

采掘工具用硬质合金

CEMENTED CARBIDE FOR MINING

CEMENTED CARBIDE

Твердосплавные вставки (зубки)

ООО "Инструмент поставка"

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厦门金鹭特种合金有限公司

Xiamen Golden Egret Special Alloy Co. Ltd





公司简介

Overview of GESAC



厦门金鹭特种合金有限公司，成立于1989年，是一家国家级高新技术企业，是国有上市公司厦门钨业的核心成员。主要从事钨粉、碳化钨粉、硬质合金、切削刀具等钨系列产品的生产与销售；是世界上最大的钨粉、碳化钨粉供应商和出口商；是高品质硬质合金及其精密切削工具的制造商。

公司在拥有高品质粉末的基础上引进世界一流的设备和技术大力发展矿山、油田钻探用硬质合金齿及凿岩工具用硬质合金制品。纵向一体化的生产模、优质的粉末、先进的技术设备和管理，使金鹭牌产品具有高耐磨和高韧性等特点，是油田、矿山、凿岩工具行业追求更高品质产品的有力保障。

Xiamen Golden Egret Special Alloy Co., Ltd. (GESAC) is a Sino-foreign joint venture company established in 1989. It is designated by the State as a high-tech enterprise. It's main products are tungsten metal powder, tungsten carbide powder, cemented carbide, cutting tools and other tungsten related products. GESAC is the largest producer and exporter of tungsten metal powder and tungsten carbide powder in China and also enjoys good reputation in manufacturing high quality cemented carbide and precision cutting tools.

Taking advantage of its superior quality of tungsten powders, GESAC has introduced world-class equipment and most advanced technology for carbide mining tips manufacture. The carbide mining tips made by GESAC have good wear resistance, high level of toughness, consistent quality and excellent performance thanks to the superior powder quality, modern manufacturing facilities and stringent quality management system. We have the ability to provide carbide products to world mining and oil drilling tools industry with a quality second to none.



高品质保证 | Quality Assurance

- ◆ 先进的生产技术和国际一流的生产线，主要生产设备包括高精密进口DORST和ALPHA自动压机以及ALD低压烧结炉。

Advanced technology and state-of-the-art equipment including high precision automatic presses, and ALD Sinter-HIP furnaces.



- ◆ 合金材质均匀、耐磨损耐腐蚀性好、抗冲击韧性高。广泛应用于油田、矿山、凿岩工具行业。

Uniform structure carbide with excellent resistance to extreme abrasion, corrosion wear and high impact resistance. Widely used for manufacture of mining and oil drilling tools.



- ◆ 金鹭公司已获得中国CQC和挪威DNV的ISO9001:2000的质量管理体系认证及ISO14001环境管理体系认证。

ISO9001:2000 quality management system certified and ISO14001 environmental management system certified by China CQC and Norway DNV.





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采掘工具用硬质合金牌号
Cemented Carbide Grades for Mining Tools

牌号 Grade	晶粒度 Grain Size	粘结相 Binder (%)	密度 Density (g/cm ³)	硬度 Hardness (HRA)	抗弯强度 TRS (MPa)	牌号描述 Grades Descriptions	应用领域 Application		
							凿岩钎具 Rock Drill	截齿 Conical Bits	石油开采 Oil Exploitation
GF20D	中 medium	6	14.85-15.05	90.2	2600	具有良好的耐磨性, 适用于各种规格冲击钻、潜孔钻及三牙轮钻头。 Can be used for making compacts of various percussion, DTH bits and tricone rock bits for drilling medium hard formation.	●		
GF20H	中 medium	6	14.90-15.00	1460(HV30)	2800	具有良好的耐磨性, 其耐磨性高于GF20D, 适用于各种规格冲击钻、潜孔钻及三牙轮钻头。 Can be used for making compacts of various percussion and DTH bits for drilling medium hard formation. It has higher abrasion resistance than GF20D.	●		
GF25D	中 medium	7.8	14.65-14.85	89.2	2900	具有良好的韧性, 韧性高于GF20D, 适用于各种规格冲击钻、潜孔钻及三牙轮钻头。 Can be used for making compacts of various percussion, DTH bits and tricone rock bits for drilling medium hard formation. It has higher toughness than GF20D.			●
GK30	细 fine	8	14.65-14.85	90	2900	耐磨性高于GF25D, 适用于中高级及潜孔钻头用齿, 凿进软硬交错的岩层。 Can be used for making compacts of various percussion and DTH bits for drilling interlaced soft & hard and interlayer formation. It has higher toughness than GF25D.	●		
GD20A	粗 coarse	9	14.50-14.70	86.5	2500	具有良好的韧性及抗热疲劳性能, 适用于采矿类截齿, 三牙轮钻头用齿。 Can be used for bits of mining and tunnel. It has excellent toughness and thermal fatigue property.	●		○
GD22B	中 medium	9.3	14.54-14.66	88.8	3000	适用于中韧性的需求的采矿, 石油开采作业, 主要用于牙轮钻头。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling.			●
GD25	中 medium	10	14.40-14.60	87.5	2850	适用于中露齿高度的牙轮钻头, 其韧性优于GD25A。 Can be used for making compacts of roller cone bits with medium cutter exposure. It has higher toughness than GD25A.			●
GD25A	中 medium	10	14.40-14.60	88.5	2900	适用于中韧性的需求的采矿作业, 主要用于牙轮钻头, 其耐磨性优于GD25。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling. It has higher abrasim resistance than GD25.			●
GD30A	中 medium	11	14.30-14.45	87.7	2900	韧性优于GD25A, 适用于中韧性的需求的采矿, 石油开采作业, 主要用于牙轮钻头用齿。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling. It has higher abrasim resistance than GD25A.	●		○

