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# BLANK DIES

## **KLT Carbide Co.,Ltd.**

KLT Carbide Co. Ltd., established in 1988, is an international company which specializes in making cemented carbides and hard facing materials. Our products are widely used as highly wear resistant parts, molds for metal products and mining tools, especially mechanical seal rings, bushings, valve parts and nozzles for Oil, Gas industries and other flow control projects.

We are one of the biggest Chinese manufacturers for seal rings and bushings and also provide wear resistant solutions and technical support to customers.

## Main products and corresponding industries

1. Wear resistant parts
  - 1.1 Wear parts for Oil, Gas industries and other flow control projects
    - 1.1.1 Mechanical seal rings
    - 1.1.2 Sleeves
    - 1.1.3 Nozzles
    - 1.1.4 Valve parts
  - 1.2 Blank dies
    - 1.2.1 Wire drawing dies
    - 1.2.2 Stamping dies for standard fasteners
    - 1.2.3 Forming dies for powder metallurgy
    - 1.2.4 Plates
2. Cemented carbide inserts for engineering, oil-field drilling and mining
  - 2.1 Carbide inserts for engineering and oil-field drilling
  - 2.2 Carbide inserts for coal mining
  - 2.3 Carbide inserts for geological prospecting and exploration
  - 2.4 Mining bits
3. Blank bars and grinding bars
4. Metal cutting inserts
 

Brazed tips, indexable inserts and heavy cutting inserts
5. Hard facing materials and surface treatments
 

Coating with cemented carbide powder, welding with composite rods, spray welding and thermal spraying



## Grades and properties

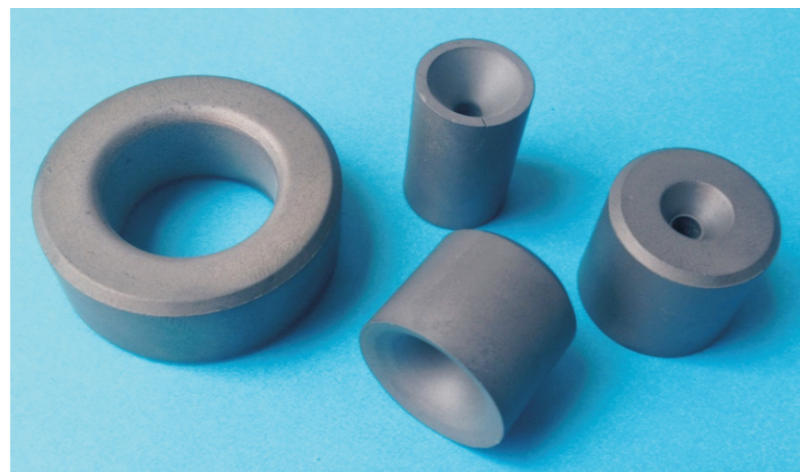
### Grades for dies

Grade	Co (wt %)	Density (g/cm <sup>3</sup> )	Hardness (HRA)	TRS (≥N/mm <sup>2</sup> )	Applications
KC100	5.8~6.2	14.6~15.0	91.5~92.5	2000	Wire drawing dies for wear-resistance impact-resistance
KC101	5.8~6.2	14.6~15.0	91.5~92.5	2500	
KC200	7.8~8.2	14.5~14.9	91.0~92.0	2100	
KC201	7.8~8.2	13.5~14.9	91.0~92.0	2800	
KC300	9.8~10.3	14.2~14.6	90.5~91.5	2600	
KC301	9.8~10.3	14.2~14.6	90.5~91.5	3200	
KC500	14.7~15.3	13.9~14.2	87.0~88.0	2600	Stamping dies for impact-resistance
KC501	14.7~15.3	13.9~14.2	87.0~88.0	2800	
KC800	19.5~20.5	13.4~13.6	83.0~84.0	2600	
KC801	19.5~20.5	13.4~13.6	83.0~84.0	3000	
KC900	23.0~23.5	13.1~13.4	82.5~83.5	2400	
KC901	23.0~23.5	13.1~13.4	82.5~83.5	2600	
Grade	Co+Ni (wt %)	Density (g/cm <sup>3</sup> )	Hardness (HRA)	TRS (≥N/mm <sup>2</sup> )	Applications
KCN61	16.0~17.0	13.5~14.0	83.5~84.5	3200	Stamping dies for High temperature-resistance
KCN71	17.0~18.0	13.3~13.8	82.0~83.0	3000	

