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**SLEEVES**

**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
 

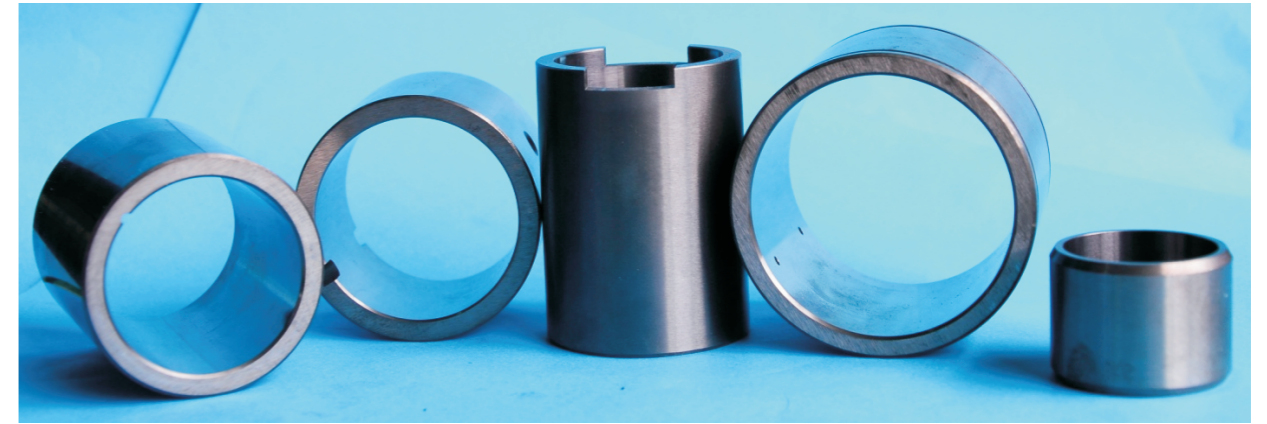
Coating with cemented carbide powder, welding with composite rods, spray welding and thermal spraying



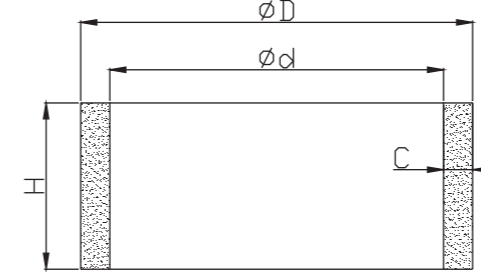
## Grades and properties

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	Wear-resistant
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	
Grade	Ni (wt %)	Density (g/cm <sup>3</sup> )	Hardness (HRA)	TRS (≥N/mm <sup>2</sup> )	Applications
KN100	6.5~7.5	14.5~14.8	88.5~91.0	1800	Corrosion-resistant
KN101	6.5~7.5	14.5~14.8	88.5~91.0	2200	
KN300	10.0~11.0	14.2~14.6	86.5~89.5	2100	
KN301	10.0~11.0	14.2~14.6	86.5~89.5	2400	
Grade	Co+Ni (wt %)	Density (g/cm <sup>3</sup> )	Hardness (HRA)	TRS (≥N/mm <sup>2</sup> )	
KCN30	9.5~10.5	14.0~14.5	88.0~90.0	2400	Corrosion-resistant
KCN31	9.5~10.5	14.0~14.5	88.0~90.0	3200	Wear-resistant

## Straight sleeves



Type A straight sleeves



Dimensions of Type A straight sleeves (mm)				
Spec	D	d	H	C
A1	14.5~20	12-16	6.0~10.0	1.3
A2	12.5	3.5~7.0	12.7	4.5
A3	21~60	15~50	51	3
A4	75~130	60~115	55~100	6
A5	140~300	120~260	60~150	10

## Sleeves

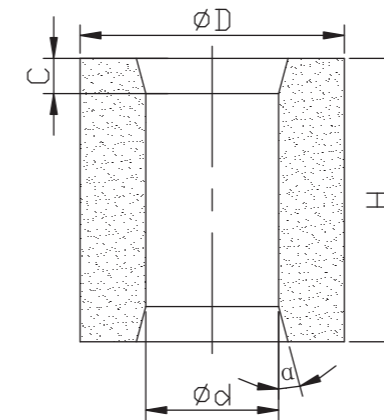
Used for water pumps, oil pumps, mud pumps and etc.

### Classification

- Straight sleeves
- T-Sleeves
- Mushroom sleeves



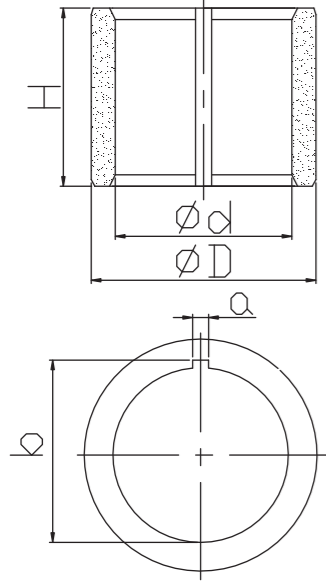
Type B straight sleeves



Dimensions of Type B straight sleeves (mm)			
D	d	C	H
25.0~30.0	9.0~14.0	2.0~3.5	21.0~25.0
31.0~50.0	14.0~35.0	2.0~3.5	21.0~25.0
60.0~100.0	47.0~85.0	2.0~3.5	30.0~70.0

