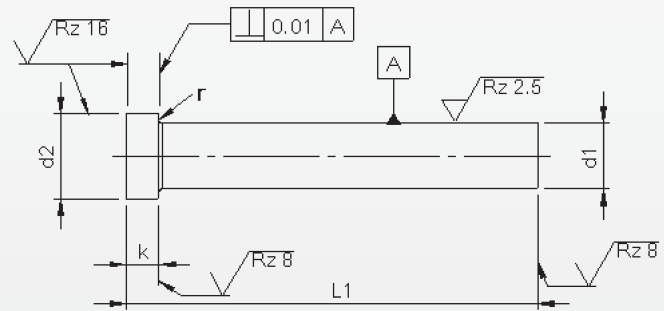
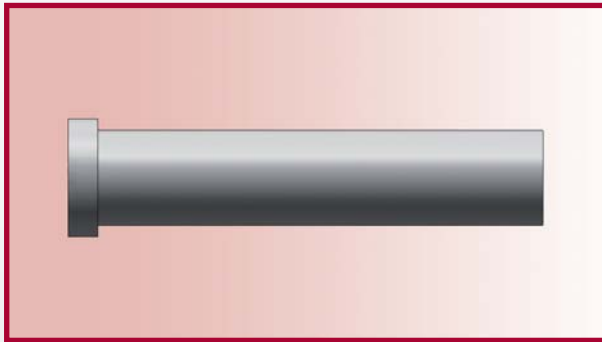
L₂ max is 7 times size b, however never longer than 40 mm.

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 ₁	Typ K	Typ K	ISO 8020	ISO 8020	r	l ₁ ^{+0.5} / _{+0.2}				
						63/71	80	90	100	120
m5	d ₂ 0 -0.15	k +0.2 +0.1	d ₂ 0 -0.15	k +0.1 0		Price by piece in EUROS				
3	5	3	5	3	0.2	6,36	6,96	7,96	0,00	0,00
4	6	3	6	3		6,36	6,96	7,96	8,90	0,00
5	8	5	8	5	0.3	6,36	7,02	7,74	8,46	10,17
6	9	5	9	5		7,29	8,07	8,84	9,73	11,66
8	11	5	11	5		8,62	9,51	10,44	11,49	13,82
10	13	5	13	5		10,11	11,11	12,21	13,43	16,14
13	16	5	16	5	0.4	12,77	14,04	15,42	16,97	20,34
16	19	6	19	5		15,69	17,24	19,01	20,89	25,09
20	24	6	23	5		19,07	20,94	23,04	25,31	30,45
25	29	10	28	5		23,65	26,03	28,63	31,50	37,86
32	36	12	35	5		31,33	34,48	37,91	41,72	50,12
38	45	15	41	5		38,63	42,50	46,75	51,39	61,84

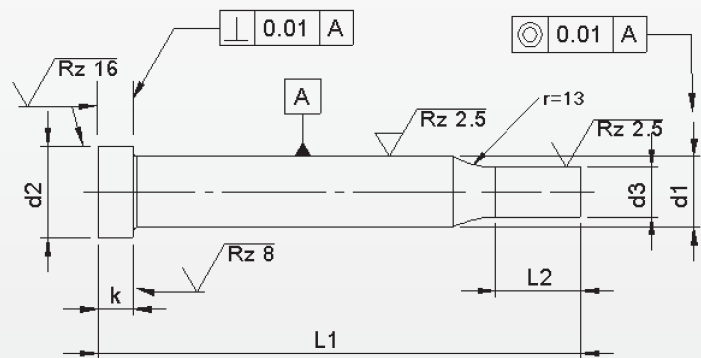
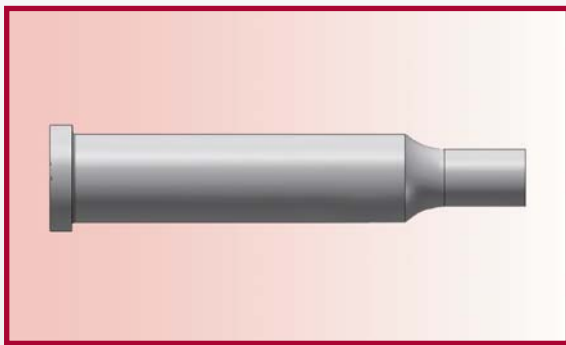
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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_1	d_3		l_2	$l_1 \begin{smallmatrix} +0.5 \\ +0.2 \end{smallmatrix}$					
				63/71	80	90	100	120	
m5	\geq	j6	\leq	Price by piece in EUROS					
3	1.6	–	2.9	7	9,12	9,73	10,72	0,00	0,00
4	1.6	–	3.9	10	9,12	9,73	10,72	11,66	0,00
5	2.5	–	4.9	10	9,39	10,06	10,78	11,49	13,21
6	3.0	–	5.9	10	10,83	11,61	12,38	13,26	15,20
8	4.0	–	7.9	13	12,77	13,65	14,59	15,64	17,96
10	5.0	–	9.9	17	15,03	16,03	17,13	18,35	21,06
13	9.0	–	12.9	17	18,29	19,67	21,06	22,60	25,97
16	12.0	–	15.9	17	23,38	24,92	26,64	28,57	32,72
20	16.0	–	19.9	17	29,68	31,61	33,71	35,98	41,12
25	20.0	–	24.9	17	37,41	39,79	42,39	45,26	51,62
32	27.0	–	31.9	17	48,69	51,84	55,26	59,08	67,48
38	33.0	–	37.9	17	57,47	61,34	65,60	70,24	97,15

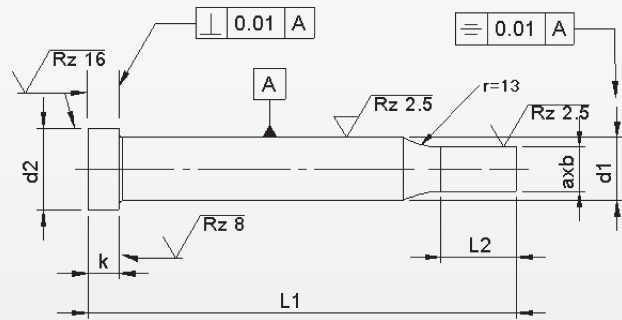
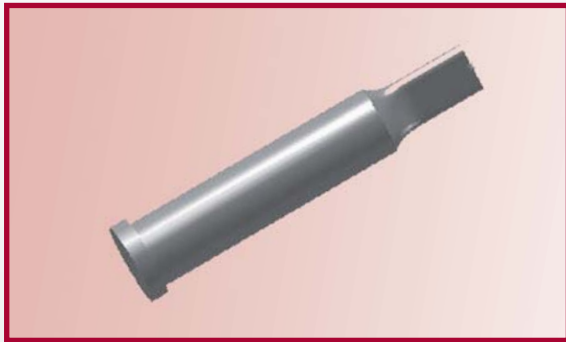
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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'

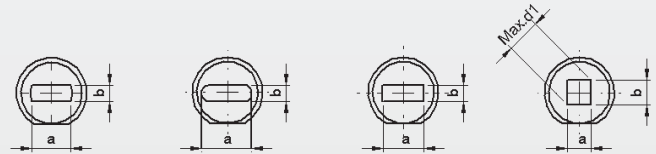


type KF

type KO

type KR

type KS



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

d ₁	axb		l ₂	l ₁ ^{+0.5} / _{+0.2}					Locking flat
	≥	≤		63/71	80	90	100	120	
m5			^{+0.5} / _{+0.0}	Price by piece in EUROS					
3	1.6	- 2.9	7	23,76	24,43	25,09	25,86		4,32
4	1.6	- 3.9	10	23,76	24,43	25,09	25,86		
5	2.5	- 4.9	10	23,76	24,43	25,09	25,86	27,58	
6	3.0	- 5.9	10	24,70	25,48	26,25	27,13	29,07	5,80
8	4.0	- 7.9	13	31,83	32,72	33,66	34,71	37,03	
10	5.0	- 9.9	17	33,32	34,32	35,42	36,64	39,35	
13	9.0	- 12.9	17	35,98	37,25	38,63	40,18	43,55	8,74
16	12.0	- 15.9	17	38,91	40,45	42,22	44,10	48,30	
20	16.0	- 19.9	17	53,88	55,76	57,86	60,13	65,27	
25	20.0	- 24.9	17	64,27	66,65	69,24	72,12	78,47	10,17
32	27.0	- 31.9	17	77,76	80,91	84,33	88,14	94,33	11,61
38	33.0	- 37.9	17	85,05	88,92	93,17	97,82	108,32	

Punches with key-flat against surcharge.

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

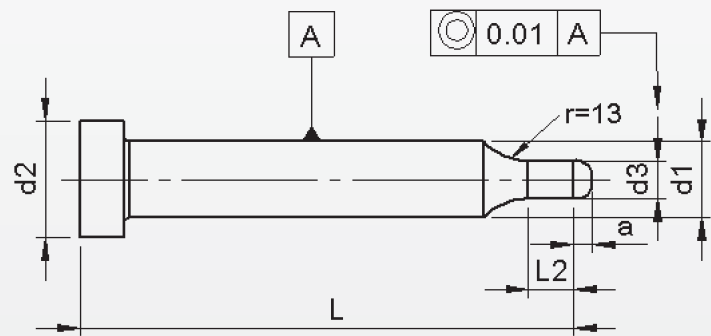
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

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 ₁	d ₃		a	l ₂	L					
					63/71	80	90	100	120	
m5	≥	$\begin{matrix} +0.01 \\ 0 \end{matrix}$	≤		Price by piece in EUROS					
5	0.8	–	2.0	3.0	10	12,43	13,10	13,82	14,53	16,25
6	2.1	–	4.5	4.5	10	14,37	15,14	15,92	16,80	18,73
8	4.6	–	7.5	6.5	13	16,91	17,79	18,73	19,78	22,11
10	7.6	–	10.0	8.0	17	19,95	20,94	22,05	23,27	25,97
13	10.1	–	13.0	9.5	17	23,93	25,31	26,69	28,24	31,61
16	13.1	–	16.0	11.5	17	31,06	32,61	34,32	36,25	40,40
20	16.1	–	20.0	13.5	17	40,34	42,28	44,38	46,64	51,78
25	20.1	–	25.0	13.5	17	51,17	54,21	56,15	59,02	65,38

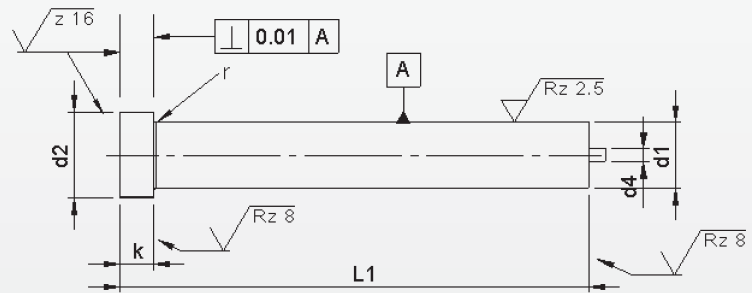
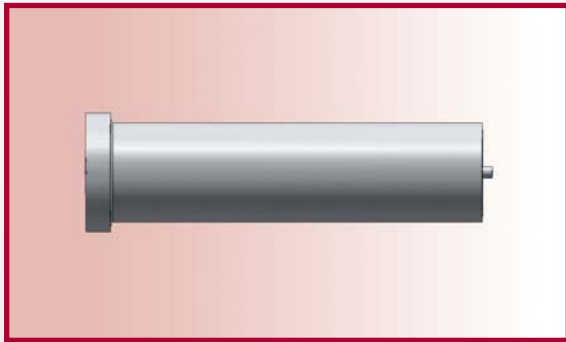
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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 ₁ m5	d ₂ 0 -0.15	d ₄	k +0.2 +0.1	r +0.1 0	l ₁ ^{+0.5} _{+0.2}				
					63/71	80	90	100	120
Price by piece in EUROS									
5	8	1	5	0.3	17,96	19,78	21,77	23,93	
6	9		5		17,74	19,56	21,50	23,65	
8	11	1,5	5		17,91	19,73	21,66	23,87	28,63
10	13		5		19,40	21,33	23,43	25,81	30,95
13	16		5		22,05	24,21	26,64	29,29	35,15
16	19	2,3	5	0.5	24,98	27,47	30,23	33,27	39,90
20	23		5		28,35	31,17	34,26	37,69	45,26
25	28		5		32,94	36,25	39,84	43,82	52,61
32	35		5		41,67	44,93	48,58	56,48	59,46
38	41	3	5		48,02	52,11	56,15	60,84	71,12

