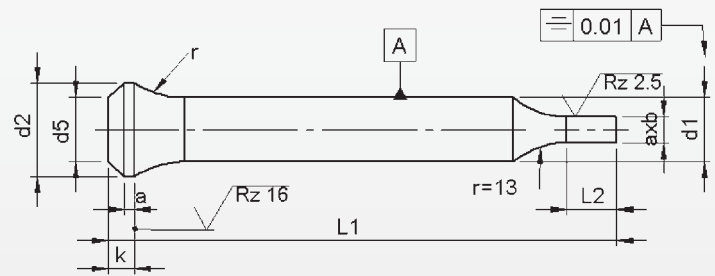
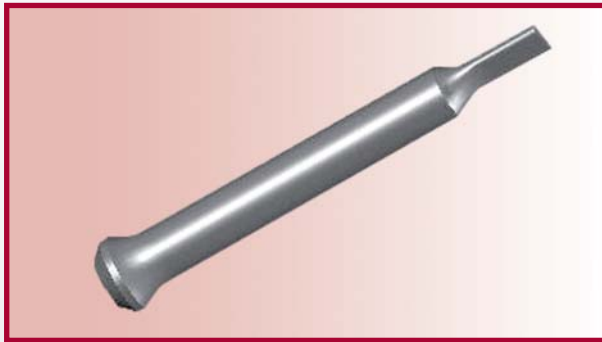


# Punches with bottle neck type PP..

With reduced shaft 'Form'



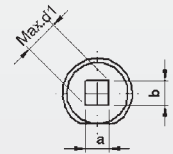
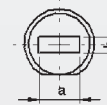
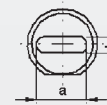
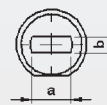
**Material:** HSS (1.3343)  
**Hardness:** Shaft: 64 ±2 HRC  
 Head: 50 ±5 HRC

type PF

type PO

type PR

type PS



d <sub>1</sub>	axb		l <sub>2</sub>	l <sub>1</sub> <sup>+0.5</sup> / <sub>0</sub>					Locking flat
	b	a		71	80	90	100	120	
h6	≥	≤	<sup>+0.5</sup> / <sub>+0.0</sub>	Price by piece in EUROS					
3,0	1,6	2,9	10	19,35	19,75	20,20	20,70	21,20	3,95
3,5	1,6	3,4		20,25	20,75	21,30	21,95	22,55	
4,0	1,6	3,9		19,60	20,05	20,50	21,00	21,50	
4,5	2,0	4,4		20,55	21,15	21,70	22,30	22,95	
5,0	2,5	4,9		20,10	20,55	21,10	21,70	22,30	
5,5	2,5	4,4		21,20	21,75	22,45	23,20	23,95	
6,0	3,0	5,9		20,50	21,00	21,55	22,20	22,85	
6,5	3,0	6,4		26,95	27,55	28,25	29,05	29,90	
7,0	3,5	6,9		25,15	26,60	27,20	27,85	28,50	
7,5	3,0	7,4		26,20	28,00	28,75	29,55	30,40	
8,0	3,5	7,9	13	26,95	27,60	28,30	29,10	29,90	5,25
8,5	4,0	8,4		28,45	29,25	30,15	31,15	32,15	
9,0	4,0	8,9		27,35	28,05	28,85	29,70	30,60	
9,5	4,5	9,4		28,95	29,80	30,80	31,90	33,00	
10,0	5,0	9,9		27,60	28,30	29,10	30,00	30,90	
10,5	5,5	10,4		29,25	30,15	31,15	32,25	33,40	
11,0	5,5	10,9		27,80	28,55	29,40	30,30	31,25	
11,5	6,0	11,4		29,50	30,45	31,50	32,65	33,80	
12,0	6,0	11,9		29,40	30,30	31,35	32,50	33,65	
12,5	7,0	12,4		31,50	32,65	33,95	35,40	36,80	
13,0	9,0	12,9	17	30,90	31,95	33,15	34,50	35,85	5,25
13,5	9,0	13,4		32,55	33,70	34,95	36,35	39,40	
14,0	9,5	13,9		33,15	34,35	35,55	36,95	40,00	
14,5	9,5	14,4		33,75	34,95	36,15	37,55	40,60	

**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.