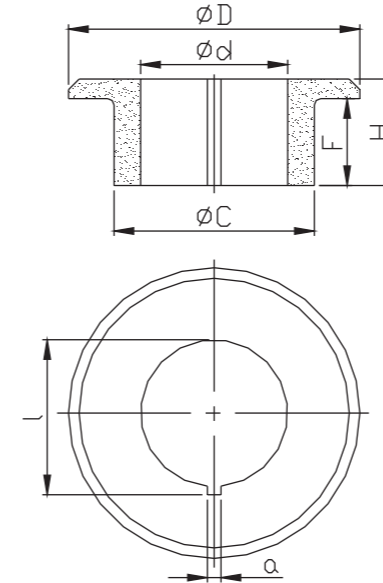


Type C straight sleeves



Dimensions of Type C straight sleeves (mm)			
D	d	H	a
20.0~40.0	17.0~30.0	10.0~36.0	1.6
41.0~80.0	31.0~70.0	10.0~36.0	3.2

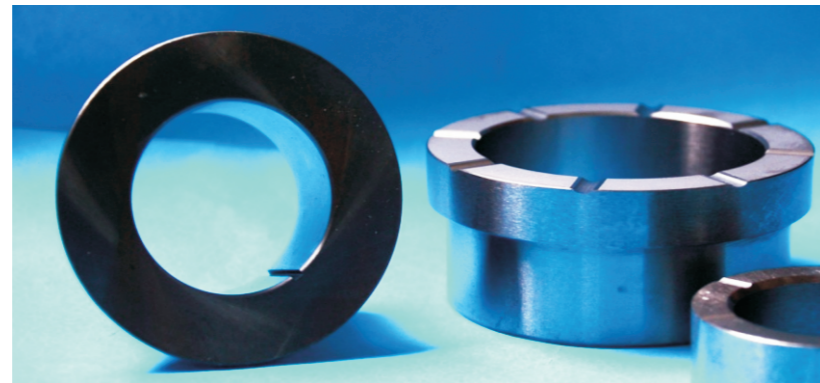
Type C T sleeves



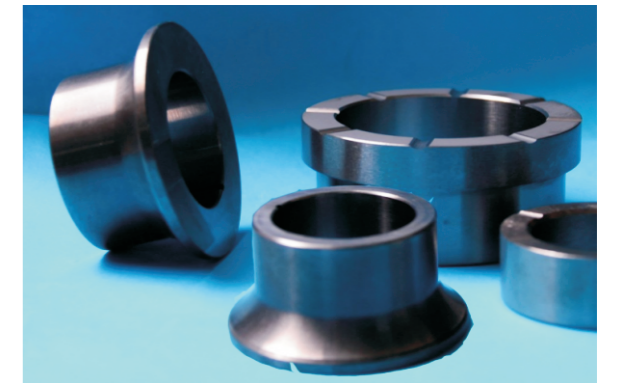
Dimensions of Type C T sleeves (mm)				
D	d	C	F	H
13.0~59.0	3.0~51.0	8.0~56.0	22.5	25.5
35.0~51.0	22.0~37.0	28.0~41.0	11.0~16.0	15.0~25.0

注: a=1.6、3.2

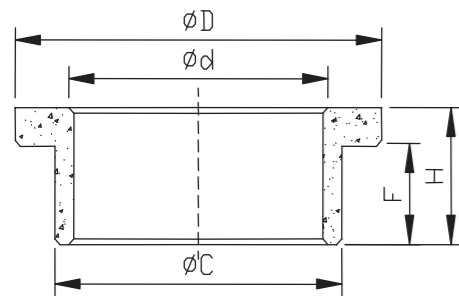
◆ T-Sleeves



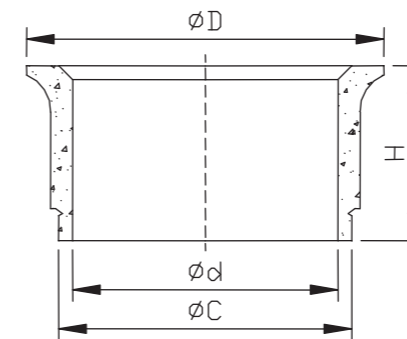
◆ Mushroom Sleeves



Type A T sleeves

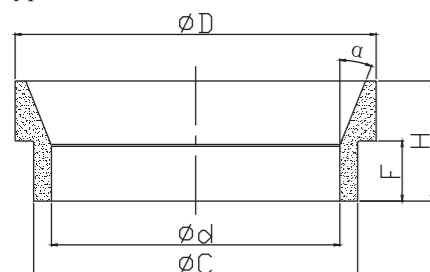


Dimensions of Type A T sleeves (mm)				
D	d	C	F	H
13.0~59.0	3.0~51.0	8.0~56.0	22.5	25.5
35.0~51.0	22.0~37.0	28.0~41.0	11.0~16.0	15.0~25.0



Dimensions of Mushroom sleeves (mm)			
D	d	C	H
13.0~59.0	3.0~51.0	8.0~56.0	25.5
35.0~51.0	22.0~37.0	28.0~41.0	15.0~25.0

Type B T sleeves



Dimensions of Type B T sleeves (mm)				
D	d	C	F	H
38.0~50.0	35.0~45.0	30.0~35.0	20.0~30.0	27.0~40.0
51.0~100.0	46.0~95.0	35.0~80.0	20.0~30.0	30.0~50.0

Technical parameter:

Surface roughness	Roundness ○ (mm)	Parallelism // (mm)	Perpendicularity ⊥ (mm)	Circularity ◎ (mm)	Runout ↗ (mm)	Total runout ↗↗ (mm)
3.2~0.1	≤0.01	≤0.01	≤0.01	≤0.025	≤0.025 mm	≤0.025 mm

Other processing: chamfer, end face R or rectangular radial grooves, pin holes for ex-circle rotation-prevention, oil holes, ex-circle axial rotation-prevention R or rectangular grooves.