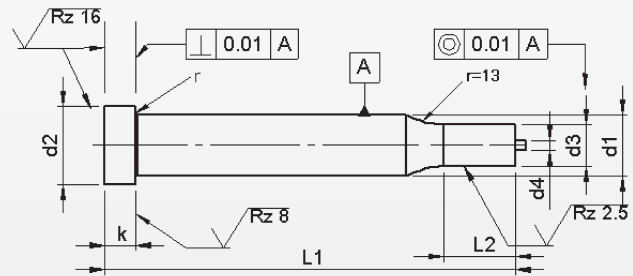
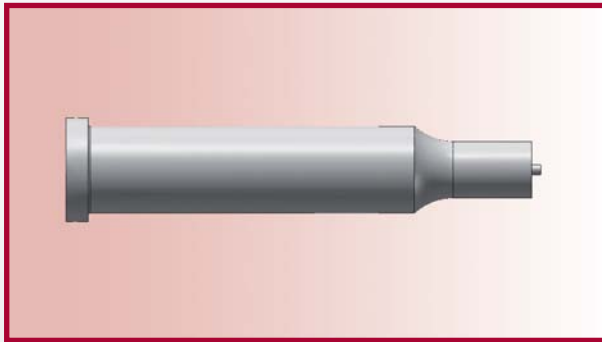
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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 ₁ m5	d ₃ j6		l ₂ +0.5 +0.0	l ₁ +0.5 +0.2				
	≥	≤		63/71	80	90	100	120
				Price by piece in EUROS				
5	2.5	4.9	10	20,73	22,82	24,81	26,97	
6	3.0	5.9	10	21,34	23,11	25,03	27,19	
8	4.0	7.9	13	22,05	23,87	25,81	28,02	32,77
10	5.0	9.9	17	24,32	26,25	28,35	30,73	35,86
13	9.0	12.9	17	27,68	29,84	32,27	34,93	40,79
16	12.0	15.9	17	32,66	35,15	37,92	40,95	47,58
20	16.0	19.9	17	39,02	41,83	44,93	48,36	55,93
25	20.0	24.9	17	46,69	50,01	53,61	57,02	66,37
32	24.0	31.9	17	58,14	61,23	64,72	68,47	76,87
38	28.0	37.9	17	66,93	71,01	75,05	79,75	90,19

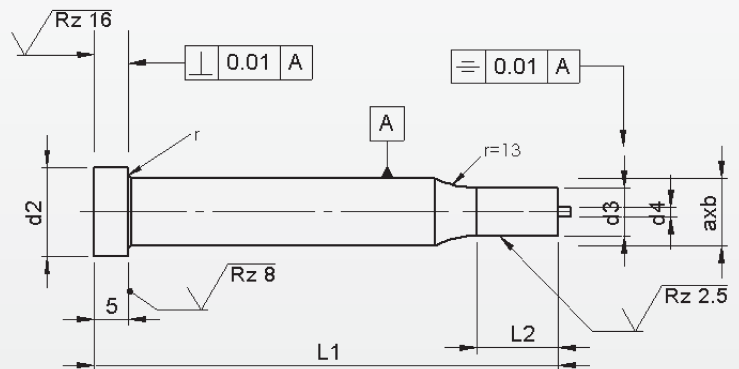
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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'

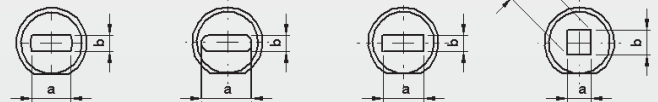


Type EKF

Type EKO

Type EKR

Type EKS



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

d ₁	a	axb	b	l ₂	l ₁ ^{+0.5} / _{+0.2}					
					63/71	80	90	100	120	Locking flat
m5	≥		≤	^{+0.5} / ₀	Price by piece in EUROS					
5	2.5		4.9	10	35,37	37,19	39,18	41,34	0,00	4,37
6	3.0		5.9	10	35,15	36,97	38,91	41,06	0,00	
8	4.0		7.9	13	41,12	42,94	44,87	47,08	51,84	5,80
10	5.0		9.9	17	42,61	44,54	46,64	49,02	54,16	
13	9.0		12.9	17	45,26	47,42	49,85	52,50	58,36	
16	12.0		15.9	17	48,19	50,68	53,44	56,48	63,11	8,74
20	16.0		19.9	17	63,17	65,98	69,08	72,51	80,08	
25	20.0		24.9	17	73,56	76,87	80,52	84,50	93,23	10,17
32	24.0		31.9	17	88,14	91,35	95,00	102,90	105,88	11,61
38	28.0		37.9	17	94,50	98,53	102,57	107,38	117,54	

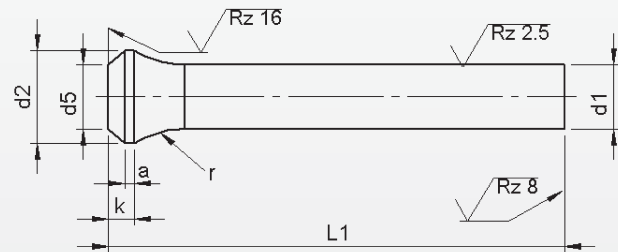
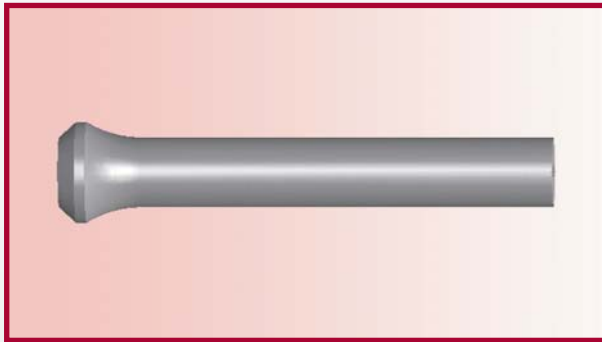
Punches with key-flat against surcharge.

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%

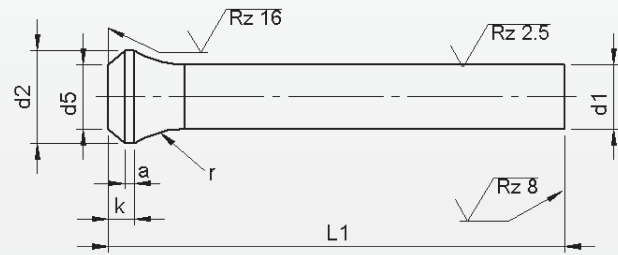
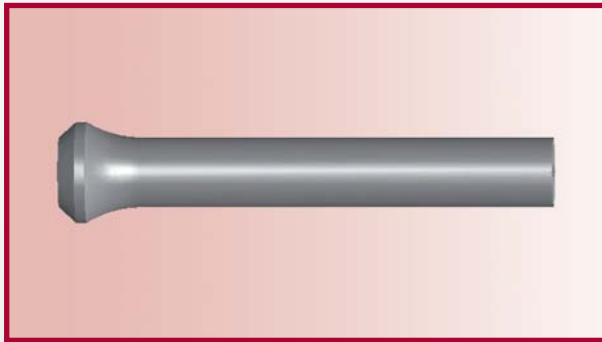


Material: HSS (1.3343)
Hardness: Shaft: 64 ±2 HRC
 Head: 50 ±5 HRC

d ₁	d ₂	k	a	d ₅	r	L ₁ ^{+0.5} ₀				
						71	80	90	100	120
^{h6}	⁰ _{-0.2}	^{+0.2} ₀			⁰ _{-0.2}	Price by piece in EUROS				
5,0	7,0	4,0	1,5		10,0	6,36	7,02	7,74	8,46	10,17
5,5	8,0					6,80	7,52	8,29	9,06	10,89
6,0	9,0					7,29	8,07	8,84	9,73	11,66
6,5	10,0					7,63	8,40	9,23	10,17	12,16
7,0	10,0					7,96	8,73	9,62	10,61	12,71
7,5	11,0					8,29	9,06	10,00	11,05	13,26
8,0	11,0				8,62	9,51	10,44	11,49	13,82	
8,5	13,0				9,01	9,89	10,89	11,99	14,37	
9,0	13,0				9,39	10,28	11,33	12,32	14,92	
9,5	14,0				9,78	10,67	11,77	12,82	15,47	
10,0	14,0				10,11	11,11	12,21	13,43	16,14	
10,5	15,0				10,56	11,66	12,77	14,01	16,83	
11,0	15,0				11,00	12,21	13,32	14,60	17,53	
11,5	16,0				11,44	12,77	13,87	15,19	18,23	
12,0	16,0				11,77	13,32	14,42	15,77	18,92	
12,5	17,0				12,27	13,32	14,98	16,36	19,62	
13,0	17,0				12,77	14,04	15,42	16,97	20,34	
13,5	18,0				13,26	14,57	15,97	17,63	21,11	
14,0	18,0	13,76	15,10	16,52	18,29	21,88				
14,5	19,0	14,26	15,63	17,08	18,96	22,66				

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 ₁	d ₂	k	a	d ₅	r	I ₁ ^{+0.5} ₀				
						71	80	90	100	120
h6	⁰ _{-0.2}	^{+0.2} ₀			⁰ _{-0.2}	Price by piece in EUROS				
15,0	19,0	4,0	1,5	d1 ± 0,1	15,0	14,76	16,16	17,85	19,62	23,43
15,5	20,0					15,25	16,69	18,40	20,28	24,32
16,0	20,0					15,69	17,24	19,01	20,89	25,09
16,5	21,0					16,11	17,70	19,51	21,44	25,75
17,0	21,0					16,53	18,23	20,01	21,99	26,42
17,5	22,0					16,95	18,76	20,50	22,55	27,08
18,0	22,0					17,37	19,29	21,00	23,10	26,64
18,5	23,0					17,79	19,82	21,50	23,65	27,30
19,0	23,0					18,21	20,35	21,99	24,21	27,96
19,5	25,0					18,74	20,87	22,49	24,76	28,63
20,0	25					19,06	20,95	23,04	25,32	30,45
20,0	25,0					23,65	26,03	28,63	31,51	37,85

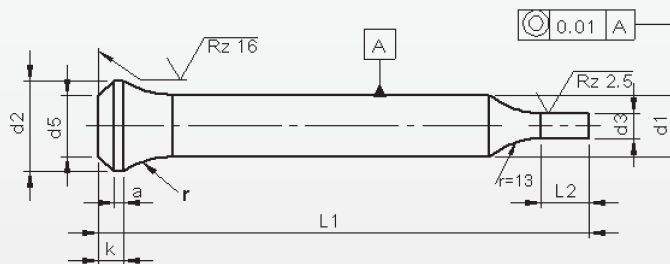
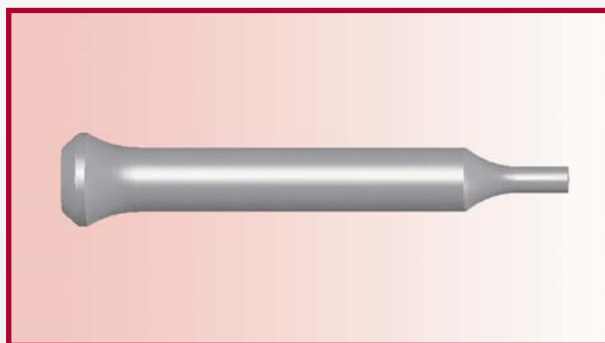
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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