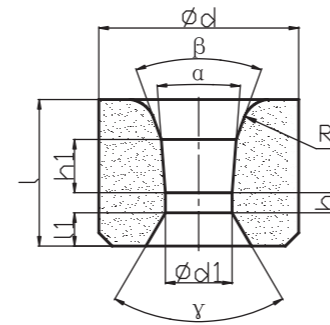
## Blanks for Moulds

### Type

- ◆ Wire drawing dies
- ◆ Stamping dies for standard fasteners
- ◆ Forming dies for powder metallurgy

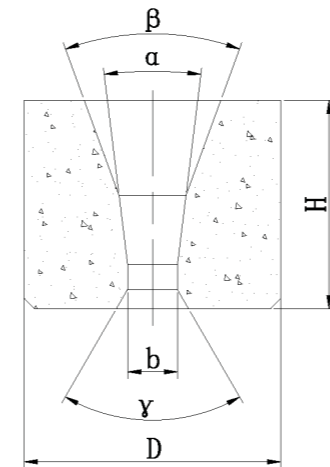


### ◆ Wire drawing dies Type A

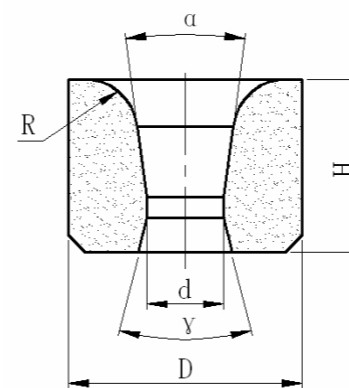


A1 Dimension					
d	l	d1	h	h1	l1
8	6	0.1~1.0	0.1~0.6	1.0~2.0	0.8~1.2
10	8	0.1~1.2	0.1~0.8	1.5~4.0	1.0~1.8
12	10	0.2~2.0	0.1~1.5	2.0~5.0	1.6~2.5
14	12	0.4~2.5	0.2~2.0	4.0~5.0	1.8~2.5
16	13	0.5~3.0	0.2~2.5	4.0~5.5	2.0~3.0
20	17	1.0~6.0	0.6~3.0	5.0~8.0	2.5~4.0
25	20	2.0~8.5	1.0~3.5	7.0~10.0	3.0~4.5
30	24	3.5~12.0	2.0~4.0	8.0~12.0	3.0~5.0

Note:  $\alpha = 8^\circ, 10^\circ, 12^\circ, 14^\circ, 16^\circ, 18^\circ$   
 $\beta = 40^\circ, 60^\circ, 90^\circ$   
 $\gamma = 60^\circ, 75^\circ, 90^\circ$

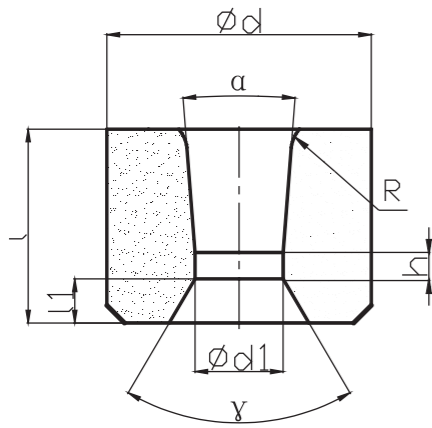


A2					
$\Phi D$	b	H	$\alpha$	$\beta$	$\gamma$
6~8	0.2	4~6	10°	40°	60°
6~8	0.4~0.8	4~6	40°	—	
8~22	0.4~5.7	6~20	10°~14°	40°	
8~26	0.4~8.0	6~16	16°	40°	
30~140	3.7~84	21~50	14°~20°	—	