※ ● 推荐牌号 Recommended Grade ○ 次选牌号 Second Selection Grade



牌号 Grade	晶粒度 Grain Size	粘结相 Binder (%)	密度 Density (g/cm ³)	硬度 Hardness (HRA)	抗弯强度 TRS (MPa)	牌号描述 Grades Descriptions	应用领域 Application		
							凿岩钎具 Rock Drill	截齿 Conical Bits	石油开采 Oil Exploitation
GD40	中 medium	12	14.20-14.40	86.8	2800	具有良好的韧性及抗热疲劳性能, 适用于采矿类截齿和盾构刀头。 Can be used for bits and shield cutter of mining & tunnel. It has excellent toughness.		●	
GD40A	中 medium	13.8	14.09-14.21	87.4	2900	具有良好的韧性, 适用于石油开采类三牙轮钻头用齿。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling.			●
GD50	中 medium	14.6	14.00-14.12	85.8	2800	具有良好的韧性, 适用于石油开采类三牙轮钻头用齿。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling.			●
GD60C	粗 coarse	16	13.90-14.10	84.7	2700	具有良好的韧性, 适用于软岩层类、中长露齿高度的三牙轮钻头用齿。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling.			●
GD60A	中 medium	16	13.89-14.01	86.5	2900	具有良好的韧性, 适用于中韧性的需求的采矿、石油开采类三牙轮钻头用齿和聚晶金刚石复合片基片, 耐磨性高于GD60C。 Can be used in mining applications where moderate toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling and polycrystalline-diamond-composite-coated inserts. It has higher abrasion resistance than GD60C.			●
GD10S	超粗 Ultra Coarse	6	14.88-15.02	1180(HV30)	2400	具有良好的韧性及抗热疲劳性能, 耐磨性优于GD25S; 适用于采矿、隧道等截齿及挖路齿。 Can be used for bits of mining, tunnel and road digger. It has excellent toughness and thermal fatigue property. It has higher abrasion resistance than GD25S.	●	○	
GD15S	超粗 Ultra Coarse	7	14.70-14.90	87	2400	具有良好的韧性及抗热疲劳性能, 适用于采矿类截齿。 Can be used for bits of mining and tunnel. It has excellent toughness and thermal fatigue property.		●	
GD25S	超粗 Ultra Coarse	10	14.45-14.60	1000(HV30)	2400	具有良好的韧性及抗热疲劳性能, 适用于采矿、隧道类截齿和盾构刀头。 Can be used for bits and shield cutter of mining & tunnel. It has excellent toughness and thermal fatigue property.	●	○	
GD70S	超粗 Ultra Coarse	17.5	13.69-13.91	82.3	1900	具有优越的韧性和冲击性能, 适用于高韧性、高冲击韧性的石油开采类三牙轮钻头用齿。 Can be used in mining applications where higher toughness and impact toughness is required. Main applications include compacts of tricone rock bits for oil & gas drilling.			●

※ ● 推荐牌号 Recommended Grade ○ 次选牌号 Second Selection Grade



柱齿根据头部形状分为以下大类：

Buttons are divided into the following categories based on the shape of the top part

SB型——边楔齿	SB —— Wedge Crested Chisel Button
SD型——弹形齿	SD —— Ogive Button
SP型——平头齿	SP —— Flat Top Button
SQ型——球型齿	SQ —— Round Top Button
SS型——勺形齿	SS —— Scoop Button
SX型——楔形齿	SX —— Crested Chisel Button
SY型——翼形齿	SY —— Wing Tip Button
SZ型——锥形齿	SZ —— Conical Button

型号表示规则

Code key for types of buttons



尺寸公差标准

Tolerances

单位：mm

精品直径 Finished Diameter		毛坯直径 Blank Diameter		高度 Height	
标准尺寸 Standard	公差 Tolerance	标准尺寸 Standard	公差 Tolerance	标准尺寸 Standard	公差 Tolerance
0~10	± 0.003	0~10	+0.40 +0.20	0~10	± 0.10
10~25	± 0.004	10~15	+0.50 +0.20	10~15	± 0.15
25~30	± 0.005	15~25	+0.60 +0.20	15~25	± 0.20
		25~30	+0.65 +0.20	25~60	± 0.25

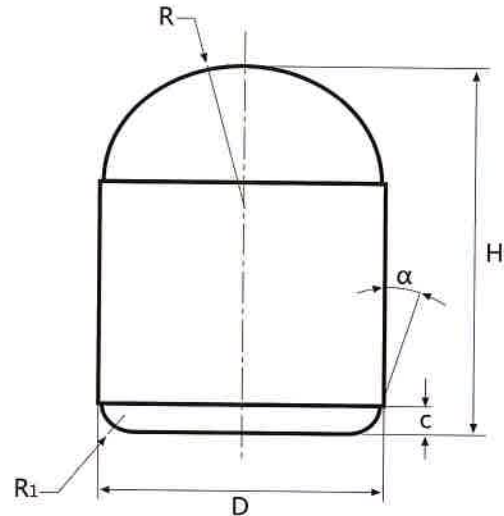


球形齿 Round Top Button

用于镶制凿岩冲击钻头、潜孔钻头及石油钻机用牙轮钻头，适用于非常硬岩层。

Round or ovoid shaped compacts used on hammer, DTH mining bits and roller cone bits for oil well drill, suitable for very hard formation.

SQ-1



球形齿型号规格表 Types and Dimensions of Round Top Button

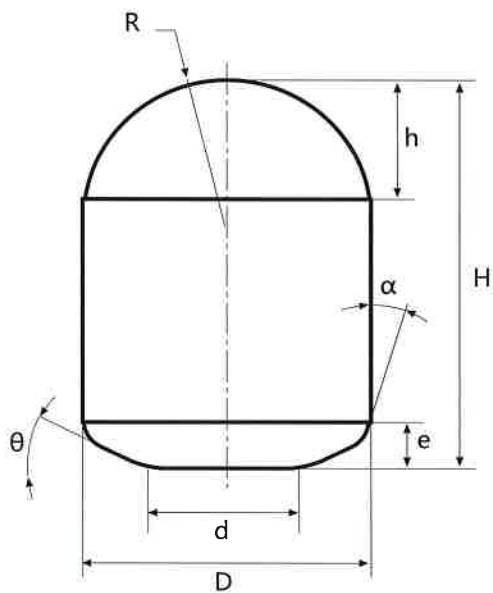
规格/Type	D		H	h	R	e	α
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension					
SQ10405	4.860	4.86 ^{+0.4} _{+0.2}	5.10	0.95	3.6	0.75	15°
SQ10605	6.468	6.47 ^{+0.4} _{+0.2}	5.25	0.70	7.7	1.25	15°
SQ10806	8.017	8.02 ^{+0.4} _{+0.2}	6.75	1.40	6.4	1.25	15°
SQ10909	9.585	9.59 ^{+0.4} _{+0.2}	9.53	3.36	5.1	1.50	18°
SQ11010	10.070	10.07 ^{+0.5} _{+0.2}	10.20	3.15	5.6	1.50	15°
SQ11108	11.190	11.19 ^{+0.5} _{+0.2}	10.05	1.42	11.7	1.25	15°
SQ11209	12.790	12.79 ^{+0.5} _{+0.2}	9.20	2.05	10.	1.25	15°
SQ11319	13.700	13.70 ^{+0.5} _{+0.2}	19.35	5.56	7.0	2.00	15°
SQ11422	14.300	14.30 ^{+0.5} _{+0.2}	22.35	5.70	7.3	2.00	15°
SQ11520	15.950	15.95 ^{+0.6} _{+0.2}	20.85	7.20	8.0	1.25	15°
SQ11625	16.700	16.70 ^{+0.6} _{+0.2}	25.40	6.55	8.6	2.00	15°
SQ11726	17.000	17.00 ^{+0.6} _{+0.2}	26.00	6.52	8.8	2.00	18°
SQ11825	18.000	18.00 ^{+0.6} _{+0.2}	25.00	7.29	9.2	2.00	18°
SQ11913	19.140	19.14 ^{+0.6} _{+0.2}	13.23	3.25	16.4	1.90	15°
SQ12528	25.475	25.47 ^{+0.6} _{+0.2}	28.37	10.59	13.0	1.90	15°