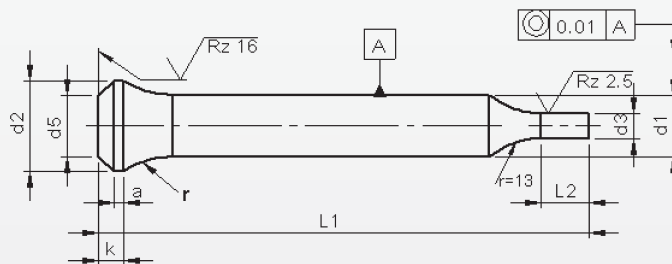
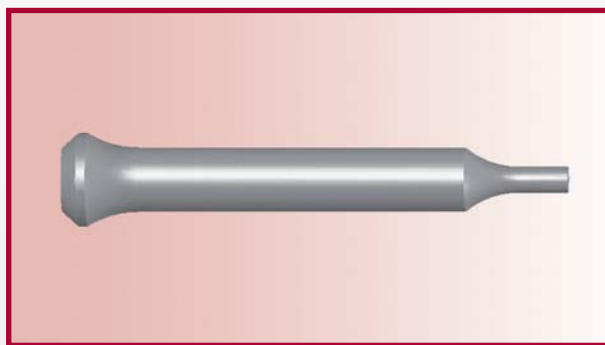
d ₁	d ₃		l ₂	l ₁ ^{+0.5} / ₀				
	≥	≤		71	80	90	100	120
h6	h6		+0.5 +0.0	Price by piece in EUROS				
5,0	2,5	4,9	10	9,40	10,06	10,78	11,50	13,21
5,5	2,5	4,4		10,33	11,05	11,83	12,60	14,42
6,0	3,0	5,9		10,83	11,61	12,38	13,26	15,20
6,5	3,0	6,4		11,77	12,55	13,38	14,32	16,31
7,0	3,5	6,9		12,11	12,88	13,76	14,76	16,86
7,5	3,0	7,4		12,44	13,21	14,15	15,20	17,41
8,0	3,5	7,9	13	12,77	13,65	14,59	15,64	17,96
8,5	4,0	8,4		13,92	14,81	15,80	16,91	19,28
9,0	4,0	8,9		14,31	15,19	16,24	17,24	19,84
9,5	4,5	9,4		14,70	15,58	16,69	17,74	20,39
10,0	5,0	9,9	17	15,03	16,02	17,13	18,34	21,05
10,5	5,5	10,4		16,20	17,30	18,41	19,66	22,48
11,0	5,5	10,9		16,64	17,86	18,96	20,24	23,17
11,5	6,0	11,4		17,08	18,41	19,51	20,83	23,87
12,0	6,0	11,9		17,41	18,96	20,07	21,41	24,56
12,5	7,0	12,4		17,91	18,96	20,62	22,00	25,26
13,0	9,0	12,9		18,41	19,68	21,06	22,61	25,98
13,5	9,0	13,4		20,95	22,25	23,66	25,31	28,79
14,0	9,5	13,9		21,44	22,78	24,21	25,98	29,57
14,5	9,5	14,4		21,94	23,31	24,76	26,64	30,34

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 ₁ h6	d ₃ h6		l ₂ +0.5 +0.0	l ₁ ^{+0.5} ₀								
	≥	≤		71	80	90	100	120				
								Price by piece in EUROS				
15,0	10,0	– 14,9	17	22,44	23,84	25,53	27,30	31,12				
15.5	10,5	– 15,4		22,94	24,37	26,09	27,97	32,00				
16,0	12,0	– 15,9		23,38	24,93	26,69	28,57	32,77				
16.5	12,5	– 16,4		26,78	28,36	30,17	32,11	36,42				
17,0	13,0	– 16,9		27,20	28,89	30,67	32,66	37,08				
17.5	13,0	– 17,4		27,62	29,42	31,17	33,21	37,74				
18,0	13,5	– 17,9		28,04	29,95	31,66	33,76	37,30				
18.5	13,5	– 18,4		28,46	30,48	32,16	34,32	37,96				
19,0	14,0	– 18,9		28,88	31,01	32,66	34,87	38,63				
19.5	15,0	– 19,4		29,79	31,54	33,16	35,42	39,29				
20,0	16,0	– 19,9		29,73	31,61	33,71	35,97	41,11				
25,0	18,0	– 24,9		37,41	39,79	42,39	45,26	48,52				

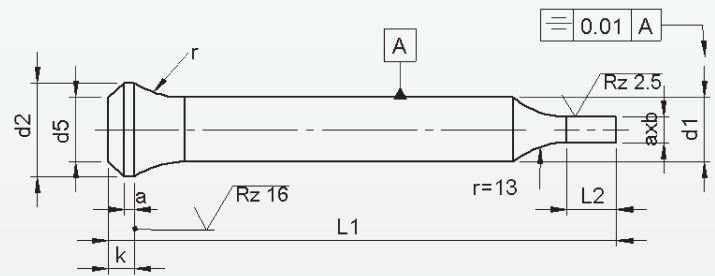
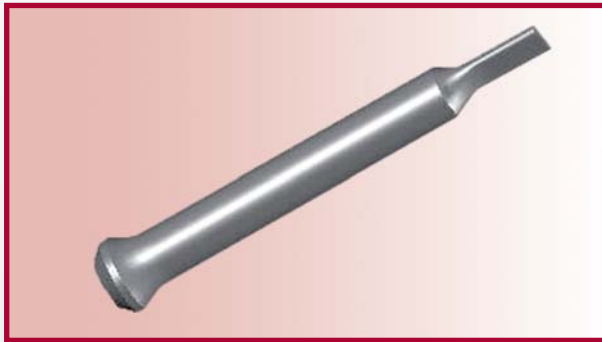
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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'

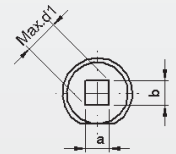
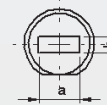
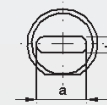
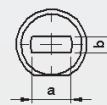


type PF

type PO

type PR

type PS



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

d ₁ h6	axb		l ₂ +0.5 +0.0	l ₁ ^{+0.5} ₀					Locking flat
	b ≥	a ≤		71	80	90	100	120	
	± 0.01			Price by piece in EUROS					
5	2,5	4,9	10	23,77	24,43	25,15	25,87	27,58	4,37
5.5	2,5	4,4		24,21	24,93	25,70	26,47	28,30	
6	3,0	5,9		24,71	25,48	26,25	27,14	29,07	
6.5	3,0	6,4		30,84	31,61	32,44	33,38	35,37	
7	3,5	6,9		31,17	31,94	32,83	33,82	35,92	
7.5	3,0	7,4	13	31,50	32,27	33,21	34,26	36,47	5,80
8	3,5	7,9		31,83	32,72	33,66	34,71	37,03	
8.5	4,0	8,4		32,22	33,10	34,10	35,20	37,58	
9	4,0	8,9		32,61	33,49	34,54	35,53	38,13	
9.5	4,5	9,4		32,99	33,88	34,98	36,03	38,68	
10	5,0	9,9	17	33,32	34,32	35,42	36,64	39,35	
10.5	5,5	10,4		33,77	34,87	35,98	37,23	40,04	
11	5,5	10,9		34,21	35,42	36,53	37,81	40,74	
11.5	6,0	11,4		34,65	35,98	37,08	38,40	41,44	
12	6,0	11,9		34,98	36,53	37,63	38,98	42,13	
12.5	7,0	12,4		35,48	36,53	38,19	39,57	42,83	
13	9,0	12,9		35,98	37,25	38,63	40,18	43,55	
13.5	9,0	13,4		36,47	37,78	39,18	40,84	44,32	
14	9,5	13,9		36,97	38,31	39,73	41,50	45,09	
14.5	9,5	14,4		37,47	38,84	40,29	42,17	45,87	

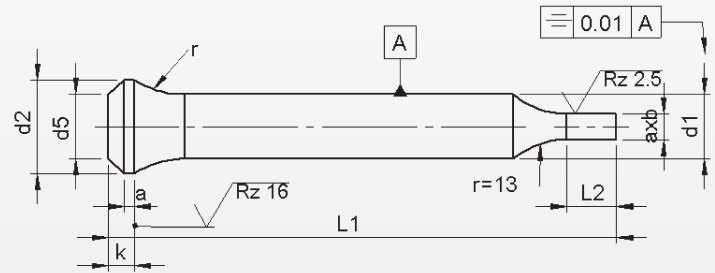
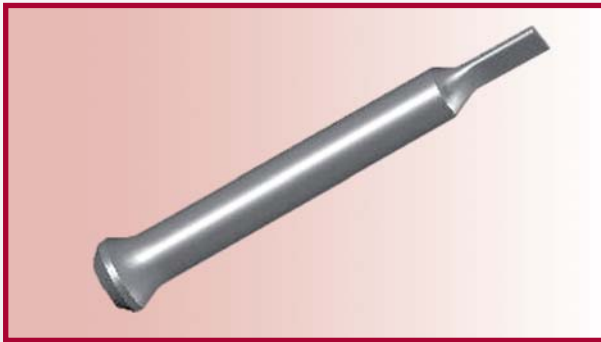
Punches with key-flat against surcharge.

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'



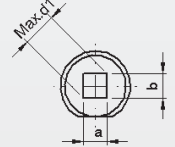
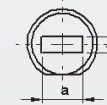
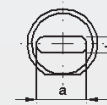
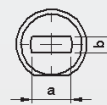
Material: HSS (1.3343)
Hardness: Shaft: 64 ±2 HRC
 Head: 50 ±5 HRC

type PF

type PO

type PR

type PS



d ₁ h6	axb		l ₂ +0.5 +0.0	l ₁ ^{+0.5} / ₀					Locking flat
	b ±0.01 ≥	a ≤		71	80	90	100	120	
Price by piece in EUROS									
15	10,0	–	14,9	37,97	39,37	41,06	42,83	46,64	5,80
15.5	10,5	–	15,4	38,46	39,90	41,61	43,49	47,53	
16	12,0	–	15,9	38,91	40,45	42,22	44,10	48,30	
16.5	12,5	–	16,4	50,94	52,52	54,33	56,26	60,57	8,74
17	13,0	–	16,9	51,36	53,05	54,83	56,82	61,24	
17.5	13,0	–	17,4	51,78	53,58	55,32	57,37	61,90	
18	13,5	–	17,9	52,20	54,11	55,82	57,92	61,46	
18.5	13,5	–	18,4	52,62	54,64	56,32	58,47	62,12	
19	14,0	–	18,9	53,04	55,17	56,82	59,03	62,78	
19.5	15,0	–	19,4	53,56	55,70	57,31	59,58	63,45	
20	16,0	–	19,9	53,89	55,77	57,87	60,13	65,27	10,17
25	18,0	–	24,9	64,27	66,65	69,25	72,13	78,47	

Punches with key-flat against surcharge.