A3					
$\Phi D$	$\Phi d$	H	$\alpha$	$\gamma$	R
16~110	2~60	14~52	3°	60°	40
16~110	20~62	35~45	4°		15~40
16~110	2.8~88	13~50	24°		3~10
16~110	20~70	32~55	—		30~40

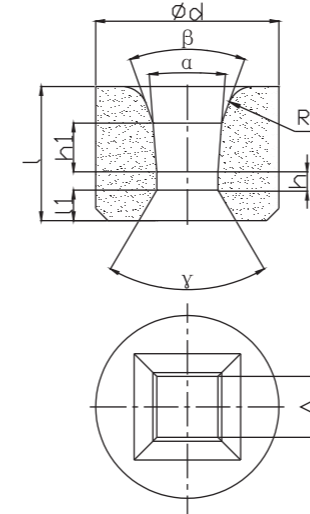
Type B



Type B				
d	l	d1	h	L1
9	6	0.1~1.5	0.1~1.0	0.6~1.2
12	8	0.2~2.0	0.8~1.5	0.8~1.2
15	10	1.0~4.0	1.2~1.8	1.0~1.5
20	14	1.0~6.0	1.6~3.0	1.0~1.8
25	20	1.2~8.0	2.0~3.5	1.0~3.5
30	16	3.0~14.0	2.0~4.5	1.2~3.5
	18	3.0~15.0	2.0~5.0	1.2~3.5
	21	3.5~18.0	2.0~5.0	1.2~3.5
	24	3.5~21.0	2.0~5.0	1.2~3.5
	30	4.0~25.0	2.0~5.0	1.6~5.0
35	18	9.5~18.0	2.0~5.5	1.2~3.5
	24	9.5~20.0	2.0~5.5	12.0~4.0
40	20	7.0~20.0	2.0~5.5	1.2~4.0
	24	7.0~24.0	2.0~5.5	2.0~5.0
45	24	10.0~25.0	2.5~6.0	2.0~5.0
50	24	15.0~28.0	2.5~7.0	2.0~5.5
55	2	16.0~30.0	3.0~7.5	2.0~5.5
60	30	20.0~34.0	3.0~8.0	2.0~6.5
	35	22.0~36.0	3.0~8.0	2.0~7.0
65	35	25.0~38.0	3.5~9.0	2.2~7.5
70	42	28.0~40.0	6.0~18.0	2.0~7.5
75	42	32.0~45.0	6.0~18.0	2.5~8.0
80	42	32.0~48.0	6.5~20.0	3.0~8.0
90	35	42.0~58.0	6.5~20.0	3.0~8.0
	42	48.0~60.0	6.5~20.0	3.0~8.5
100	35	46.0~58.0	6.5~20.0	3.0~8.5
	42	50.0~60.0	6.5~20.0	3.5~9.0
110	42	58.0~70.0	6.5~20.0	4.0~9.0
120	45	58.0~75.0	6.5~20.0	4.0~9.0
130	50	66.0~80.0	6.5~20.0	4.0~9.0
140	50	70.0~88.0	6.5~20.0	5.0~9.0

Note:  $\alpha = 8^\circ \sim 50^\circ$   
 $\gamma = 60^\circ, 75^\circ, 90^\circ$

