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Geological Mining Tools

CEMENTED CARBIDE



Zhuzhou Weikeduo Cemented Carbide Co., LTD.

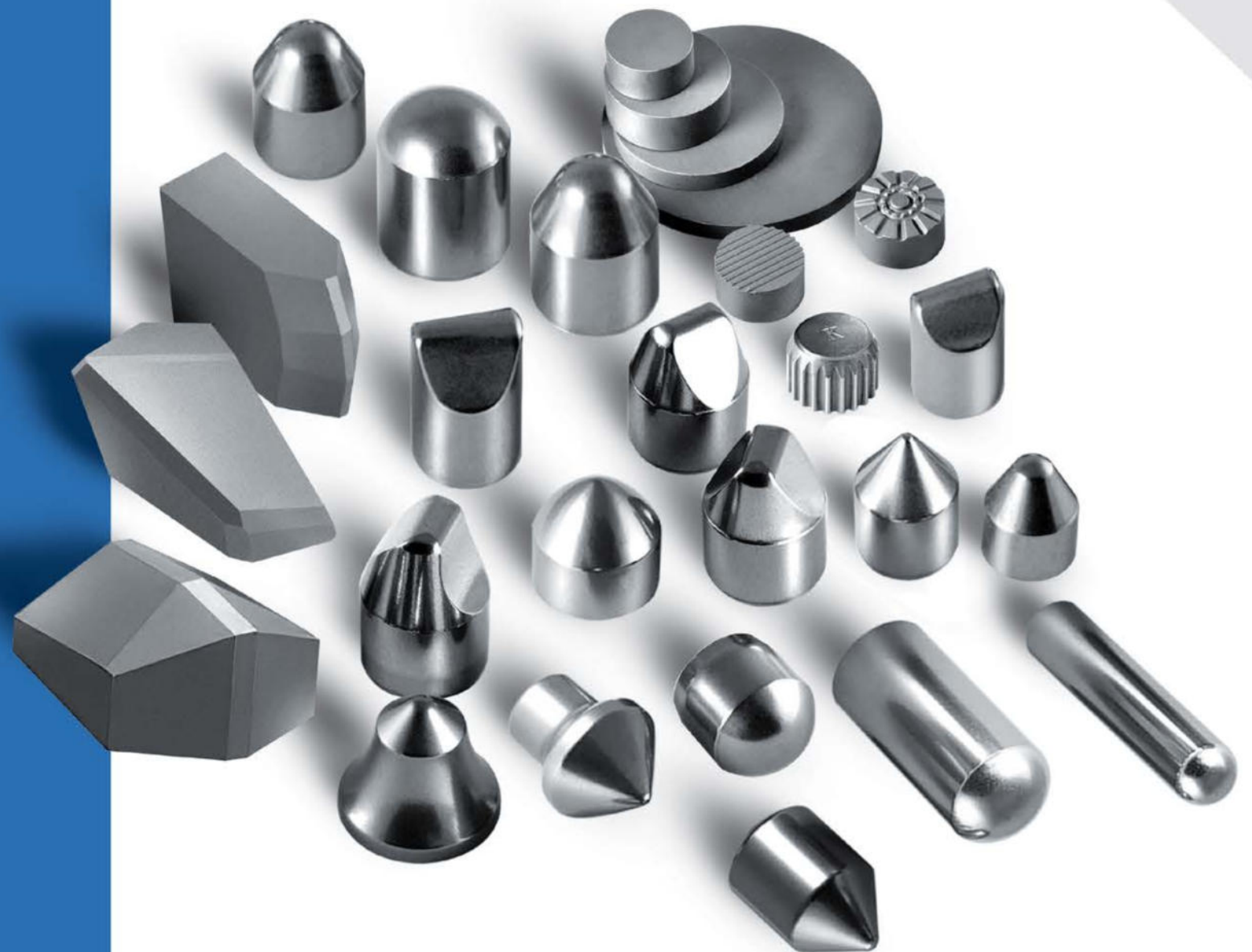
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Production Capacity

Weikeduo possesses high-precision mold production lines, automated and efficient inclinable ball mills and spray drying granulation system, fully automated TPA pressing and forming equipment, imported pressure sintering furnaces, as well as a constant temperature and humidity-controlled production environment. These highly specialized and automated production facilities fully ensure the stability of product quality and the efficiency of production.