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

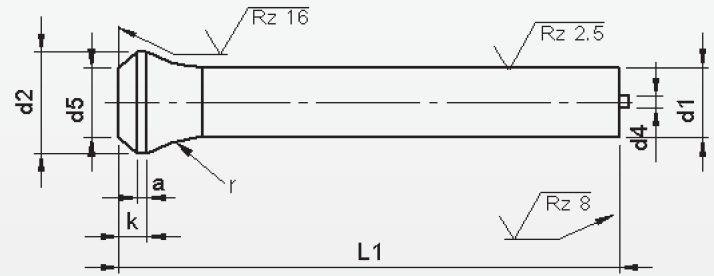
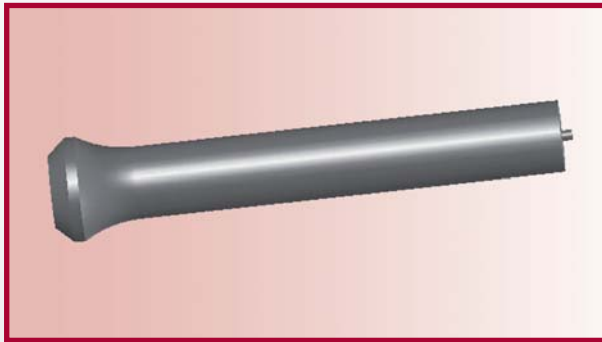
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request. See page 2 for extra charges and discount.

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 ₁	k	a	d ₅	r	d ₄	l ₁				
						71	80	90	100	120
h6	$\begin{matrix} 0 \\ -0.2 \end{matrix}$	$\begin{matrix} +0.2 \\ 0 \end{matrix}$				Price by piece in EUROS				
5	4	1,5	d1±0,1	10	1	21,12	23,29	25,59	28,16	
6						21,38	23,55	25,92	28,49	
8				12	1,5	21,32	23,49	25,79	28,42	34,08
10						23,09	25,39	27,89	30,72	36,84
13				15	2,3	26,25	28,82	31,71	34,87	41,84
16						29,74	32,70	35,99	39,61	47,50
20						33,75	37,11	40,79	44,87	53,88
25						39,00	42,57	46,16	50,14	61,03

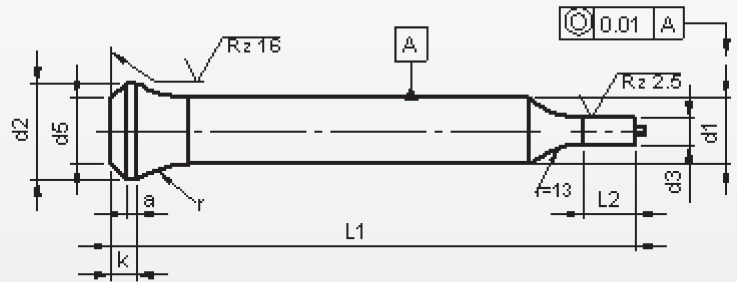
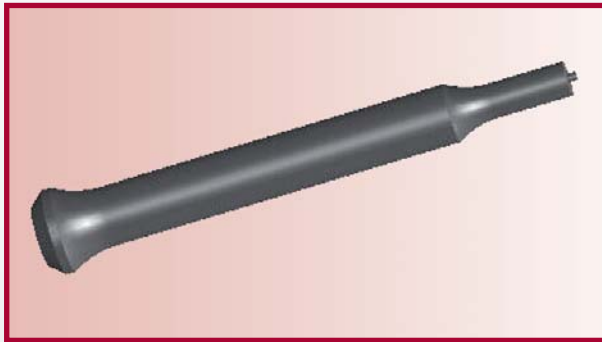
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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 ₁	d ₃		l ₂ +0.5 0	l ₁				
	≥	h6 – ≤		71	80	90	100	120
Price by piece in EUROS								
5	3,0	– 4,9	10	25,31	27,52	29,99	32,67	
6	3,0	– 5,9		25,48	27,75	30,17	32,80	
8	3,5	– 7,9	13	26,31	28,57	30,99	33,73	39,57
10	5,0	– 9,9	17	28,92	31,34	33,92	36,86	43,23
13	9,0	– 12,9		31,89	37,54	37,36	40,52	47,48
16	12,0	– 15,9		38,63	41,68	45,11	48,89	57,11
20	16,0	– 19,9		45,77	49,24	53,08	57,35	66,72
25	18	– 24,9		52,76	56,33	59,92	63,89	74,79

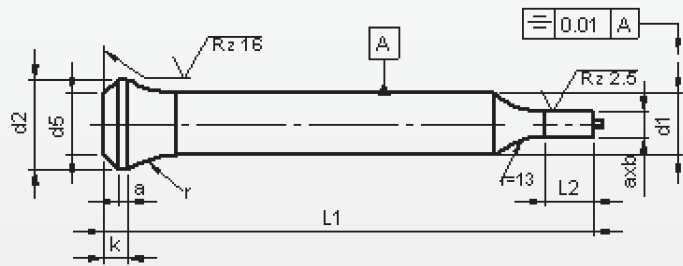
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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%

Punches with bottle neck type EP..

With ejector with reduced shaft 'Form'

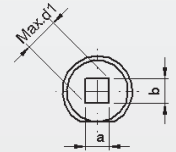
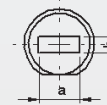
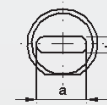
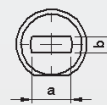


type EPF

type EPO

type EPR

type EPS

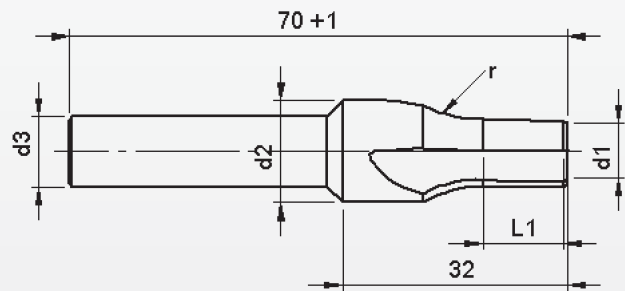
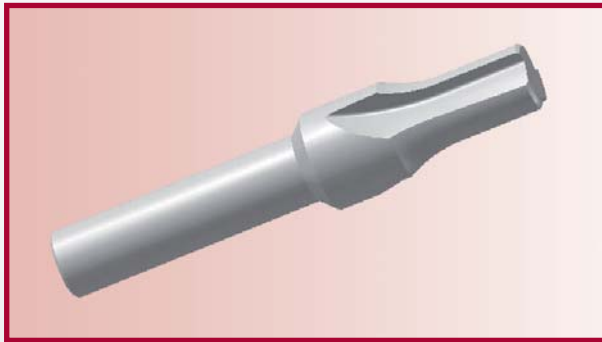


Material: HSS (1.3343)
Hardness: Shaft: 64 ±2 HRC
 Head: 50 ±5 HRC

d ₁	axb		l ₂ +0.5 0	l ₁					Locking flat
	≥	± 0.01 ≤		63/71	80	90	100	120	
Price by piece in EUROS									
5	2.5	4.9	10	38,53	40,71	43,00	45,57		4,37
6	3.0	5.9		38,79	40,97	43,34	45,89		
8	4.0	7.9	13	44,53	46,69	49,00	51,63	57,29	5,80
10	5.0	9.9	17	46,21	48,61	51,11	53,94	60,05	
13	9.0	12.9		49,46	52,03	54,93	58,08	65,05	
16	12.0	15.9		52,95	55,91	59,20	62,82	70,72	
20	16.0	19.9		68,57	73,35	77,24	81,51	88,71	
25	18	24,9		79,62	83,19	86,78	90,76	101,65	10,17

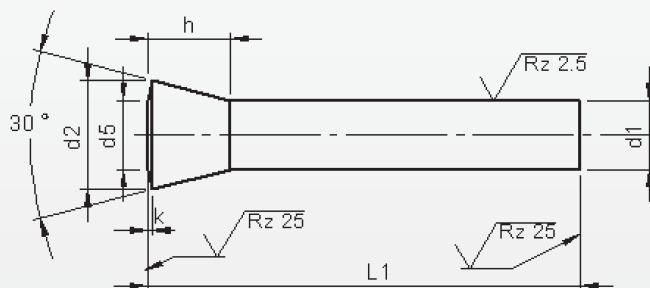
Posaunenhead-countersink

For punches with bottle neck



Material: HSS (1.3343)
Hardness: Shaft: 64 ±2 HRC

d ₁ f7	d ₂ h8	d ₃ h11	r	L ₁	Price by piece in EUROS
5,0	7,4	=d2	10,0	10,0	39,47
5,5	8,5				43,68
6,0	9,5				47,89
6,5 - 7,0	10,5	10	12,0	12,0	51,05
7,5 - 8,0	11,5				55,26
8,5 - 9,0	13,5		64,21		
9,5 - 10,0	14,5		68,42		
10,5 - 11,0	15,5		68,42		
11,5 - 12,0	16,5		68,42		
12,5 - 13,0	17,5		83,16		
13,5 - 14,0	18,5		83,16		
14,5 - 15,0	19,5		83,16		
15,5 - 16,0	20,5		83,16		
16,5 - 17,0	21,5	16,0	15,0	15,0	93,68
17,5 - 18,0	22,5				93,68
18,5 - 19,0	23,5				93,68
19,5 - 20,0	25,5				93,68
25,0	30,5				100,00



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

d ₁	d ₂	d ₅	h	k	L ₁ ^{+1.0} ₀				
					71	80	90	100	120
h6	- 0.3 - 0.0				Price by piece in EUROS				
4	6.6	3.8	6	1	6,36	6,96	7,96	8,90	
5	8.2	5	7	1	6,36	7,02	7,74	8,46	10,17
6	9.7	6	8	1	7,29	8,07	8,84	9,73	11,66
7	11.8	7	10	1	8,62	9,51	10,44	11,49	13,82
8	12.8	8	10	1	10,11	11,11	12,21	13,43	16,14
9	14.4	9	11	1	11,44	12,43	13,54	14,76	17,46
10	15.9	10	12	1	12,77	14,04	15,42	16,97	20,34
11	17.4	11	13	1.5	14,20	15,47	15,75	18,40	21,77
12	18.7	12	14	1.5	15,69	17,24	19,01	20,89	25,09
13	20.2	13	15	1.5	16,80	18,35	20,12	21,99	26,19
14	21.8	14	16	1.5	17,96	19,62	21,22	23,10	27,30
15	23.3	15	17	1.5	19,07	20,94	23,04	25,31	30,45
16	24.6	16	18	2	20,17	22,05	24,15	26,42	31,56

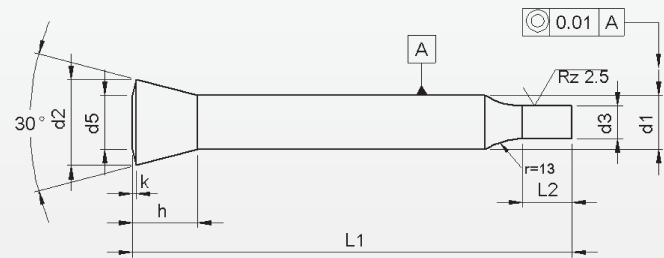
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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	h6	+0.5 +0.0	Price by piece in EUROS				
4	1,6	– 3,9	10	9,12	9,73	10,72	11,66	
5	2,5	– 2,4	10	9,39	10,06	10,78	11,49	13,21
6	3,0	– 2,9	10	10,83	11,61	12,38	13,26	15,20
7	3,0	– 6,9	10	12,77	13,65	14,59	15,64	17,96
8	4,0	– 7,9	13	14,26	15,25	16,36	17,57	20,28
9	4,5	– 8,9	13	16,36	17,35	18,46	19,67	22,38
10	5,0	– 9,9	17	17,68	18,96	20,34	22,05	25,26
11	5,0	– 10,9	17	19,84	21,00	21,39	24,04	27,30
12	6,0	– 11,9	17	21,33	22,88	24,65	26,53	30,73
13	9,0	– 12,9	17	22,44	23,98	25,75	27,63	31,83
14	9,5	– 13,9	17	25,64	27,30	28,90	30,78	34,98
15	10,0	– 14,9	17	26,75	28,63	30,73	32,99	38,13
16	12,0	– 15,9	17	27,85	29,73	31,83	34,10	39,24