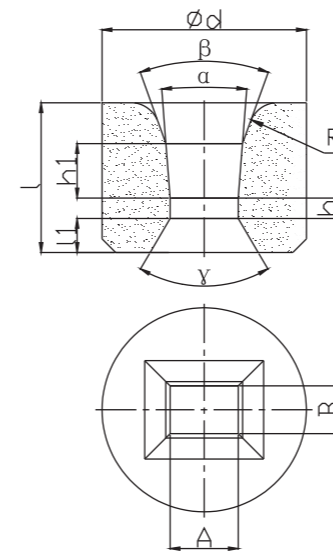
Type C



Type C					
d	l	A	h	h1	l1
16	12	1.5~2.5	0.5~1.5	4.0~6.0	1.0~2.0
22	18	2.0~4.0	1.0~2.0	5.5~9.0	1.5~2.5
30	21	3.5~7.0	1.5~2.5	8.0~12.0	1.5~2.5
35	25	6.5~10.0	2.5~3.5	10.0~14.0	2.0~4.0
45	25	8.0~15.0	3.0~4.0	10.0~14.0	2.0~4.0
50	28	12.0~20.0	3.5~4.5	12.0~16.0	2.0~4.0
60	30	18.0~25.0	4.0~5.5	12.0~16.0	3.0~5.0
65	32	22.0~30.0	5.0~7.0	12.0~16.0	4.0~6.0
70	35	26.0~35.0	6.0~9.0	14.0~18.0	5.0~7.0
80	35	30.0~40.0	6.0~9.0	14.0~18.0	5.0~7.0
90	40	35.0~45.0	6.0~9.0	14.0~18.0	5.0~7.0
100	40	40.0~50.0	6.0~9.0	14.0~18.0	5.0~7.0
120	45	45.0~55.0	6.0~9.0	14.0~18.0	5.0~7.0

Note:  $\alpha = 14^\circ, 16^\circ, 20^\circ$   
 $\beta = 40^\circ$   
 $\gamma = 60^\circ$

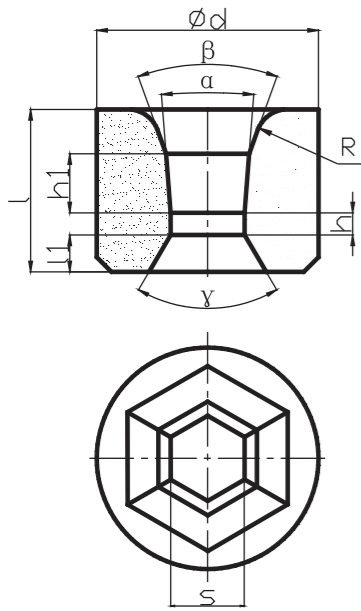
Type D



Type D						
d	l	A	B	h	h1	l1
20	12	1.5~3.5	0.5~1.5	1.5~2.5	3.0~5.0	1.5~2.5
22	12	3.0~5.0	0.5~2.0	1.5~2.5	3.0~5.0	1.5~2.5
25	15	3.5~7.0	0.5~4.0	2.0~3.0	4.0~6.0	2.0~3.0
32	16	5.0~9.0	0.5~4.0	2.0~3.0	4.0~6.0	2.0~3.0
35	18	7.0~12.0	1.0~6.0	2.0~3.0	5.0~8.0	2.0~3.0
	25	7.0~12.0	2.0~8.0	2.5~3.5	7.0~13.0	2.5~3.5
45	20	10.0~15.0	1.0~7.0	2.5~3.5	5.0~8.0	2.5~3.5
	25	10.0~15.0	4.0~10.0	3.0~4.0	7.0~14.0	2.5~3.5
50	20	12.0~24.0	1.0~8.0	2.5~3.5	5.0~9.0	2.5~3.5
	28	12.0~24.0	6.0~16.0	3.0~4.0	8.0~15.0	2.5~3.5
60	20	18.0~32.0	1.0~9.0	2.5~4.0	5.0~10.0	2.5~3.5
	30	18.0~32.0	7.0~16.0	4.0~6.0	8.0~16.0	3.0~5.0

Note:  $\alpha = 14^\circ, 18^\circ$   
 $\beta = 40^\circ, 60^\circ$   
 $\gamma = 60^\circ$