We are dedicated to the R&D, production, and sales of cemented carbide for drilling and excavation. With a wide range of products and matured technology, it has now become a key strategic partner in fields such as oil fields, mining, engineering construction, and infrastructure development.



Research&Development Capacity

Weikeduo firmly believes in the power of technological innovation, and adheres to the talent philosophy of “ leading with talent, co-creating and sharing” . Over the years, we have independently built a high-level R&D talent team, earning the prestigious designation "Hunan Enterprise Technology Center" from the government *To* date, we have secured over 20 patents.

In the journey of exploring advanced hard materials, we have been recognized for several national recognitions such as “ National High-tech Enterprise”, “ National Torch Program” , “ National Little Giant Enterprise”.



- ① Scanning Electron Microscope
- ② Image Size Measuring Instrument
- ③ Rockwell Hardness Tester
- ④ Metallographic Microscope
- ⑤ Cobalt Magnetic Instrument,Magnetic Measuring Instrument
- ⑥ Laser Particle Size Distribution Instrument





Insert for Mining

Suitable for DTH, threaded and taper bits, etc.The quality is at the advanced level of the industry. Customized solutions can be provided based on the specific characteristics of the rock formation.



Grade	Cobalt (%) ±0.3	Density (g/cm3)±0.1	Hardness (HRA)±0.5	TRS(Mpa)	Recommended Application
VKD06V	6	14.97	90.5	3100	1. High air pressure DTH bits, threaded bits; 2. Suitable for hard rock formations.
VKD06L	6	14.95	90.2	3000	1. High air pressure DTH bits, threaded bits; 2. Suitable for medium and hard rock formations.
VKD06H	6	14.95	90.0	2800	1. High air pressure DTH bits, threaded bits; 2. Suitable for medium-soft rock formations.
VKD06	6	14.95	90.0	2600	1. Low air pressure DTH bits, taper bits; 2. Suitable for soft rock formations.
VKD07V	6.5	14.90	90.0	3000	1. Large diameter DTH bits; 2. Suitable for complex rock formation.
VKD07L	6.5	14.90	89.5	3000	1. Threaded bits that can be regrinding; 2. Especially suitable for hard or high impact power rock formation.
VKD30	8	14.75	88.5	2800	1. Welded DTH bits; 2. Suitable for complex medium-soft rock formation.



Insert for Picks

Suitable for rotary excavating, roadway excavation, coal mining and road milling, The quality is at the advanced level of the industry. Customized solutions can be provided based on the specific characteristics of the rock formation.



Grade	Cobalt (%)±0.3	Density (g/cm3)±0.1	Hardness (HRA) ±0.5	TRS(Mpa)	Grain size (µm)	Recommended Application
VKJ06	6	14.95	88.0	2600	3-5	1. Suitable for milling of asphalt pavement and mixed road milling; 2. It has good wear resistance, thermal fatigue resistance and impact toughness.
VKJ25V	6.5	14.90	86.0	2400	6-9	1. Suitable for coal mining and rotary excavating under complex working conditions; 2. Excellent impact performance and thermal fatigue resistance.
VKJ35L	8	14.75	85.5	2400	6-8	1. Suitable for roadway excavation and rotary excavating under complex working conditions; 2. Service life is further improved.
VKJ35V	8.5	14.70	85.5	2600	6-8	1. Suitable for coal mining and roadway excavation under complex working conditions; 2. Excellent impact performance and thermal fatigue resistance.
VKJ38H	9.5	14.55	85.5	2600	4-6	1. Suitable coal mining and roadway excavation under medium rock formation; 2. It has good impact toughness.

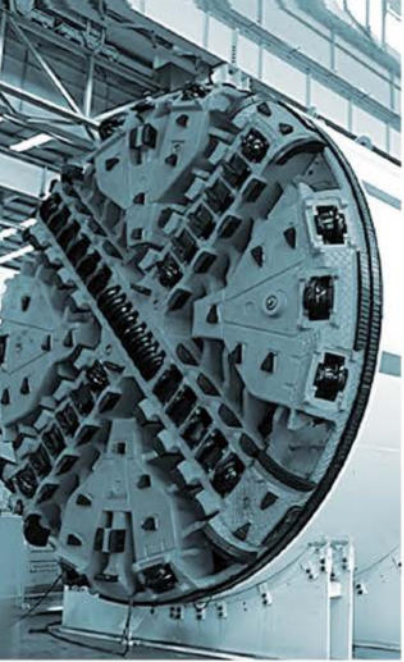


Super Hard Material Substrate

Suitable for oil & gas and mining PDC cutter and PCD cutting tools, The quality is at the advanced level of the industry.