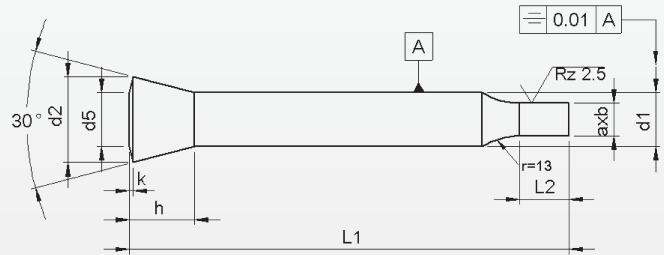
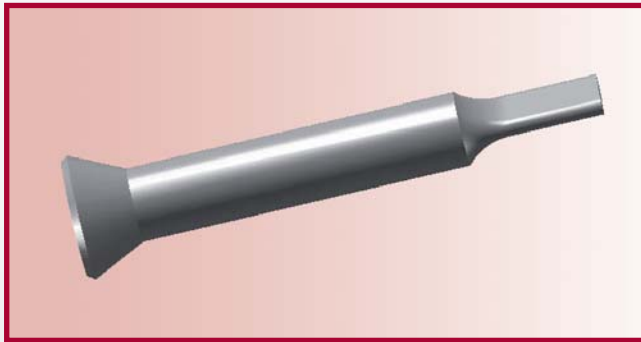
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

Extra charges and discounts:

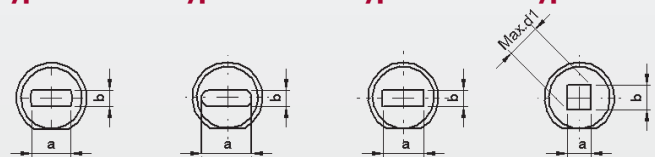
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

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 ₁	axb			l ₂	l ₁ ^{+1.0} / ₀						
	h6	b ≥	a ≤		±0.01	71	80	90	100	120	Locking flat
					Price by piece in EUROS						
4	1,6	—	3,9	10	23,76	24,37	25,37	26,31	27,58	4,37	
5	2,5	—	2,4	10	23,76	24,43	25,14	25,86	29,07		
6	3,0	—	2,9	10	24,70	25,48	26,25	27,13	31,22		
7	3,0	—	6,9	10	26,03	26,91	27,85	28,90	39,35	5,80	
8	4,0	—	7,9	13	33,32	34,32	35,42	36,64	40,67		
9	4,5	—	8,9	13	34,65	35,64	36,75	37,97	43,55		
10	5,0	—	9,9	17	35,98	37,25	38,63	40,18	44,98		
11	5,0	—	10,9	17	37,41	38,68	38,96	41,61	48,30		
12	6,0	—	11,9	17	38,91	40,45	42,22	44,10	49,41		
13	9,0	—	12,9	17	40,01	41,56	43,33	45,21	50,51		
14	9,5	—	13,9	17	41,17	42,83	44,43	46,85	53,66		
15	10,0	—	14,9	17	42,28	44,16	46,26	48,52	54,77		
16	12,0	—	15,9	17	43,38	45,26	47,36	49,63			

Punches with key-flat against surcharge.

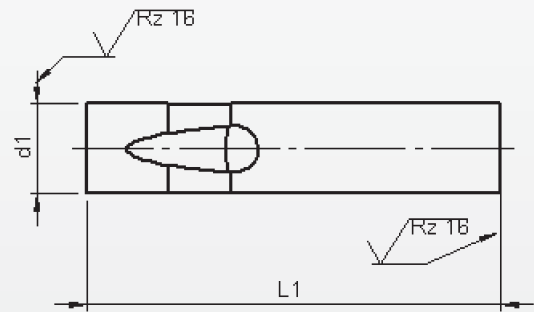
Without detailed specification the key-flat is parallel to the major axis of surface a.

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 ₁	I ₁ ^{+0.3} _{+0.2}				
	63/71	80	90	100	125
g5	Price by piece in EUROS				
6	8,62	9,28	10,06	10,94	12,71
10	11,27	12,16	13,32	14,42	17,02
13	13,82	14,92	16,30	17,79	21,00
16	16,58	18,13	19,73	21,55	25,42
20	19,78	21,55	23,60	25,81	30,56
25	24,15	26,42	28,90	31,61	37,58

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

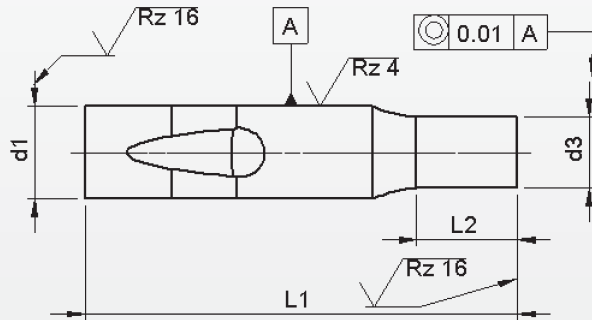
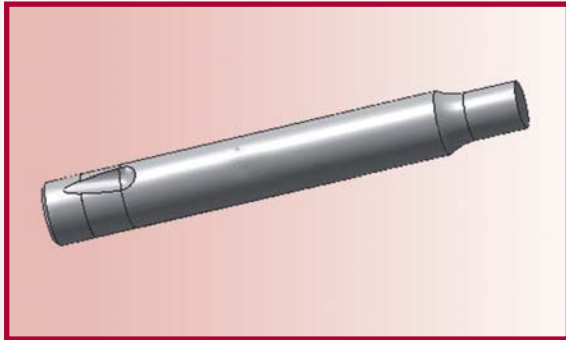
Extra charges and discounts:

- 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 ₁	d ₃		l ₂	l ₁ ^{+0.3} / _{+0.2}					
				63/71	80	93	100	125	
g ₅	≥	^{+0.01} / _{-0.0}	≤	Price by piece in EUROS					
6	3,0	–	5,9	10	12,16	12,82	13,59	14,48	16,25
10	5,0	–	9,9	17	16,19	17,08	18,24	19,34	21,94
13	9,0	–	12,9	17	19,45	20,56	21,94	23,43	26,64
16	12,0	–	15,9	17	24,26	25,81	27,41	29,23	33,10
20	16,0	–	19,9	17	30,45	32,22	34,26	36,47	41,23
25	20,0	–	24,9	17	37,91	40,18	42,66	45,37	51,34

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

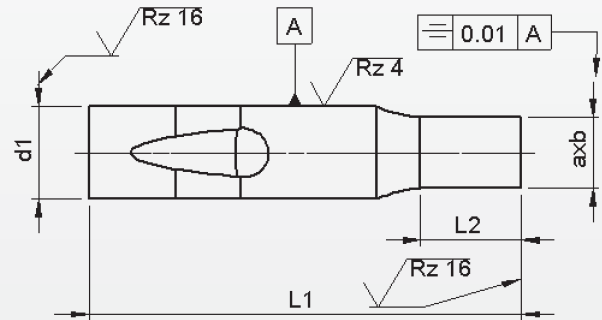
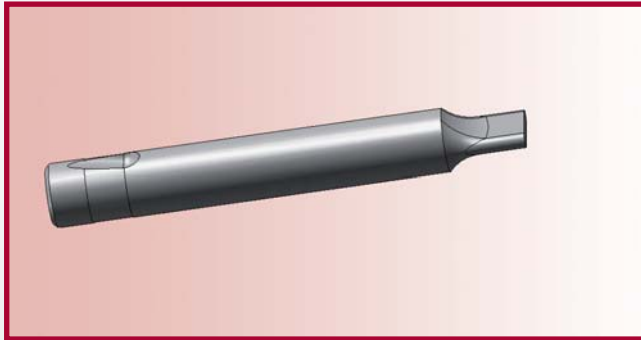
Extra charges and discounts:

- 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%

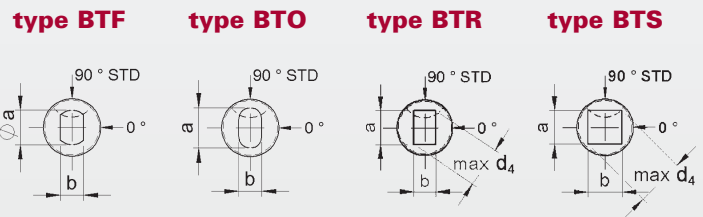
Ball-Lock punch type BT.. (Light Duty)

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

With reduced shaft 'Form'



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



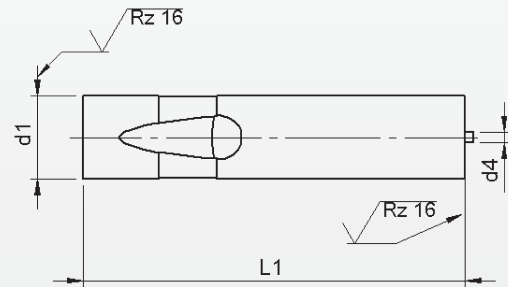
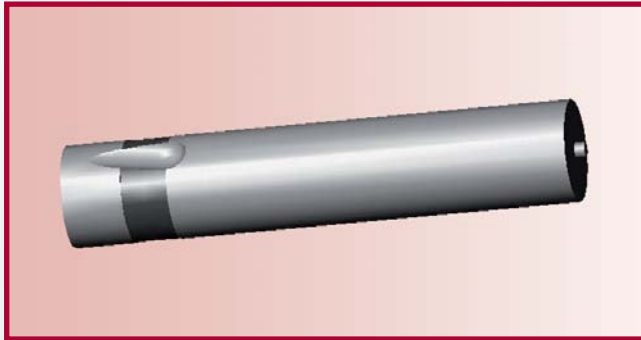
d ₁	axb			l ₂	l ₁ ^{+0.3} / _{+0.2}				
	b	± 0.01	a		63/71	80	93	100	125
g ₅	≥		≤	+0.5 +0.0	Price by pièce in EUROS				
6	3,0	–	5,9	10	26,03	26,69	27,47	28,35	30,12
10	5,0	–	9,9	17	34,48	35,37	37,03	37,63	40,23
13	9,0	–	12,9	17	37,03	38,13	39,51	41,01	44,21
16	12,0	–	15,9	17	39,79	41,34	42,94	44,76	48,63
20	16,0	–	19,9	17	54,60	56,37	58,41	60,62	65,38
25	20,0	–	24,9	17	64,77	67,03	69,52	72,23	78,20

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 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

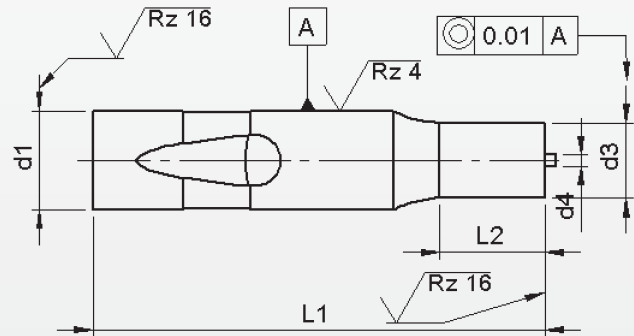
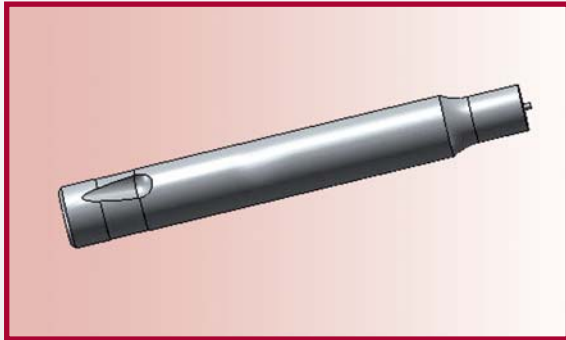
d1	L ₁ ^{+0.3} _{+0.2}				
	63/71	80	93	100	125
g5	Price by piece in EUROS				
6	19,67	20,34	21,11	21,99	23,76
10	22,33	23,21	24,37	25,48	28,07
13	24,87	25,97	27,36	28,85	32,05
16	27,63	29,18	30,78	32,61	36,47
20	30,84	32,61	34,65	36,86	41,61
25	35,20	37,47	39,96	42,66	48,63