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements



SQ-2



球形齿型号规格表 Types and Dimensions of Round Top Button

规格/Type	D		H	h	R	e	α	θ
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SQ20810	8.030	8.030 $^{+0.4}_{-0.2}$	10.85	2.60	4.4	1.50	20°	20°
SQ20913	9.040	9.040 $^{+0.4}_{-0.2}$	13.00	3.40	4.7	1.80	20°	24°
SQ21013	10.045	10.045 $^{+0.4}_{-0.2}$	13.50	3.42	5.4	1.90	20°	24°
SQ21115	11.130	11.130 $^{+0.5}_{-0.2}$	15.50	4.5	5.7	2.15	25°	25°
SQ21216	12.045	12.045 $^{+0.5}_{-0.2}$	16.00	4.73	6.2	2.35	20°	24°
SQ21319	13.045	13.045 $^{+0.5}_{-0.2}$	19.00	5.17	6.7	2.45	20°	24°
SQ21420	14.050	14.050 $^{+0.5}_{-0.2}$	20.00	5.90	7.2	2.75	25°	20°
SQ21522	15.950	15.950 $^{+0.5}_{-0.2}$	22.25	5.76	8.4	2.65	15°	15°
SQ21623	16.150	16.150 $^{+0.6}_{-0.2}$	23.00	6.75	8.2	3.00	25°	20°
SQ21823	18.100	18.100 $^{+0.6}_{-0.2}$	23.00	7.55	9.2	3.30	25°	20°
SQ21925	19.070	19.070 $^{+0.6}_{-0.2}$	25.50	8.00	9.7	3.60	25°	20°
SQ22029	20.010	20.010 $^{+0.6}_{-0.2}$	29.00	8.20	10.3	3.70	25°	20°

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements

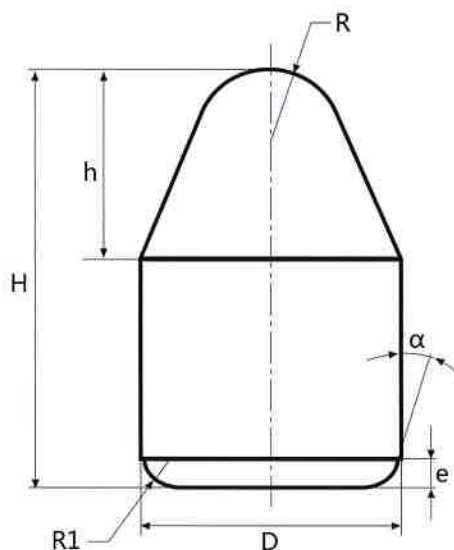


锥形齿 Conical Button

用于镶制凿岩冲击钻头，适用于硬岩层。

Conical compacts are used on hammer and DTH bits and roller cone drill bits, suitable for hard formations.

SZ-1



锥形齿型号规格表 Types and Dimensions of Conical Button

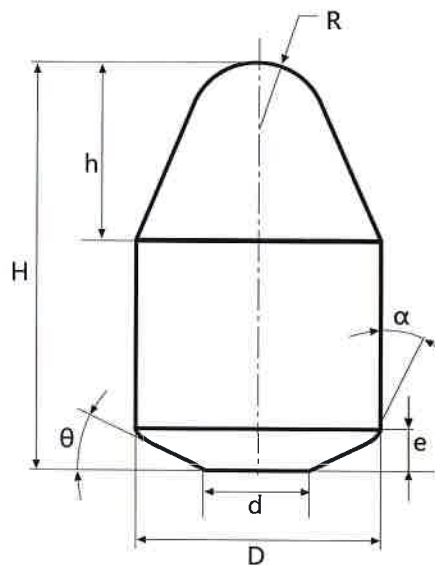
规格/Type	D		H	h	R	e	α
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension					
SZ10507	5.000	5.00 ^{+0.4} _{-0.2}	7.20	3.80	0.5	0.50	45°
SZ10809	8.035	8.04 ^{+0.4} _{-0.2}	9.40	4.05	2.9	1.25	15°
SZ10910	9.070	9.07 ^{+0.4} _{-0.2}	10.50	4.00	4.3	1.00	15°
SZ11012	10.070	10.07 ^{+0.5} _{-0.2}	12.90	5.30	4.0	1.30	15°
SZ11115	11.070	11.07 ^{+0.5} _{-0.2}	15.50	5.50	4.5	1.30	15°
SZ11214	12.070	12.07 ^{+0.5} _{-0.2}	14.50	6.00	5.3	1.30	15°
SZ11317	13.070	13.07 ^{+0.5} _{-0.2}	17.10	6.75	4.4	1.30	15°
SZ11420	14.335	14.34 ^{+0.5} _{-0.2}	20.60	9.50	4.3	1.25	15°
SZ11520	15.950	15.95 ^{+0.5} _{-0.2}	20.30	9.20	6.6	1.25	15°
SZ11826	18.200	18.20 ^{+0.5} _{-0.2}	26.50	10.70	2.0	1.00	45°
SZ11926	19.125	19.13 ^{+0.5} _{-0.2}	26.65	12.40	5.2	1.90	15°

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements



SZ-2



锥形齿型号规格表 Types and Dimensions of Conical Button

规格/Type	D		H	h	R	e	α	θ
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SZ20710	7.020	7.02 ^{+0.4} _{+0.2}	10.60	3.50	2.5	1.30	20°	20°
SZ20811	8.020	8.02 ^{+0.4} _{+0.2}	11.50	4.05	3.0	1.50	20°	20°
SZ20912	9.020	9.02 ^{+0.4} _{+0.2}	12.60	4.55	3.0	1.60	20°	20°
SZ21014	10.040	10.04 ^{+0.4} _{+0.2}	14.25	6.15	2.0	1.87	21°	24°
SZ21117	11.040	11.04 ^{+0.5} _{+0.2}	17.90	6.51	2.5	2.17	21°	24°
SZ21319	13.010	13.01 ^{+0.5} _{+0.2}	19.90	8.00	4.0	1.95	25°	20°
SZ21522	15.010	15.01 ^{+0.5} _{+0.2}	22.00	9.05	5.0	2.50	25°	20°
SZ22028	20.690	20.69 ^{+0.6} _{+0.2}	28.25	10.92	7.9	3.30	15°	20°
SZ22342	23.925	23.93 ^{+0.6} _{+0.2}	42.70	18.45	7.0	4.05	15°	20°
SZ22844	28.600	28.60 ^{+0.6} _{+0.2}	44.40	22.25	7.6	4.05	15°	20°