Grade	Cobalt (%) ± 0.3	Density (g/cm3)±0.1	Hardness (HRA)±0.5	TRS(Mpa)	Recommended Application
YG10X	10	14.55	90.0	3100	Suitable for PCD cutting tool.
VFD40	11	14.45	88.0	3100	Suitable for PCD cutting tool.
VYD40X	11	14.45	89.0	3300	Suitable for the PDC Cutters for oil & gas exploitation.
VFD45	13	14.25	88.0	3100	Suitable for PCD cutting tool.
VYD45X	13	14.25	88.5	3400	Suitable for the PDC Cutters for oil & gas exploitation.
VKD60	16	13.95	85.5	2800	Suitable for PDC cutter for geological exploration, mine drilling.
VYD60X	16	13.95	86.5	3000	Suitable for PDC cutter for geological exploration, mine drilling.



Insert for Construction

Suitable for mining tricone bits, roller cutters, disc cutters, HPGR and excavation, The quality is at the advanced level of the industry. Customized solutions can be provided based on the specific characteristics of the rock formation.



Grade	Cobalt (%) ±0.3	Density (g/cm3)±0.1	Hardness (HRA)±0.5	TRS(Mpa)	Recommended Application
VKD30	8	14.75	88.5	2800	1. Applicable for gauge protection inserts, and serrated inserts, as well as wear-resistant components used in geological exploration core bits, oil well bits, drag bits, TC bearings, and rock drilling stabilizers.
VKD38Y	10	14.50	88.0	3000	1. Mining tricone bits; 2. Suitable for drilling in medium-hard rock formations or non-ferrous metal mines.
VKD38	10	14.50	87.5	2900	1. Mining tricone bits and roller cutters; 2. Suitable for medium-hard rock formations.
VKD40Y	11	14.40	87.5	3000	1. Mining tricone bits; 2. Suitable for medium-hard or hard rock formations.
VKD40	11	14.40	87.0	2900	1. Mining tricone bits and roller cutters; 2. Suitable for softer or medium-hard rock formations.
VKD45	13	14.25	86.5	2900	1. Roller cutters; 2. Suitable for rock formations with medium corrosion resistance and compressive strength.
VKD50	15	14.00	85.5	2900	1. Suitable for wear-resistant components in various working conditions and used in different types of shield tunneling cutter tools.
VYD60	16	13.95	86.5	3100	1. Roller cutters; 2. Suitable for medium-hard or hard rock formations.
YG16C	16	13.95	84.5	2600	1. Roller cutters; 2. Suitable for hard or extremely hard rock formations with high compressive strength.



Insert for Oil & Gas Tricone Bit

Suitable for oil & gas tricone bits,The quality is at the advanced level of the industry. Customized solutions can be provided based on the specific characteristics of the rock formation.



Grade	Cobalt (%)±0.3	Density (g/cm3)±0.1	Hardness (HRA)±0.5	TRS(Mpa)	Recommended Application
VYD38	10	14.50	88.5	3100	1. Oilfield tricone bits; 2. Suitable for hard or extremely hard rock formations.
VKD38	10	14.50	87.5	2900	1. Oilfield tricone bits; 2. Suitable for hard rock formations.
VKD40	11	14.40	87.0	2900	1. Oilfield tricone bits; 2. Suitable for softer or medium-hard rock formations.
VYD40	11	14.40	87.5	2900	1. Oilfield tricone bits; 2. Suitable for medium-hard or hard rock formations.
VYD45	13	14.25	87.5	3100	1. Oilfield tricone bits; 2. Suitable for medium-hard or hard rock formations.
VKD50	15	14.00	85.5	2900	1. Oilfield tricone bits; 2. Suitable for medium-hard or hard rock formations.
VYD60	16	13.95	86.5	3100	1. Oilfield tricone bits; 2. Suitable for hard or more complex rock formations.