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 ₁	d ₃		l ₂	l ₁ ^{+0.3} / _{+0.2}				
				63/71	80	93	100	125
g ₅	≥	≤	^{+0.5} / ₀	Price by piece in EUROS				
6	3,0	5,9	10	23,21	23,87	24,65	25,75	27,30
10	5,0	9,9	17	27,24	28,13	29,29	30,39	32,99
13	9,0	12,9	17	30,51	31,61	32,99	35,59	37,69
16	12,0	15,9	17	36,42	36,86	38,46	40,29	44,16
20	16,0	19,9	17	52,56	43,27	45,32	47,53	52,28
25	20,0	24,9	17	48,96	51,23	53,72	56,42	62,39

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

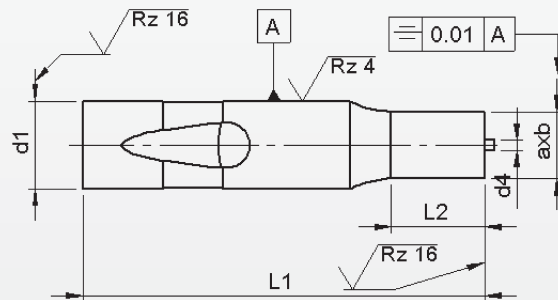
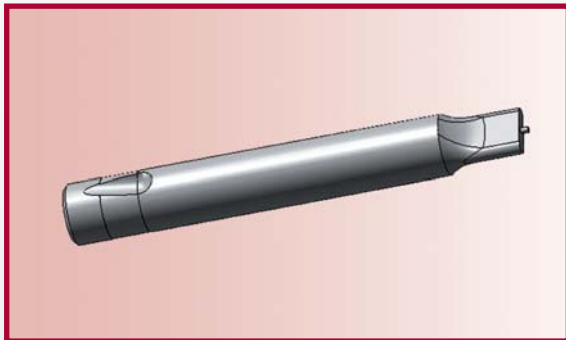
Extra charges and discounts:

- 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%

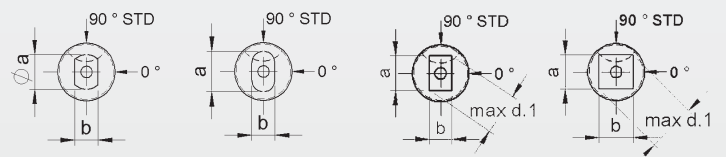
Ball-Lock punch type EBT.. (Light Duty)

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

With ejector with reduced shaft 'Form'



type EBTf type EBTO type EBTR type EBTS



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

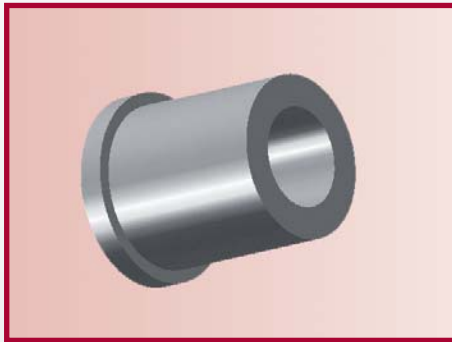
d ₁	axb		l ₂	l ₁ ^{+0.3} / _{+0.2}					
				63/71	80	93	100	125	
g ₅	b ≥	± 0.01	a ≤	Price by piece in EUROS					
6	3,0	–	5,9	10	37,08	37,74	38,52	39,40	41,17
10	5,0	–	9,9	17	45,54	46,42	48,08	48,69	51,28
13	9,0	–	12,9	17	48,08	49,18	50,57	52,06	55,26
16	12,0	–	15,9	17	50,84	52,39	53,99	55,82	59,68
20	16,0	–	19,9	17	65,65	67,42	69,47	71,68	76,43
25	20,0	–	24,9	17	75,82	78,09	80,57	83,28	89,25

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

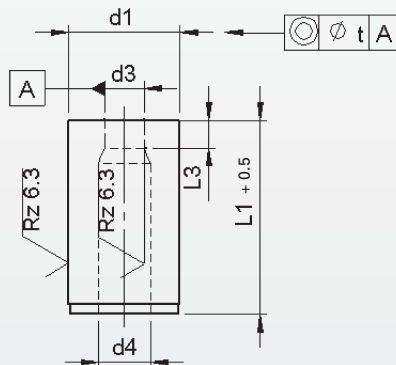
Extra charges and discounts:

- 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%

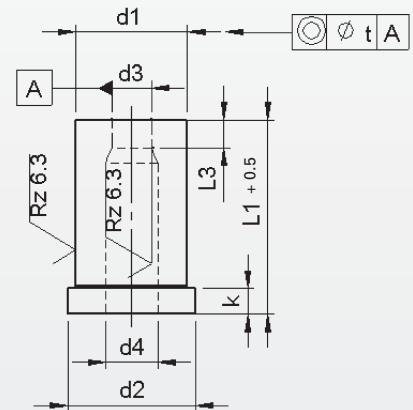
Die buttons DIN 9845 A / B



type A



type B

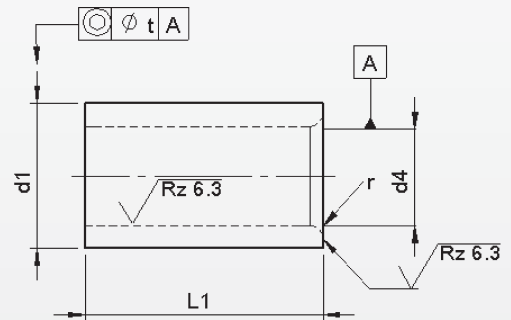


Material: HWS (1.2379)
Hardness: Shaft: 64 ±2 HRC

d ₁ Typ A n6 Typ B k6	d ₂	k	d ₃ H8	l ₃	d ₄ ± 0.1	Form A		Form B		
						l ₁	l ₁	l ₁	l ₁	
						20	28	20	28	
Price by piece in EUROS										
5	7	4	1.0	2.0	d ₁ + 0.3	17,44		21,00		
6	8		1.0	2.0	3.0	d ₁ + 0.3	11,94	15,38	14,00	18,56
7	9		2.1	3.0	3.0	d ₁ + 0.5	9,94	12,44	14,00	15,00
8	10		3.1	4.0	3.0	d ₁ + 0.5	9,94	11,57	14,00	15,00
10	12		4.1	5.0	4.0	d ₁ + 0.7	9,94	11,57	14,00	15,00
12	14		5.1	6.0	4.0	d ₁ + 0.7	9,94	11,57	14,00	15,00
15	17		6.1	8.0	4.0	d ₁ + 0.7	9,94	13,44	12,94	16,19
18	20		8.1	10.0	4.0	d ₁ + 1.0	9,94	14,19	14,25	17,19
22	24		10.1	12.0	5.0	d ₁ + 1.0	12,19	14,94	14,69	18,13
26	28		12.1	15.0	5.0	d ₁ + 1.0	16,19	19,60	19,63	23,69
30	32		15.1	18.0	5.0	d ₁ + 1.0		24,31		29,88

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

Die buttons DIN 9845 C

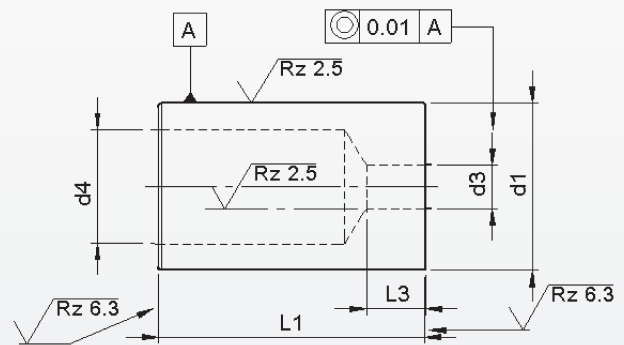
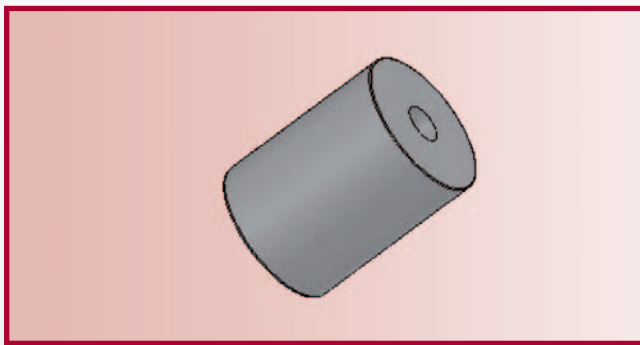


Material: HWS (1.2379)
Hardness: Shaft: 64 ±2 HRC

d ₄			d ₁	l ₁	r	t	d ₄	Price by piece in EUROS
≥	H7	≤	n6					
		1.0	5	9	1.0	0.01	0.10	12,94
1.1	-	2.0	6	12	1.0	0.01	0.10	11,12
2.1	-	3.0	7	12	1.0	0.01	0.10	15,58
3.1	-	4.0	8	12	1.0	0.01	0.10	9,80
4.1	-	5.0	10	16	1.0	0.01	0.10	6,18
5.1	-	6.0	12	16	1.5	0.01	0.10	8,06
6.1	-	8.0	15	20	1.5	0.01	0.10	9,26
8.1	-	10.0	18	20	2.0	0.01	0.10	11,78
10.1	-	12.0	22	28	2.0	0.01	0.10	11,78
12.1	-	15.0	26	28	2.0	0.01	0.10	14,22
15.5	-	18.0	30	36	2.0	0.01	0.50	23,58

Die buttons ISO 8977 A

With round holes



Material: HSS (1.3343)

Hardness: Shaft: 64 ±2 HRC

d ₁	l ₃	d ₃ +0.02 0	d ₄	l ₁ ^{+0.5} ₀								
				16	20	22	25	28	30	32	35	
n5		≥ — ≤		Price by piece in EUROS								
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	

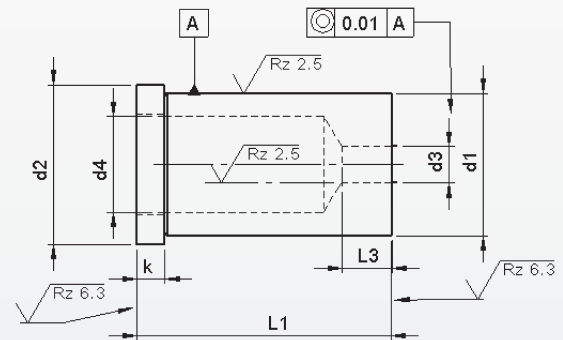
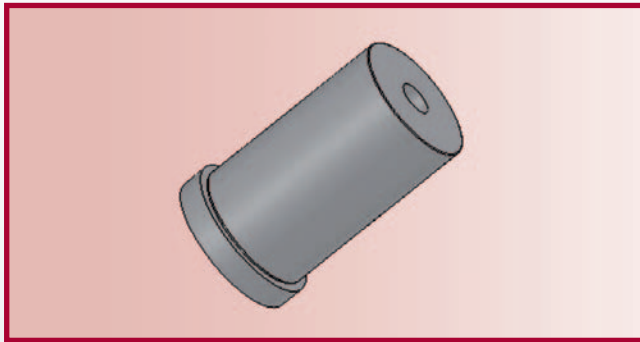
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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 ₁	d ₂	l ₃	d ₃	d ₄	k	l ₁ ^{+0.5} ₀							
						16	20	22	25	28	30	32	35
m5			$\begin{matrix} +0.02 \\ 0 \\ \leq \end{matrix}$		$\begin{matrix} +0.25 \\ 0 \end{matrix}$	Price by piece in EUROS							
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	