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements

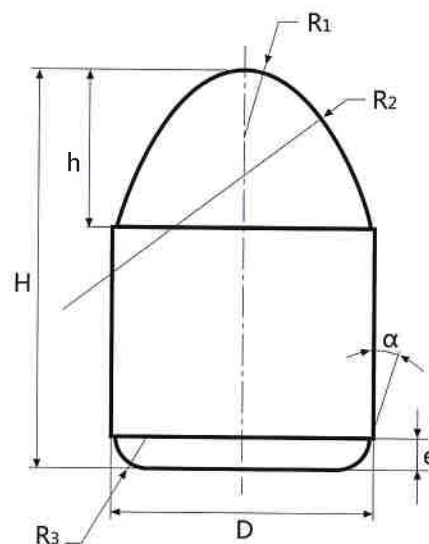


弹形齿 Ogive Button

用于镶制潜孔钻头及牙轮钻头，适用于中硬岩。

These parabolic, ballistic compacts are used in medium-hard formations on both roller and DTH bits.

SD-1



弹形齿型号规格表 Types and Dimensions of Ogive Button

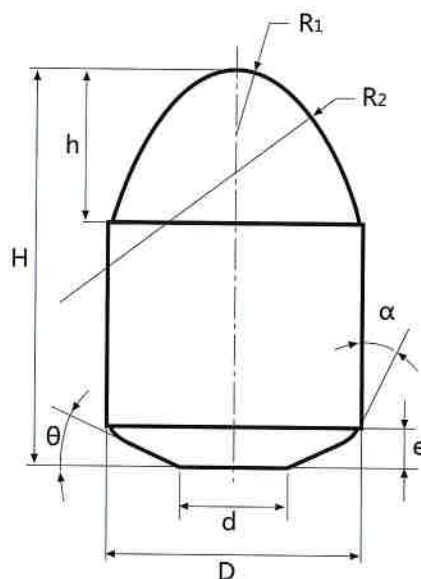
规格/Type	D		H	h	R ₁	R ₂	e	α
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SD10916	9.100	9.10 ^{+0.4} _{-0.2}	16.00	5.02	2.4	11.0	1.8	18°
SD11017	10.000	10.00 ^{+0.4} _{-0.2}	17.00	5.50	3.0	12.0	1.8	18°
SD11119	11.000	11.00 ^{+0.5} _{-0.2}	19.00	6.70	3.0	12.0	1.8	18°
SD11220	12.000	12.00 ^{+0.5} _{-0.2}	20.00	7.00	3.2	13.0	1.8	18°
SD11321	13.000	13.00 ^{+0.5} _{-0.2}	21.00	7.20	3.3	15.5	1.8	18°
SD11422	14.000	14.00 ^{+0.5} _{-0.2}	22.00	7.70	3.5	16.7	1.8	18°
SD11625	16.000	16.00 ^{+0.6} _{-0.2}	25.00	10.00	4.5	20.0	2.0	18°
SD11827	18.000	18.00 ^{+0.6} _{-0.2}	27.00	10.50	6.5	28.0	2.0	18°
SD12228	21.500	21.50 ^{+0.6} _{-0.2}	27.85	11.35	2.0	50.0	1.0	45°
SD12433	24.200	24.20 ^{+0.6} _{-0.2}	33.00	13.50	2.5	50.0	1.0	45°
SD12635	26.500	26.50 ^{+0.6} _{-0.2}	27.00	10.50	6.5	28.0	2.0	18°

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements



SD-2



弹形齿型号规格表 Types and Dimensions of Ogive Button

规格/Type	D		H	h	R ₁	R ₂	e	α
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SD20610	6.010	6.01 ^{+0.4} _{-0.2}	10.20	3.40	1.8	4.0	20°	20°
SD20709	7.050	7.05 ^{+0.4} _{-0.2}	9.80	3.90	1.9	8.5	25°	20°
SD20811	8.050	8.05 ^{+0.4} _{-0.2}	11.10	4.45	2.2	9.8	25°	20°
SD20911	9.100	9.10 ^{+0.4} _{-0.2}	11.45	5.00	2.4	11.0	25°	20°
SD21013	10.050	10.05 ^{+0.4} _{-0.2}	13.50	5.50	3.0	12.0	25°	20°
SD21118	11.045	11.05 ^{+0.5} _{-0.2}	18.00	6.80	3.0	12.0	21°	24°
SD21219	12.010	12.01 ^{+0.5} _{-0.2}	19.00	7.00	3.2	13.0	25°	20°
SD21320	13.010	13.01 ^{+0.5} _{-0.2}	20.00	7.20	3.3	15.5	25°	20°
SD21422	14.010	14.01 ^{+0.5} _{-0.2}	22.00	7.70	3.5	16.7	25°	20°
SD21626	16.010	16.01 ^{+0.5} _{-0.2}	26.00	11.00	4.7	44.5	25°	20°

注：可按客户要求规格生产

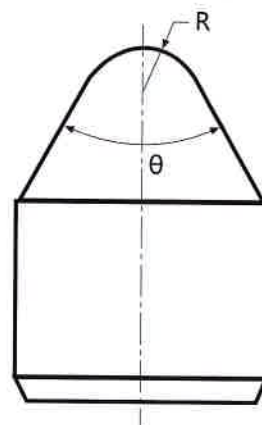
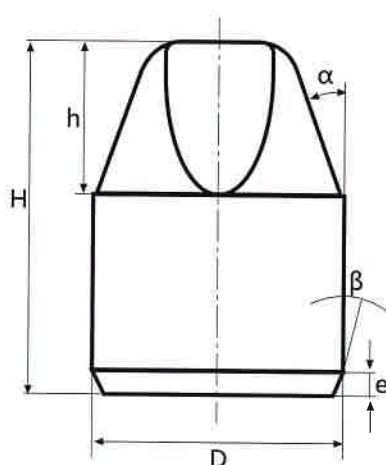
Note: Can be customized according to customer's requirements



楔形齿 Crested Chisel Button

用于镶制异形潜孔钻头、牙轮钻头，适用于高钻速、低断齿机率的软岩层。

Chisel compacts are on DTH bits and roller cone drill bits for soft formation where fast penetration rates are possible and tooth breakage is minimal.