Spherical Inserts



Dimension: mm

Type	D	H	h	R
SQ072100	7.20	10.0	2.80	3.70
SQ080870	8.20	8.7	2.60	4.35
SQ082120	8.20	12.0	3.50	4.06
SQ096117	9.60	11.7	3.91	4.90
SQ092130	9.20	13.0	3.70	4.60
SQ100150	10.20	15.0	4.07	5.15
SQ112165	11.20	16.5	5.10	5.51
SQ122180	12.20	18.0	5.20	6.04
SQ132190	13.18	19.0	5.34	6.65
SQ142210	14.18	21.0	5.70	7.20
SQ162230	16.18	23.0	6.30	8.20
SQ192270	19.18	27.0	8.00	7.94
SQ202280	20.18	28.0	8.64	10.12
SQ222300	22.20	30.0	9.20	11.21
SQ243350	24.30	35.0	10.39	12.23
SQ255350	25.50	35.0	10.35	12.88

Note: The dimensions and shape can be customized according to the customer's requirements.

Conical Inserts



Dimension: mm

Type	D	H	h	R	a
SZ072110	7.20	11.0	3.24	3.00	30.0
SZ082115	8.15	11.5	4.21	3.00	28.8
SZ093145	9.31	14.5	5.65	3.50	21.0
SZ103165	10.30	16.5	5.54	2.50	30.8
SZ112160	11.20	16.0	6.10	4.00	27.5
SZ122190	12.20	19.0	9.76	2.38	25.0
SZ132180	13.20	18.0	7.14	4.50	28.0
SZ142210	14.18	21.0	7.70	5.00	27.5
SZ152220	15.20	21.0	9.30	5.00	25.0
SZ162250	16.18	25.0	8.81	6.00	26.0
SZ182280	18.20	28.0	10.14	6.00	27.5
SZ193280	19.37	28.0	13.00	6.20	22.5
SZ223296	22.30	29.6	12.60	9.50	18.5

Note: The dimensions and shape can be customized according to the customer's requirements.

Parabolic Inserts

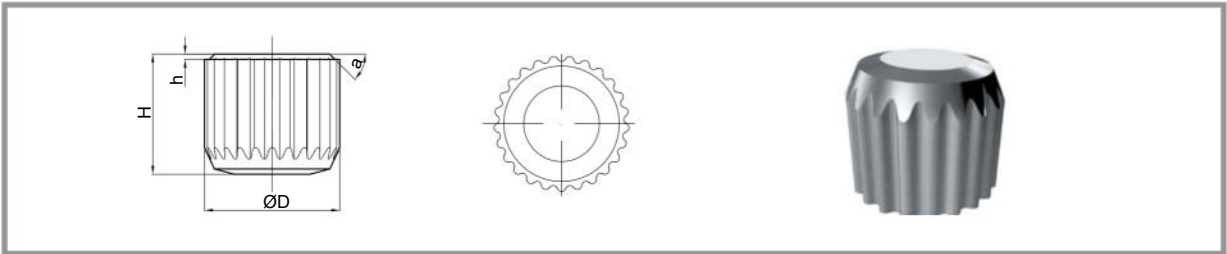


Dimension: mm

Type	D	H	h	R1	R2
SD072110	7.20	11.0	3.93	1.91	8.65
SD082120	8.20	12.0	4.30	2.25	8.00
SD092130	9.20	13.0	5.00	3.20	8.70
SD103139	10.30	13.9	5.55	3.60	9.50
SD112160	11.20	16.0	5.75	2.75	11.00
SD122181	12.20	18.1	6.02	3.00	12.00
SD132190	13.18	19.0	5.57	3.25	13.00
SD142220	14.25	22.0	9.00	4.00	14.00
SD162230	16.18	23.0	8.64	5.92	16.00
SD182270	18.20	27.0	11.49	4.00	43.00
SD202290	20.20	29.0	11.00	5.00	18.00

Note: The dimensions and shape can be customized according to the customer's requirements.