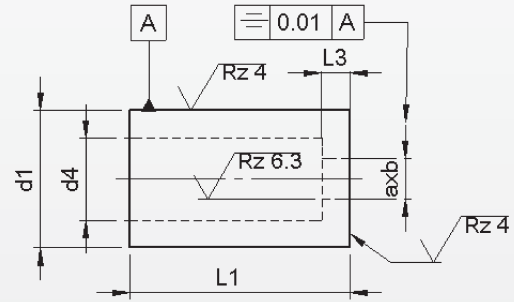
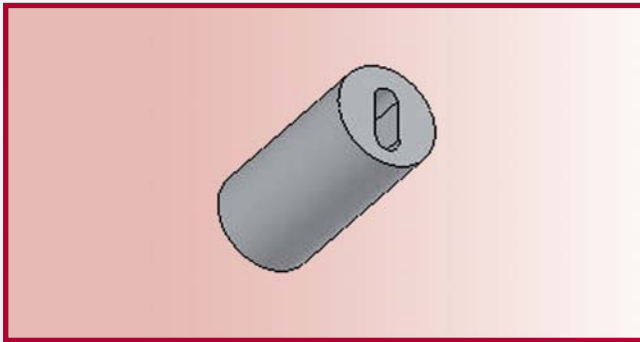
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

Extra charges and discounts:

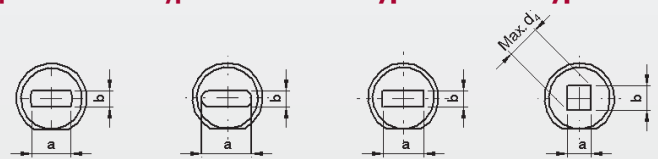
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension – 5%
- 50 Pieces per dimension – 7%
- 100 Pieces per dimension – 10%

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 ₁	l ₃	d ₃			d ₄	l ₁ ^{+0.5} / ₀								Locking flat		
		≥	-	≤		16	20	22	25	28	30	32	35			
n5		± 0.01				Price by piece in EUROS										
5	2	1,0	-	2,4	2,8	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	4,37	
6	3	1,6	-	3,0	3,5	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	4,37	
8	4	2,0	-	3,5	4,0	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	5,80	
10	4	2,5	-	5,0	5,8	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	5,80	
13	5	3,0	-	7,0	8,0		16,20	16,20	16,20	16,20	16,20	16,20	16,20	16,20	5,80	
16	5	4,0	-	9,0	9,5		18,90	18,90	18,90	18,90	18,90	18,90	18,90	18,90	5,80	
20	8	6,0	-	11,0	12,0		33,30	33,30	33,30	33,30	33,30	33,30	33,30	33,30	8,74	
22	8	8,0	-	11,0	15,0		39,00	39,00	39,00	39,00	39,00	39,00	39,00	39,00	8,74	
25	8	8,0	-	16,0	17,3		45,00	45,00	45,00	45,00	45,00	45,00	45,00	45,00	10,17	
32	8	8,0	-	20,0	20,7		54,90	54,90	54,90	54,90	54,90	54,90	54,90	54,90	11,61	
40	8	19	-	27,0	27,7			86,40	86,40	86,40	86,40	86,40	86,40	86,40	12,25	
50	8	26	-	36,0	37,0				112,50	112,50	112,50	112,50	112,50	112,50	13,16	

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

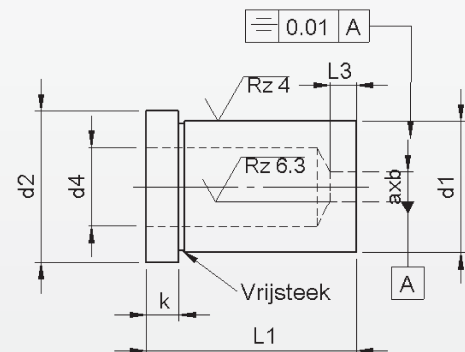
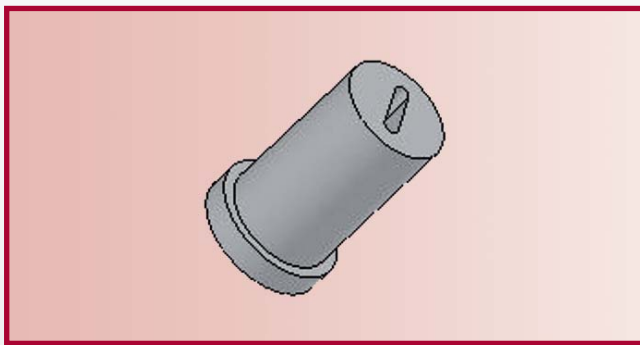
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

Extra charges and discounts:

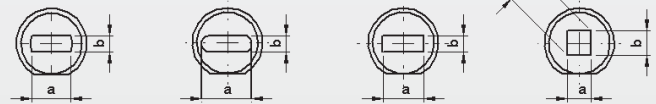
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

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 ₁ m5	d ₂	l ₃	axb d ₃		d ₄	k +0.25 0	l ₁ ^{+0.5} / ₀								Locking flat	
			≥ ±0.01	≤			16	20	22	25	28	30	32	35		
							Price by piece in EUROS									
5	8	2	1,0	– 2,4	2,8	5	18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	4,37
6	9	3	1,6	– 3,0	3,5		18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	4,37
8	11	4	2,0	– 3,5	4,0		18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	5,80
10	13	4	2,5	– 5,0	5,8		18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	5,80
13	16	5	3,0	– 7,0	8,0			18,00	18,00	18,00	18,00	18,00	18,00	18,00	18,00	5,80
16	19	5	4,0	– 9,0	9,5			21,00	21,00	21,00	21,00	21,00	21,00	21,00	21,00	5,80
20	23	8	6,0	– 11,0	12,0			37,00	37,00	37,00	37,00	37,00	37,00	37,00	37,00	8,74
22	25	8	8,0	– 14,0	15,0			44,00	44,00	44,00	44,00	44,00	44,00	44,00	44,00	8,74
25	28	8	8,0	– 16,0	17,3			50,00	50,00	50,00	50,00	50,00	50,00	50,00	50,00	10,17
32	35	8	8,0	– 20,0	20,7			61,00	61,00	61,00	61,00	61,00	61,00	61,00	61,00	11,61
40	43	8	19	– 27,0	27,7			96,00	96,00	96,00	96,00	96,00	96,00	96,00	96,00	12,25
50	53	8	26	– 36,0	37,0			125,00	125,00	125,00	125,00	125,00	125,00	125,00	125,00	13,16

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

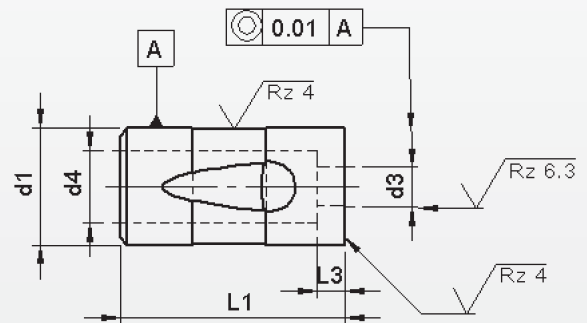
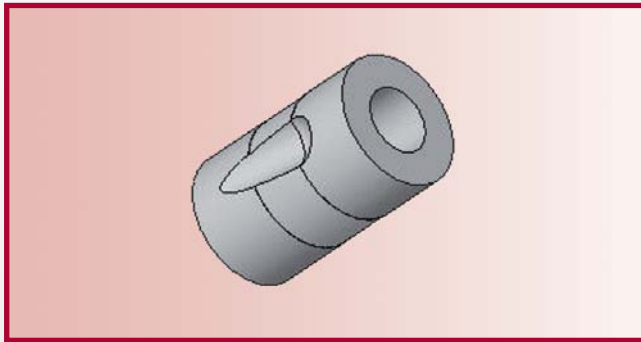
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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 ₁	l ₃	d ₃		d ₄	l ₁	Price by piece in EUROS
h5		≥	+0.01 0 ≤		+0.2 0	
13	3,5	3	-	7	7,5	18,70
16	4	4	-	8	9	21,40
20	4,5	6	-	11	12	35,80
25	5	12	-	16	17	47,50
32	6	13	-	20	22	57,40
38	6	16	-	26	28	88,90
63,5	7	25	-	50	51	135,00

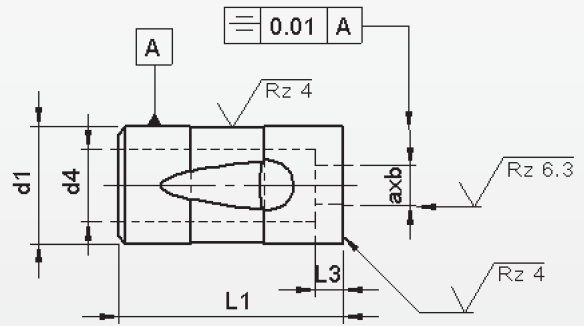
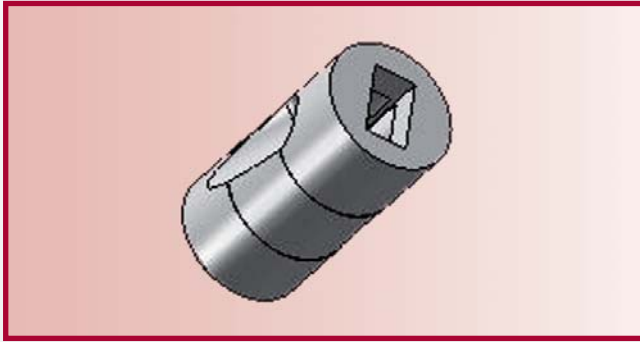
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

Extra charges and discounts:

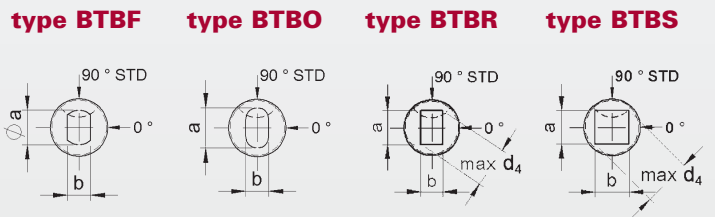
- 1 Pieces per dimension + 50%
- 2-3 Pieces per dimension + 25%
- 25 Pieces per dimension - 5%
- 50 Pieces per dimension - 7%
- 100 Pieces per dimension - 10%

Die buttons type BTB..

With shape-hole



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



d ₁	l ₃	axb		d ₄	l ₁	Price by piece in EUROS
		d ₃				
h5		≥	+0.01 -0	≤	+0.2 0	
13	3,5	3	-	7	32	18,70
16	4	4	-	8		21,40
20	4,5	6	-	11		35,80
25	5	12	-	16		47,50
32	6	13	-	20		57,40
38	6	16	-	26		88,90
63,5	7	25	-	50		135,00

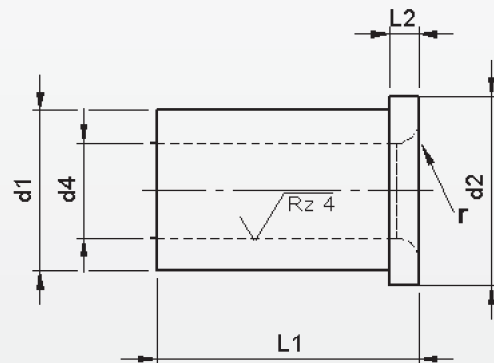
Intermediate diameters, other lengths and special materials e.g. ASP, CPM and Vanadis, are available on request.