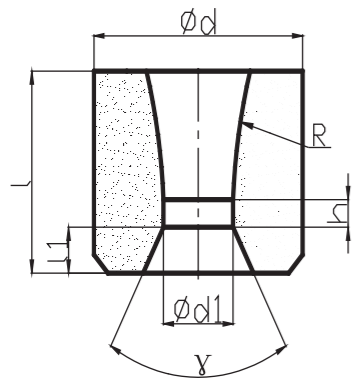
**Type E**



Type E					
d	l	S	h	h1	l1
30	21	2.0~8.0	1.0~2.0	8.5~11.5	1.5~2.5
35	21	6.0~12.0	1.5~2.5	9.5~13.0	2.5~3.5
40	25	8.0~14.0	2.0~3.0	11.0~15.0	2.5~3.5
43	24	10.0~16.0	2.5~3.5	11.0~15.0	2.5~3.5
45	25	12.0~20.0	3.0~4.5	11.0~15.0	3.0~4.0
55	28	16.0~24.0	3.5~5.5	12.0~16.0	3.5~4.5
65	30	22.0~30.0	4.0~6.5	12.0~16.0	4.0~5.0
75	35	28.0~38.0	5.5~8.0	14.0~18.0	4.5~6.0
90	35	36.0~50.0	5.5~8.0	14.0~18.0	4.5~6.0
100	40	45.0~60.0	6.0~9.0	14.0~18.0	5.0~7.0
120	42	55.0~75.0	6.0~9.0	14.0~18.0	5.0~7.0

Note:  $\alpha = 14^\circ, 16^\circ, 23^\circ$   
 $\beta = 40^\circ$   
 $\gamma = 60^\circ$

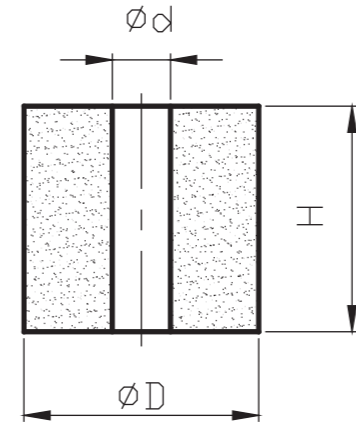
**Type F**



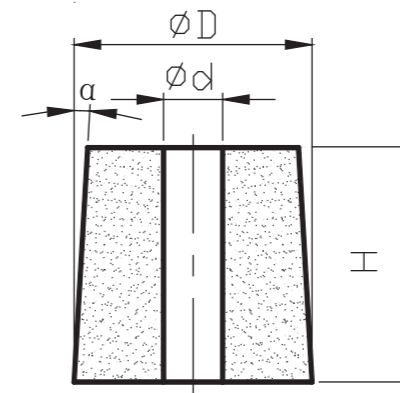
Type F					
d	l	d1	h	l1	R
30	18	10.0~18.0	5.0~10.0	1.0~2.0	30
50	32	16.0~24.0	9.0~14.0	1.5~2.5	30
60	35	22.0~30.0	9.0~14.0	1.5~2.5	30
70	42	28.0~36.0	12.0~18.0	2.0~3.0	35
75	42	34.0~42.0	12.0~18.0	2.0~3.0	35
85	45	40.0~48.0	12.0~18.0	2.5~3.5	40
100	50	46.0~56.0	16.0~22.0	2.5~3.5	40
110	50	54.0~64.0	16.0~22.0	2.5~3.5	40
125	55	62.0~72.0	18.0~25.0	2.5~3.5	40

Note:  $\gamma = 60^\circ$

◆ Stamping dies for standard fasteners



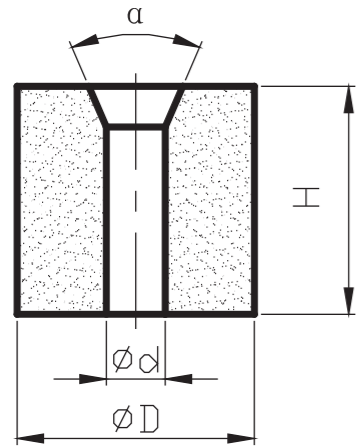
Type A		
D	d	H
10~44	1.5~6.0	20.0~60
32~50	6.2~10.0	32.0~60
40~40	11.4~15.0	20.0~60
40~50	15.4~20.0	20.0~75
45~70	21.0~25.0	20.0~85
55~75	26.0~30.0	25.0~40
75~90	30.5~38	30.0~40
80~100	42.0~50	30.0~50.0
90	52.0	40.0
100	60.0	40.0
100	61.5	20.0
120	70.0	40.0
130	80.0	40.0
140	85.0	40.0