Serrated Inserts



Dimension: mm

Type	D	H	h	a
SP065048	6.50	4.80	1.10	15°
SP082065	8.20	6.50	1.90	25°
SP098080	9.80	8.00	1.90	25°
SP113088	11.27	8.40	2.54	15°
SP128088	12.83	8.84	2.54	15°
SP149095	14.94	9.52	3.60	18°

Note: The dimensions and shape can be customized according to the customer's requirements.

Flat Inserts



Dimension: mm

Type	D	H	h	a
SP041046	4.10	4.60	0.80	45°
SP050047	5.00	4.70	1.17	45°
SP064059	6.42	5.94	1.17	45°
SP080080	8.00	8.00	1.17	45°
SP096083	9.60	8.33	1.17	45°
SP114100	11.44	10.00	1.27	45°
SP122100	12.22	10.00	1.00	45°
SP143120	14.50	12.00	1.20	45°
SP160150	16.00	15.00	1.50	18°
SP204150	20.37	15.00	2.50	45°

Note: The dimensions and shape can be customized according to the customer's requirements.

Chisel Inserts

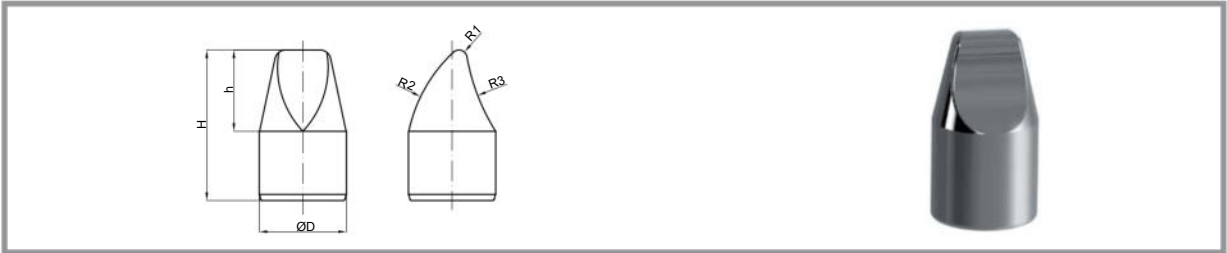


Dimension: mm

Type	D	H	h	R
SX050067	5.000	6.73	2.13	0.89
SX072101	7.215	10.07	4.50	2.00
SX080116	8.009	11.56	5.08	1.57
SX096132	9.596	13.23	4.42	0.89
SX112157	11.184	15.27	5.52	0.89
SX128174	12.771	17.41	7.09	2.39
SX131171	13.100	17.08	6.75	2.75
SX143190	14.359	19.00	9.00	2.75
SX159215	15.946	21.49	7.59	0.89
SX175273	17.544	27.34	11.13	3.96
SX191333	19.134	33.32	13.71	5.16
SX223233	22.309	23.27	10.42	4.91
SX255299	25.484	29.87	12.20	5.00
SX301470	30.084	47.00	19.00	6.00
SX321520	32.084	52.00	22.00	6.00

Note: The dimensions and shape can be customized according to the customer's requirements.