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

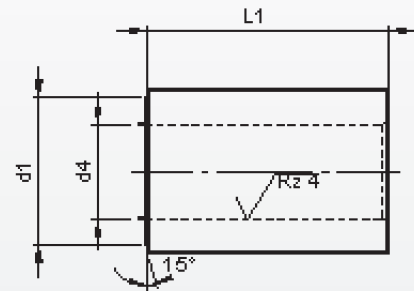
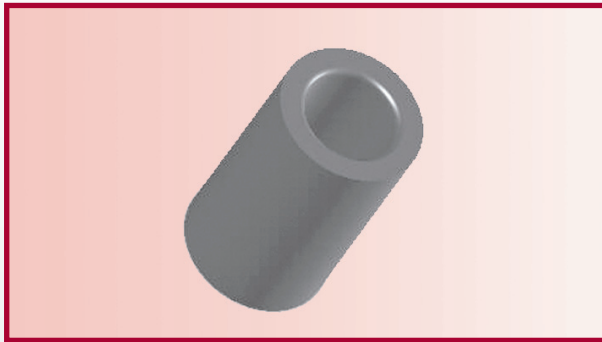


Material: 1.7262
Hardness: 62-65 HRC

		Price by piece in EUROS										
		d_4					L_1					
		F7		n6			short	EURO	middle	EURO	long	EURO
		t/m										
0,4	t/m	1,0	3	6	2	6						
1,1	t/m	1,8	4	7	2	6		9				
1,9	t/m	2,6	5	8	2	6	5,58	9	6,02			
2,7	t/m	3,3	6	9	2,5	8	4,20	12	3,48			
3,4	t/m	4,0	7	10	2,5	8	3,37	12	3,65	16	7,07	
4,1	t/m	5,0	8	11	2,5	8	3,48	12	3,70	16	6,02	
5,1	t/m	6,0	10	13	3	10	3,59	16	3,76	20	6,36	
6,1	t/m	8,0	12	15	3	10	3,70	16	4,14	20	6,80	
8,1	t/m	10,0	15	18	3	12	4,14	20	4,53	25	7,29	
10,1	t/m	12,0	18	22	4	12	4,48	20	5,08	25	8,23	
12,1	t/m	15,0	22	26	4	16	5,08	28	5,91	36	8,90	
15,25	t/m	18,0	26	30	4	16	5,91	28	7,52	36	11,94	
18,25	t/m	22,0	30	34	5	20	6,91	36	8,95			
22,25	t/m	26,0	35	39	5	20	8,95	36	12,16			
26,25	t/m	30,0	42	46	5	25	11,61	45				
30,25	t/m	35,0	48	52	5	25	13,71	45				
35,50	t/m	40,0	55	59	5	30	17,96	56				

Press fit jig Bushes DIN 179 a

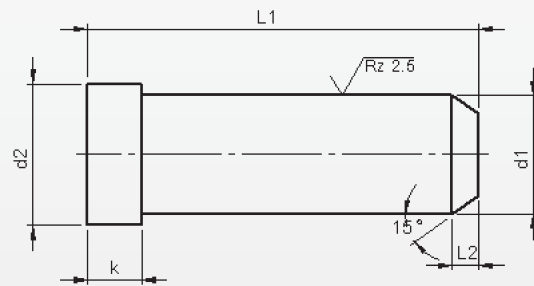
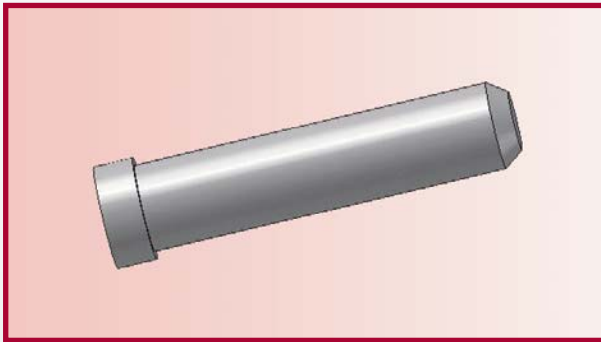
Without shoulder



Material: 1.7262
Hardness: 62-65 HRC

d ₄	F7	t/m	d ₁	n6	Price by piece in EUROS				
					L ₁	L ₁	L ₁		
					short	EURO	middle	EURO	long
0,4	t/m	1,0	3	6	*		*		*
1,1	t/m	1,8	4	6	3,54	9	4,86		
1,9	t/m	2,6	5	6	2,43	9	3,26		
2,7	t/m	3,3	6	8	3,59	12	2,71	16	5,25
3,4	t/m	4,0	7	8	2,60	12	2,76	16	3,95
4,1	t/m	5,0	8	8	2,76	12	2,93	16	4,21
5,1	t/m	6,0	10	10	2,76	16	3,15	20	4,32
6,1	t/m	8,0	12	10	3,15	16	3,37	20	4,63
8,1	t/m	10,0	15	12	3,37	20	3,98	25	5,47
10,1	t/m	12,0	18	12	3,98	20	4,53	25	5,84
12,1	t/m	15,0	22	16	4,31	28	5,75	36	7,68
15,25	t/m	18,0	26	16	5,14	28	6,91	36	8,89
18,25	t/m	22,0	30	20	6,96	36	9,39		
22,25	t/m	26,0	35	20	8,79	36	11,16		
26,25	t/m	30,0	42	25	10,56	45	12,93		
30,25	t/m	35,0	48	25	13,59	45			
35,50	t/m	40,0	55	30	18,02	56			

Guide pillar type G100

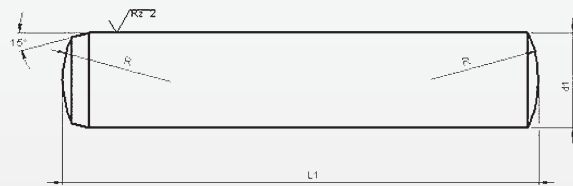
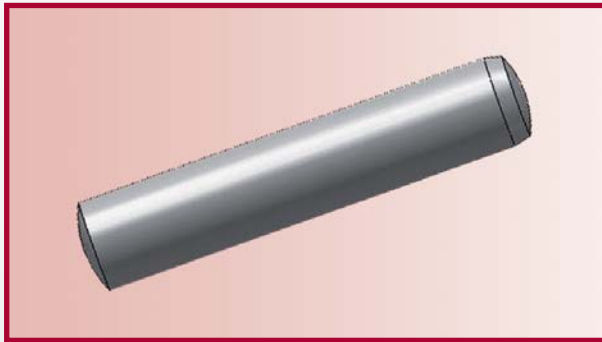


Material: 1.7262
Hardness: 60 ±2 HRC

d ₁ g6	10	12	14	16	18	20	22	24	26
d ₂ -0.2	12	16	18	20	22	24	26	28	30
k	3	6	8	8	8	8	15	15	15
l₁	Příce by pièce in EURoS								
40	4,48	4,81							
60	4,64	5,31	5,36	5,80	6,13				
80	4,81	5,53	5,64	6,13	6,74	7,68	8,79		
100	5,31	5,97	6,36	7,02	7,68	8,57	10,00	11,16	13,04
120	5,97	6,74	7,02	7,96	8,79	10,06	12,27	13,10	15,47
140		7,41	8,57	9,06	10,00	11,00	13,04	14,48	17,08
160		8,18	10,00	10,50	11,00	12,32	14,48	15,81	18,79
180			11,16	11,88	12,82	14,09	15,92	17,24	20,61
200			12,38	13,43	13,76	15,81	17,46	18,51	22,33
220			14,37	17,63	17,63	17,63	19,67	21,55	28,90
240				20,83	21,17	20,89		24,15	
270								31,61	

Parallel Pins DIN 6325

Tolerances m6/h6



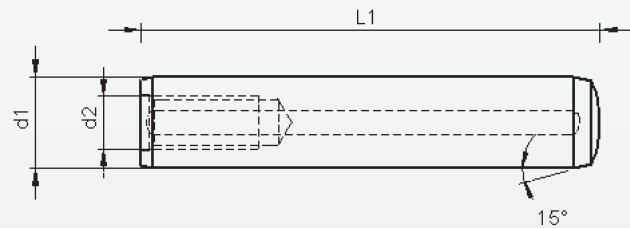
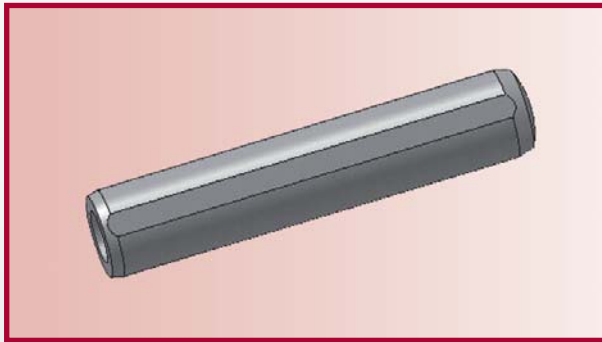
Hardness: 60 ±2 HRC

Price by piece in EUROS (m6-tolerance)												
L \	1,5	2	3	4	5	6	8	10	12	14	16	20
4	7,47											
6	7,74	4,42	4,05	5,26	8,68							
8	8,05	4,58	4,42	5,68	8,68	9,95						
10	8,37	4,63	4,63	6,00	8,68	10,11						
12	8,84	4,84	4,95	6,37	8,89	10,47						
14	10,11	5,05	5,26	6,68	9,32	10,63	20,53					
16	9,53	5,37	5,53	7,05	9,68	11,16	20,53					
18	0,00	5,68	5,79	7,58	10,11	11,74	21,53	30,21				
20	10,16	5,79	6,00	7,95	10,47	12,37	21,89	33,26	49,68			
24	12,05	6,37	6,47	8,68	11,53	13,58	24,00	36,32	53,79			
28		6,84	9,16	9,95	12,42	14,79	26,05	39,32	57,95			
32			10,47	10,63	13,47	16,16	28,00	43,89	62,21			
36			11,32	10,95	14,53	17,58	30,00	45,32	66,47	87,53		
40			12,16	16,53	16,74	18,58	32,05	48,32	70,42	93,37	119,58	
45				19,37	18,16	20,58	34,63	51,95	75,68	107,74	138,11	177,74
50					19,58	27,58	37,21	55,79	80,89	122,00	156,58	206,16
60					37,21	30,89	44,32	66,84	91,47	136,53	176,32	234,47
70					46,89	48,47	51,16	74,89	102,84	150,74	195,05	262,89
80						62,58	60,79		120,21	169,11	213,58	291,47
90						81,11	68,47		131,68	191,05	243,58	319,84
100						81,11	74,68		136,47	236,74	283,21	348,16
120							96,63		170,05			431,89

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 ₁ m ⁶	4	5	6	8	10	12	14	16	20
d ₂	M3	M3	M4	M5	M6	M6	M8	M8	M10
l ₁	Price by piece in EUROS								
10	117,74	44,84							
12	117,74	45,79	35,68						
14	117,74	46,74	35,68						
16	118,37	47,63	35,68	53,32	61,26				
18	118,53	48,63	37,58	53,32	66,47				
20	118,53	49,53	37,58	53,32	66,47	97,58			
24	119,05	50,89	39,21	54,53	70,05	97,58			
28	127,11	52,79	41,11	53,32	73,84	97,58			
32	130,89	54,68	42,89	55,95	77,47	102,32	129,47	171,63	
36	131,84	37,37	44,84	58,53	81,32	107,11	129,47	171,63	
40	136,53	58,32	47,53	61,21	84,74	111,95	129,47	171,63	244,79
50	144,84	62,84	54,53	76,89	95,26	124,21	151,42	191,84	244,79
60			61,05	85,47	103,68	136,53	174,05	212,37	244,79
70			80,53	94,00	113,95	149,37	194,84	236,53	277,74
80				104,11	127,26	165,47	215,53	263,21	321,74
90				128,47	133,63	176,05	261,26	304,74	413,16
100				128,47	143,26	176,05	261,26	309,00	466,53
120				155,63	201,32	225,05	304,58	364,95	672,26

Minimum order quantity:

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