楔形齿型号规格表 Types and Dimensions of Crested Chisel Button

规格/Type	D		H	h	α	θ	R	β
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SX10607	6.430	6.43 ^{+0.4} _{-0.2}	7.50	3.00	22°	80°	1.5	22°
SX10810	8.035	8.04 ^{+0.4} _{-0.2}	10.55	5.23	25°	59°	2.0	15°
SX10912	9.635	9.64 ^{+0.4} _{-0.2}	12.70	6.35	19.5°	63.5°	1.9	15°
SX11014	10.070	10.07 ^{+0.4} _{-0.2}	14.00	6.00	15°	80°	1.0	15°
SX11112	11.070	11.07 ^{+0.5} _{-0.2}	12.40	4.40	15°	91.5°	2.5	15°
SX11215	12.070	12.07 ^{+0.5} _{-0.2}	15.00	7.00	15°	90°	1.0	15°
SX11316	13.070	13.07 ^{+0.5} _{-0.2}	16.50	7.50	20°	62.7°	3.5	15°
SX11420	14.070	14.07 ^{+0.5} _{-0.2}	20.10	9.10	20°	58°	4.2	15°
SX11520	15.950	15.95 ^{+0.5} _{-0.2}	20.00	9.70	18°	72.5°	3.2	15°
SX11625	16.070	16.07 ^{+0.6} _{-0.2}	25.00	12.00	13°	52°	3.5	15°
SX11926	19.125	19.13 ^{+0.6} _{-0.2}	26.65	12.40	22°	64°	4.2	15°
SX12233	22.300	22.30 ^{+0.6} _{-0.2}	33.00	16.50	18°	55°	4.8	15°
SX12550	25.470	25.47 ^{+0.6} _{-0.2}	50.80	25.40	11°	47°	2.8	15°

注：可按客户要求规格生产

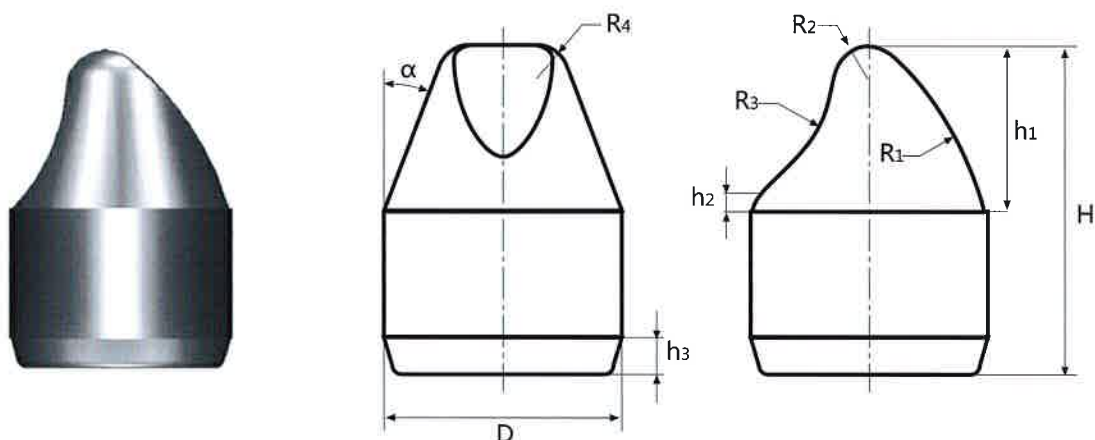
Note: Can be customized according to customer's requirements



勺形齿 Scoop Button

用于镶制牙轮钻头，适用于高速钻进的软岩层。

Scoop compacts are used on roller cone drill bits for soft formations where high penetration rates required.



勺形齿型号规格表 Types and Dimensions of Scoop Button

规格/Type	D		H	h	α	R ₁	R ₂	R ₃
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SS10911	9.070	9.07 $^{+0.1}_{-0.1}$	11.10	4.40	20°	10.0	3.0	20.0
SS11015	10.070	10.07 $^{+0.1}_{-0.1}$	15.20	5.20	25°	20.0	3.0	12.0
SS11116	11.070	11.07 $^{+0.1}_{-0.1}$	16.80	6.30	25°	24.0	3.0	15.0
SS11217	12.070	12.07 $^{+0.1}_{-0.1}$	17.00	6.50	25°	20.0	3.0	20.0
SS11318	13.070	13.07 $^{+0.1}_{-0.1}$	18.20	7.20	25°	6.0	3.6	28.0
SS11523	15.945	15.95 $^{+0.1}_{-0.1}$	23.00	9.95	20°	16.2	3.6	18.9
SS11929	19.135	19.14 $^{+0.1}_{-0.1}$	29.40	11.90	20°	16.1	2.8	22.5
SS12235	22.310	22.31 $^{+0.1}_{-0.1}$	35.30	15.90	15°	24.2	2.8	27.9

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements

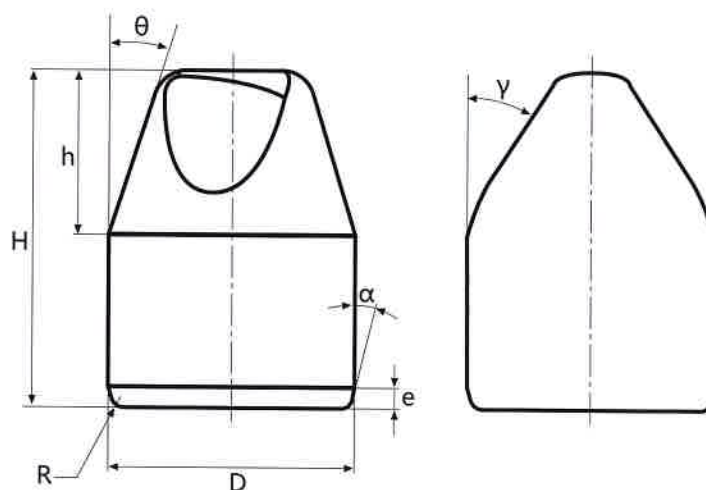


边楔齿 Wedge Crested Chisel Button

用于镶制牙轮钻头，适用于中硬和硬岩层。

Side wedged compacts are used on roller cone drill bits for medium-hard and hard rock formations.