Spoon Inserts

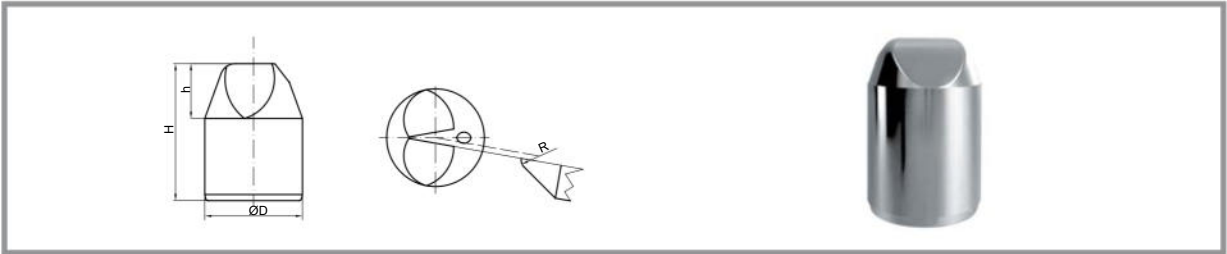


Dimension: mm

Type	D	H	h	R1	R2	R3
SS080122	8.009	12.18	5.50	1.27	8.10	19.50
SS096133	9.596	13.28	5.13	2.77	4.01	11.23
SS104125	10.400	12.50	5.50	2.00	18.00	18.00
SS112149	11.184	14.92	6.75	1.98	7.32	23.31
SS143206	14.359	20.65	9.22	2.39	10.85	16.64
SS159239	15.946	23.87	9.93	3.58	16.15	18.90
SS175282	17.544	28.18	11.93	2.39	15.28	22.46
SS191294	19.134	29.45	11.93	2.39	14.06	20.18
SS223333	22.309	33.34	14.30	2.77	19.12	22.77
SS255434	25.484	43.37	18.00	3.00	29.45	30.31
SS281455	28.084	45.50	21.00	2.5	36.14	36.62
SS301475	30.084	47.50	23.00	2.75	44.59	44.75

Note: The dimensions and shape can be customized according to the customer's requirements.

Side Wedged Inserts

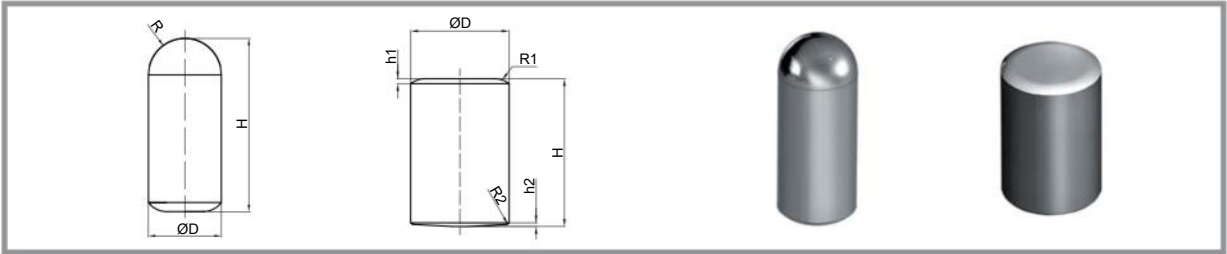


Dimension: mm

Type	D	H	h	R
BX077101	7.660	10.05	2.13	2.68
BX084108	8.370	10.80	4.00	2.00
BX096119	9.596	11.89	4.40	3.96
BX104140	10.400	14.00	2.00	2.36
BX112150	11.184	14.99	5.11	2.39
BX127174	12.771	17.42	5.74	3.58
BX134175	13.370	17.50	6.50	4.50
BX143191	14.359	19.07	5.77	3.96
BX159215	15.946	21.49	7.19	4.78
BX191270	19.134	27.05	10.08	3.18
BX255389	25.484	38.88	15.28	3.18
BX281380	28.084	38.00	15.00	3.18
BX321450	32.084	45.00	18.00	3.18

Note: The dimensions and shape can be customized according to the customer's requirements.

Studs for HPGR

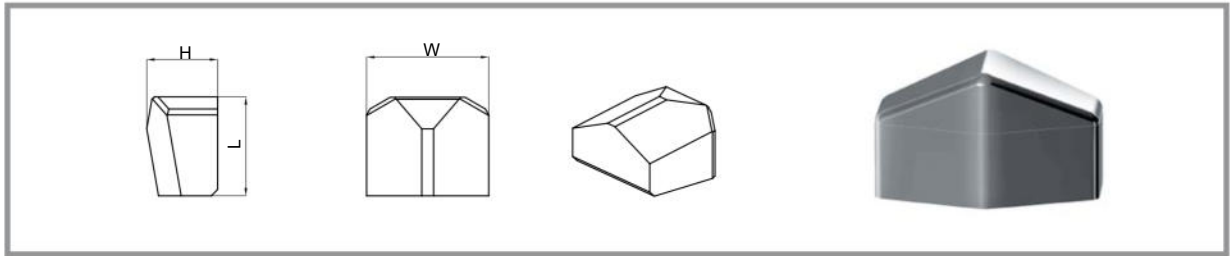


Dimension: mm

Shape	D	H	R
Spherical	10	25/30/35/40/50/60	5
	16	25/30/35/40/50/60	8
	20	25/30/35/40/50/60	10
Flat	10	25/30/35/40/50/60	
	16	25/30/35/40/50/60	
	20	25/30/35/40/50/60	

Note: The dimensions and shape can be customized according to the customer's requirements.