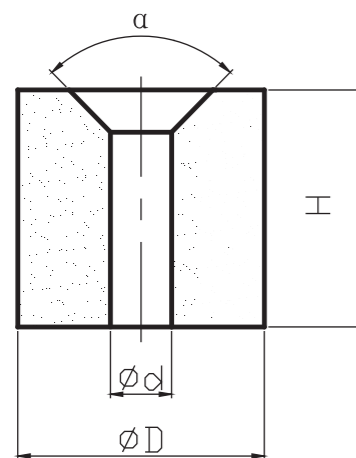
Type B			
d	D	H	$\alpha^\circ$
20	9.0	22	1° 30'
20	9.4	22	
21	10.4	20	
25	12.2	20	
30	12.5	22	
25	13.0	20	
30	13.0	22	
36	18.8	22	
36	19.2	22	
32	19.4	20	
40	22.0	22	
38	22.5	20	
40	22.5	22	
40	23.5	22	
38	23.9	20	
40	24.2	22	
47	28.8	20	
47	30.8	20	
46	31.2	22	
47	31.8	20	



Cold heading dies

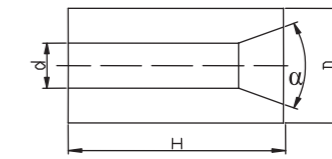
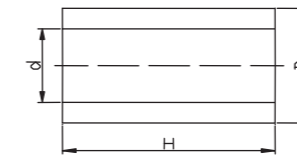


Type A							
D	d	H	α °	D	d	H	α °
14	2.1	15~30	20	30	8.4	25~54	20
16	2.1	15~30		30	10.0	14~20	
14	3.1	15~30		28	10.2	25~54	
16	3.1	15~30		30	10.2	25~54	
14	3.9	15~35		40	11.9	30~40	
16	3.9	15~35		40	12.0	10~14	
16	4.5	10~20		40	14.0	14~20	
16	4.7	15~35		45	17.5	14~20	
18	4.7	20~35		45	19.5	20~30	
20	6.5	20~42		50	21.0	20~30	
22	6.5	10~42		60	24.0	25~30	
30	8.0	10~20		60	26.5	25~30	
26	8.4	25~54	70	32.0	25~30		



Type B							
d	D	H	α °	d	D	H	α °
13	2.8	30	90	30	6.4	30	90
16	3.8	30		30	6.4	55	
16	3.8	40		36	8.2	55	
22	3.8	50		40	10.0	55	
16	4.6	30		45	10.0	55	
22	4.6	50		60	13.8	60	

Forming dies for powder metallurgy



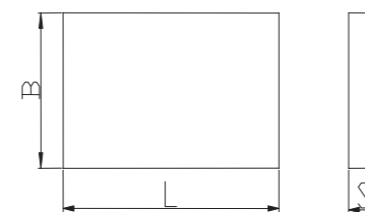
Plates

Type A



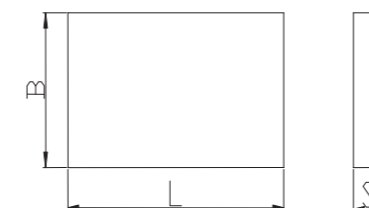
Size(mm)		
L	B	S
30.7	1~11	9.7
35.7	7~103	9.7

Type B



Size(mm)		
L	B	S
5~40	2.5~35	2~10

Type C



Size(mm)			
Spec	L	B	S
B01	100	50	5~50
B02	100	100	5~70
B03	120	120	5~45
B04	150	150	5~60
B05	180	180	5~70
B06	200	200	5~60