SB-2



边楔齿型号规格表 Types and Dimensions of Wedge Crested Chisel Button

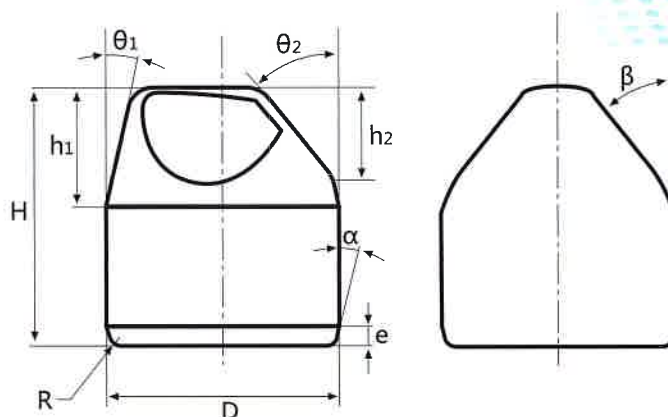
规格/Type	D		H	h	α	γ	θ	e
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SB21115	11.070	11.07 $^{+0.5}_{-0.2}$	15.30	5.30	20°	30°	15°	1.20
SB21317	13.070	13.07 $^{+0.5}_{-0.2}$	17.50	6.50	20°	32°	15°	1.20
SB21419	14.335	14.34 $^{+0.5}_{-0.2}$	19.85	9.50	20°	29°	15°	1.25
SB21521	15.950	15.95 $^{+0.5}_{-0.2}$	21.80	10.70	17.5°	32.9°	15°	1.25
SB21931	19.125	19.13 $^{+0.6}_{-0.2}$	31.90	15.25	15°	29°	15°	1.90
SB22026	20.070	20.07 $^{+0.6}_{-0.2}$	26.00	10.00	22°	36°	15°	1.70
SB22231	22.070	22.07 $^{+0.6}_{-0.2}$	31.00	13.00	20°	33°	15°	1.70

注：可按客户要求规格生产

Note: Can be customized according to customer's requirements



SB-4

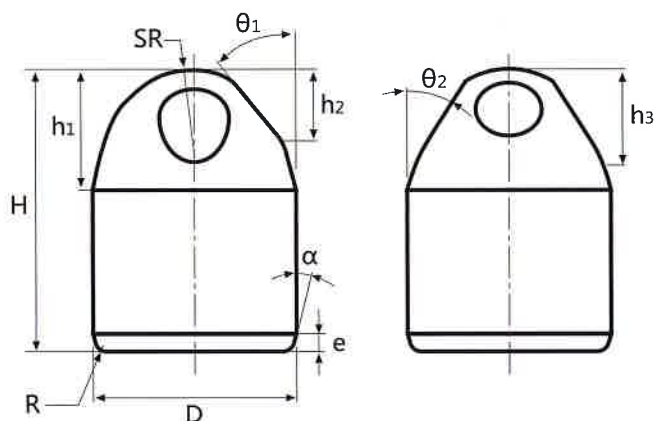


边楔齿型号规格表 Types and Dimensions of Wedge Crested Chisel Button

规格/Type	D		H	h ₁	θ_1	θ_2	β	e
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SB41416	14.335	14.34 $^{+0.5}_{+0.2}$	16.05	7.42	12°	40°	41°	1.25
SB41522	15.950	15.95 $^{+0.5}_{+0.2}$	22.20	9.50	15°	40°	39°	1.25
SB41620	16.070	16.07 $^{+0.5}_{+0.2}$	20.00	8.00	20°	39°	36°	1.70
SB42027	20.070	20.07 $^{+0.5}_{+0.2}$	27.00	12.00	20°	38°	33°	1.70

注：可按客户要求规格生产
Note: Can be customized according to customer's requirements

SB-6



边楔齿型号规格表 Types and Dimensions of Wedge Crested Chisel Button

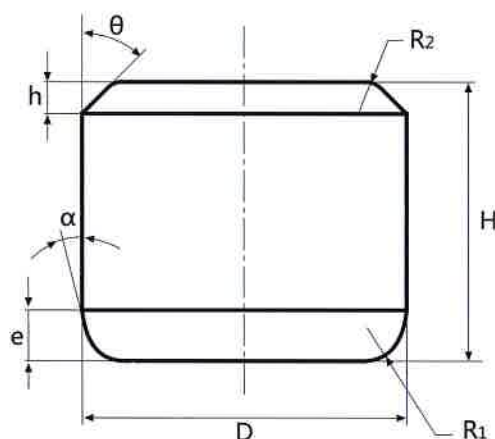
规格/Type	D		H	h ₁	SR	θ_1	θ_2	e
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension						
SB61115	11.210	11.21 $^{+0.5}_{+0.2}$	15.25	5.72	5.0	41°	42°	1.25
SB61216	12.810	12.81 $^{+0.5}_{+0.2}$	16.65	7.10	5.9	42°	42°	1.25
SB61416	14.335	14.34 $^{+0.5}_{+0.2}$	16.05	7.40	6.9	40.5°	33°	1.25
SB61522	15.950	15.95 $^{+0.5}_{+0.2}$	22.20	9.50	7.1	39.5°	30°	1.25
SB62231	22.300	22.30 $^{+0.5}_{+0.2}$	31.80	12.70	10.5	40°	29°	1.90

注：可按客户要求规格生产
Note: Can be customized according to customer's requirements

平头齿 Flat Top Button

适用于牙轮钻头、金刚石钻头、凿洞稳定器等，减少摩擦表面的磨损。

Flat compacts are used to reduce wear on rubbing surfaces found in roller cone drill bits ,diamond bits ,down-hole stabilizers ,and numerous other applications.



平头齿型号规格表 Types and Dimensions of Flat Top Button

规格/Type	D		H	h	θ	e	α
	精品尺寸 Finished Dimension	毛坯尺寸 Blank Dimension					
SP10404	4.860	4.86 ^{+0.4} _{-0.2}	4.20	0.50	45°	0.75	15°
SP10604	6.070	6.07 ^{+0.4} _{-0.2}	4.80	0.90	45°	1.00	15°
SP10805	8.017	8.02 ^{+0.4} _{-0.2}	5.00	0.50	45°	1.00	15°
SP10908	9.615	9.62 ^{+0.4} _{-0.2}	8.03	0.50	45°	1.27	15°
SP11008	10.070	10.07 ^{+0.5} _{-0.2}	8.00	1.20	45°	1.20	15°
SP11108	11.190	11.19 ^{+0.5} _{-0.2}	8.74	1.20	45°	1.15	15°
SP11210	12.070	12.07 ^{+0.5} _{-0.2}	10.00	1.20	45°	1.20	15°
SP11317	13.600	13.60 ^{+0.5} _{-0.2}	17.85	1.65	60°	1.65	60°
SP11510	15.950	15.95 ^{+0.5} _{-0.2}	10.55	0.50	45°	1.25	15°
SP11625	16.700	16.70 ^{+0.5} _{-0.2}	25.00	2.80	60°	2.80	60°
SP12519	25.475	25.47 ^{+0.5} _{-0.2}	19.05	0.80	45°	1.90	15°

注：可按客户要求规格生产

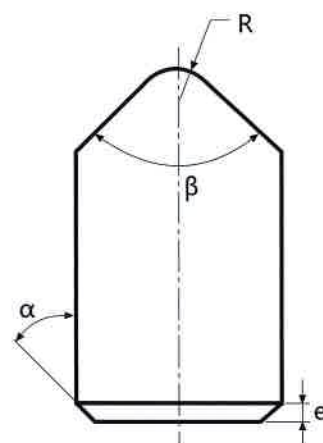
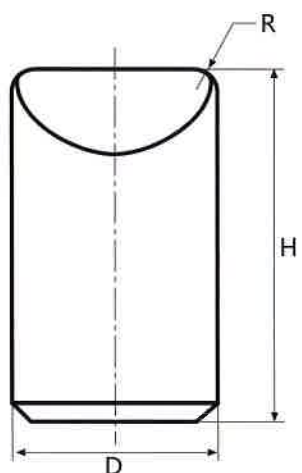
Note: Can be customized according to customer's requirements



翼形齿 Wing Tip Button

用于采矿作业中提高钻速，适用于中软岩层。

Wing Tip compacts are designed to raised the rate of penetration in drilling medium soft formation.