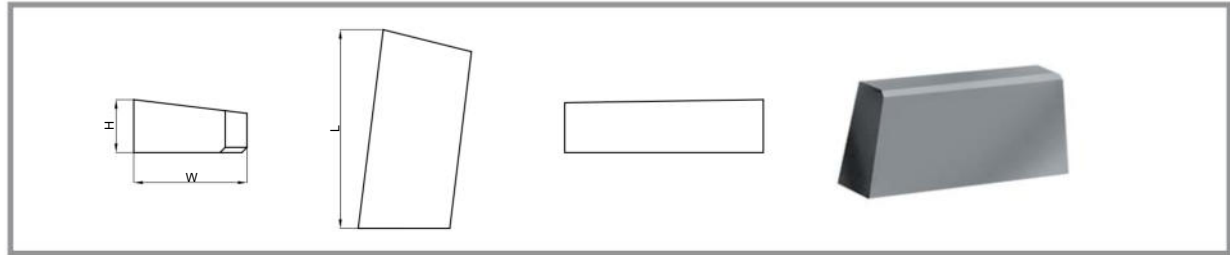
Blocks



Dimension: mm

L	W	H
16	25.5	38
22.4	8.5	7.5
25	8.5	7.7
31	25	18
35	50	25
38	30	20
38	24	18
39	25	18
46	28	28

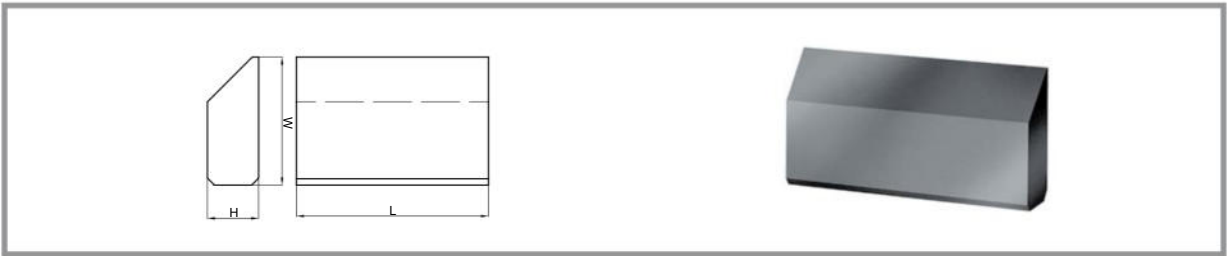
Note: The dimensions and shape can be customized according to the customer's requirements.



Dimension: mm

L	W	H
115	52	30

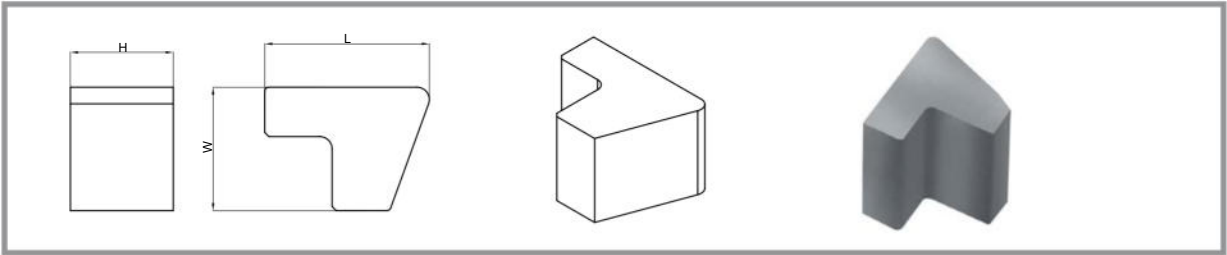
Note: The dimensions and shape can be customized according to the customer's requirements.



Dimension: mm

L	W	H
28	15	6

Note: The dimensions and shape can be customized according to the customer's requirements.



Dimension: mm

L	W	H
45	40	50

Note: The dimensions and shape can be customized according to the customer's requirements.