翼形齿型号规格表 Types and Dimensions of Wing Tip Button

规格/Type	D	H	β	R	e	α
K3009	9.10	17.00	75°	1.0	0.50	45°
K3010	10.50	18.15	90°	2.0	1.00	45°
K3016	16.35	25.10	90°	2.0	1.00	45°
K3019	19.35	30.15	90°	2.0	1.00	45°

注：可按客户要求规格生产

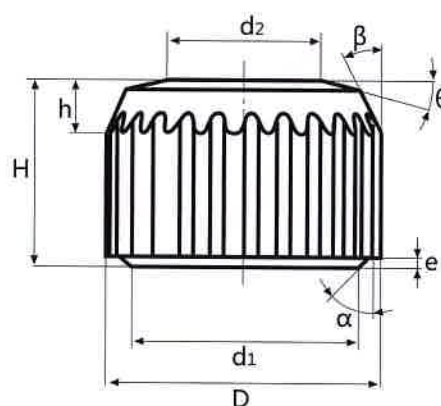
Note: Can be customized according to customer's requirements



锯形齿 Serrated Flat Top

用作低成本、低精度钻孔中防止钢体表面磨损的耐磨齿。

These compacts are used to prevent rubbing wear on steel surfaces and more economical for drill less precision holes.



锯形齿型号规格表 Types and Dimensions of Serrated Flat Top

规格/Type	D	H	h	d ₁	d ₂	α	β	θ
SU30606	6.55	6.05	1.15	4.80	2.55	45°	25°	15°
SU30807	8.17	7.45	1.90	6.10	3.80	45°	25°	15°
SU30908	9.75	8.03	1.90	7.37	5.30	45°	25°	15°
SU31208	12.95	8.85	2.55	10.87	7.15	45°	25°	15°
SU31409	14.95	9.53	3.60	12.70	7.15	45°	25°	15°

注：可按客户要求规格生产

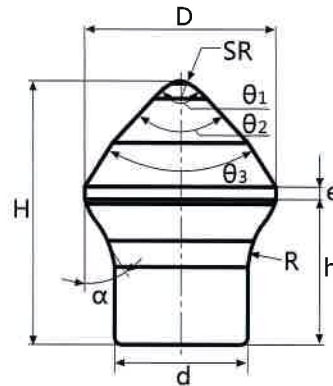
Note: Can be customized according to customer's requirements



截煤齿 Cap Carbide Tips for Mining

用于采矿作业中提高抗剪力和耐冲击性，适用于中软岩层。

These compacts are designed for increased impact and shear resistance, suitable for medium soft formation.



截煤齿型号规格表 Types and Dimensions of Cap Carbide Tips for Mining

规格/Type	D	H	d	h	SR	θ_3	α
SW61622	16.23	22.40	10.39	12.42	2.3	75°	30°
SW61828	18.90	28.85	12.22	14.10	1.8	90°	30°
SW62132	21.87	32.87	14.70	16.1	2.0	90°	30°
SW62434	24.92	34.22	17.25	18.50	2.0	100°	30°

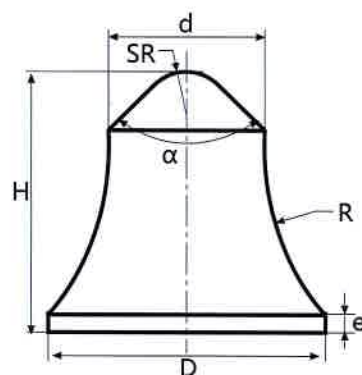
注：可按客户要求规格生产

Note: Can be customized according to customer's requirements

挖路齿 Cap Carbide Tips For Grading

适用于各种软硬沥青、混凝土等路面的修整作业。

These compacts are used in hard to soft asphalt and concrete road construction.



挖路齿型号规格表 Types and Dimensions of Cap Carbide Tips for Grading

规格/Type	D	H	d	SR	α	R	e
SW31716	17.78	16.70	10.00	3.0	90°	19.0	1.2
SW31817	18.90	17.70	11.00	3.0	90°	11.0	1.2
SW32020	20.00	20.50	11.00	3.0	90°	12.7	1.5

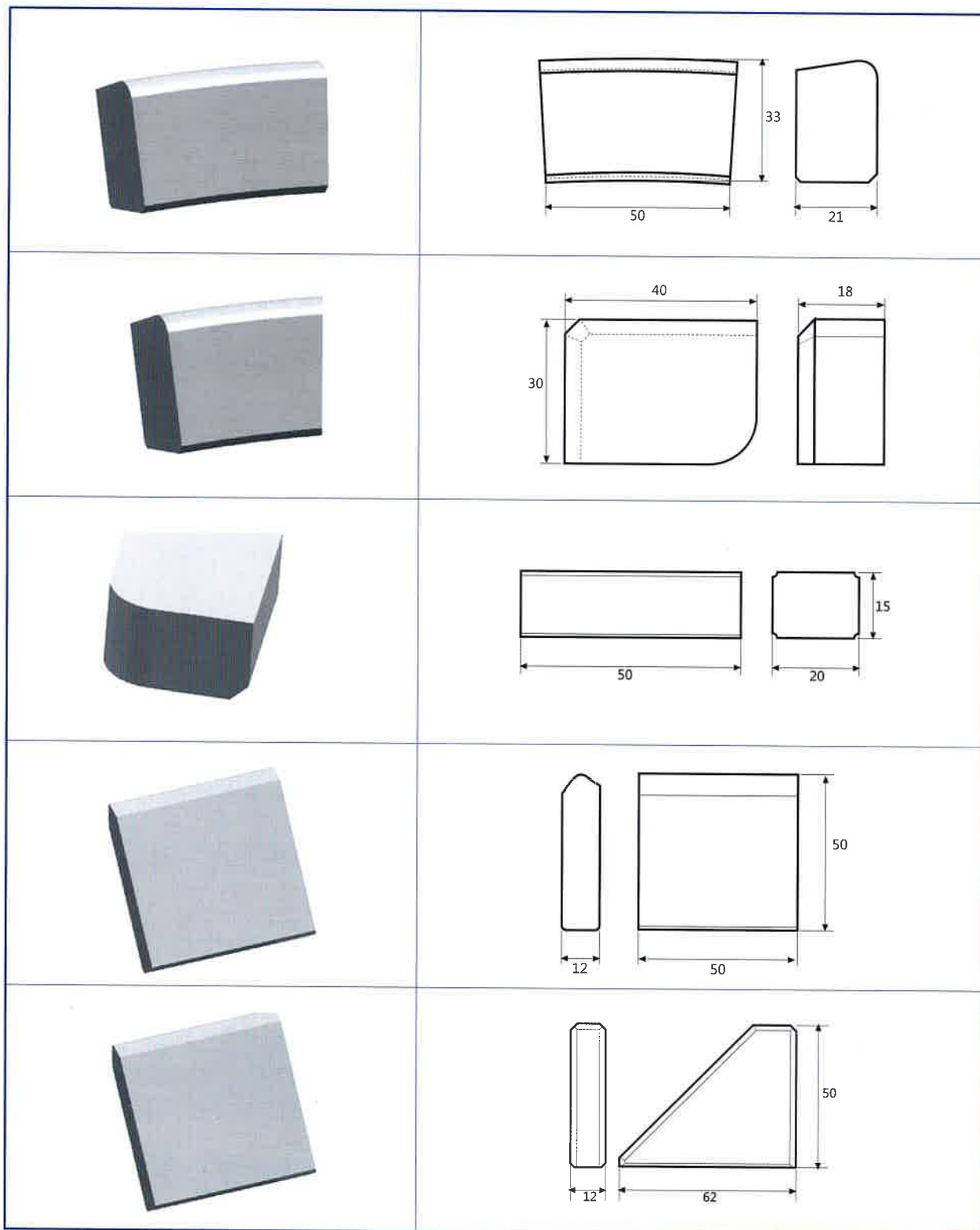
注：可按客户要求规格生产

Note: Can be customized according to customer's requirements



盾构合金 Cap Carbide Tips for Tunnel Borer

用于隧道盾构机中的焊接硬质合金刀片，适用于软岩层。盾构合金的形状以及各种型号、基本尺寸见下图。
Tunnel shield are used in tunnel boring machine and suitable for soft shapes. See the following figures for the shapes, types and dimensions of cap carbide tips.





附录 Appdenix

硬度换算表 Hardness Change

维氏 硬度 H V 荷重 (DPH)	布氏硬度 10mm球 荷重3000kg			洛氏硬度(3R)				洛氏薄片硬度(3R)			肖氏 硬度 HS	抗拉 强度 kg/mm ²	维氏 硬度 H V 荷重 50kg
	标准球	Hult Green 球	碳化 钨球	HRA 荷重60kg 金刚石	HRB 荷重100kg 1/6"球	HRC 荷重150kg 金刚石	HRd 荷重100kg 金刚石	15N 荷重 15kg	30N 荷重 30kg	45N 荷重 45kg			
1700	-	-	-	92.5	-	80.5	-	-	-	-	-	-	1700
1600	-	-	-	92.0	-	80.0	-	-	-	-	-	-	1600
1550	-	-	-	91.5	-	79.0	-	-	-	-	-	-	1550
1500	-	-	-	91.0	-	78.0	-	-	-	-	-	-	1500
1450	-	-	-	90.5	-	77.0	-	-	-	-	-	-	1450
1400	-	-	-	90.0	-	76.0	-	-	-	-	-	-	1400
1350	-	-	-	89.5	-	75.0	-	-	-	-	-	-	1350
1300	-	-	-	89.0	-	74.0	-	-	-	-	-	-	1300
1250	-	-	-	88.5	-	73.0	-	-	-	-	-	-	1250
1200	-	-	-	88.0	-	72.0	-	-	-	-	-	-	1200
1150	-	-	-	87.5	-	71.5	-	-	-	-	-	-	1150
1140	-	-	-	87.0	-	71.0	-	-	-	-	-	-	1140
1076	-	-	-	86.5	-	70.0	-	-	-	-	-	-	1076
1004	-	-	-	86.0	-	69.0	-	-	-	-	-	-	1004
940	-	-	-	85.6	-	68.0	76.9	93.2	84.4	75.4	97	-	940
920	-	-	-	85.3	-	67.5	76.5	93.0	84.0	74.8	96	-	920
900	-	-	-	85.0	-	67.0	76.1	92.9	83.6	74.2	95	-	900
880	-	-	767	84.7	-	66.4	75.7	92.7	83.1	73.6	93	-	880
860	-	-	757	84.4	-	65.9	75.3	92.5	82.7	73.1	92	-	860
840	-	-	745	84.1	-	65.3	74.8	92.3	82.2	72.2	91	-	840
820	-	-	733	83.8	-	64.7	74.3	92.1	81.7	71.8	90	-	820
800	-	-	722	83.4	-	64.0	73.8	91.8	81.1	71.0	88	-	800
780	-	-	710	83.0	-	63.3	73.3	91.5	80.4	70.2	87	-	780
760	-	-	698	82.6	-	62.5	72.6	91.2	79.7	69.4	86	-	760
740	-	-	684	82.2	-	61.8	72.1	91.0	79.1	68.6	84	-	740
720	-	-	670	81.8	-	61.0	71.5	90.7	78.4	67.7	83	-	720
700	-	615	656	81.3	-	60.1	70.8	90.3	77.6	66.7	81	-	700
690	-	610	647	81.1	-	59.7	70.5	90.1	77.2	66.2	81	-	690
680	-	603	638	80.8	-	59.2	70.1	89.8	76.8	65.7	80	232	680
670	-	597	630	80.6	-	58.8	69.8	89.7	76.4	65.3	79	228	670
660	-	590	620	80.3	-	58.3	69.4	89.5	75.9	64.7	79	224	660
650	-	585	611	80.0	-	57.8	69.0	89.2	75.5	64.1	-	221	650
640	-	578	601	79.8	-	57.3	68.7	89.0	75.1	63.5	77	217	640
630	-	571	591	79.5	-	56.8	68.3	88.8	74.6	63.0	-	214	630
620	-	564	582	79.2	-	56.3	67.9	88.5	74.2	62.4	75	210	620
610	-	557	573	78.9	-	55.7	67.5	88.2	73.6	61.7	-	207	610
600	-	550	564	78.6	-	55.2	67	88	73.2	61.2	74	203	600
590	-	542	554	78.4	-	54.7	66.7	87.8	72.7	60.5	-	200	590
580	-	535	545	78	-	54.1	66.2	87.5	72.1	59.9	72	196	580

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