Pavement Milling Inserts



Dimension: mm

Type	D	d	H	h
WL159160	15.9	7.8	16	1.5
WL175167D	17.5	9.6	16.7	1
WL185195	18.5	10.6	19.5	1.7
WL190182	19	11.5	18.2	1.5
WL204202	20.4	11	20.2	1.95
WL208198	20.8	11.7	19.8	2.5
WL240187	24	17.2	18.7	1.9
WL290260	29	19	26	3.5

Note: The dimensions and shape can be customized according to the customer's requirements.

Columnar Inserts



Dimension: mm

Type	D	H	R1	R2
MJ220280BD10Q	22	28	2	26
MJ250350D40	25	35	3	26
MJ300370CD50	30	37	3	37.5
MJ354400D20	35.4	40	4	50

Note: The dimensions and shape can be customized according to the customer's requirements.

Columnar Inserts



Dimension: mm

Type	D	H	R1	R2
MC235260CD05	23.5	26	2.5	33
MC255300D05	25.5	30	2	30
MC255335CD12Q20	25.5	33.5	2.5	84° /57°
MJ320400AD10Q	32	40	4	42

Note: The dimensions and shape can be customized according to the customer's requirements.

Mushroom-shaped Inserts

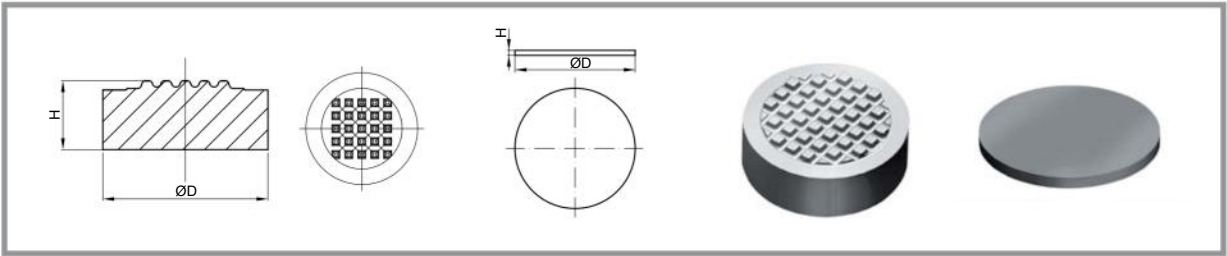


Dimension: mm

Type	D	d	H	R1	R2
MC220340	22	15.5	34	2.5	35
MC250320	25	20	32	2.5	40
MJ300350	30	24.6	35	2.5	50
MC330350	33	24.6	35	4.5	30
MC340400	34	24.6	40	2.5	50

Note: The dimensions and shape can be customized according to the customer's requirements.

Super Hard Material Substrate



Dimension:(mm)			
Grid pattern	Type	D	H
	JP147119	14.7	11.9
	JP180120	18.0	12.0
	JP209125	20.3	12.5
Straight-line pattern	Type	D	H
	JP112036	11.2	3.6
	JP144040	14.4	4.0
	JP146071	14.6	7.1
Planar	Type	D	H
	JP520027	52	2.7
	JP580027	58	2.7
	JP620036	62	3.6
	JP720046	72	4.6

Note: The dimensions and shape can be customized according to the customer's requirements.

Hardness Comparison

3R				HV30 30Kg
HRA 60Kg Diamond		HRC 150Kg Diamond	HRD 100Kg Diamond	
92.5	-	80.5	-	1700
92.0	-	80.0	-	1600
91.5	-	79.0	-	1550
91.0	-	78.0	-	1500
90.5	-	77.0	-	1450
90.0	-	76.0	-	1400
89.5	-	75.0	-	1350
89.0	-	74.0	-	1300
88.5	-	73.0	-	1250
88.0	-	72.0	-	1200
87.5	-	71.5	-	1150
87.0	-	71.0	-	1140
86.5	-	70.0	-	1076
86.0	-	69.0	-	1004
85.6	-	68.0	76.9	940
85.3	-	67.5	76.5	920
85.0	-	67.0	76.1	900
84.7	-	66.4	75.7	880
84.4	-	65.9	75.3	860
84.1	-	65.3	74.8	840
83.8	-	64.7	74.3	820
83.4	-	64.0	73.8	800
83.0	-	63.3	73.3	780
82.6	-	62.5	72.6	760
82.2	-	61.8	72.1	740
81.8	-	61.0	715	720
81.3	-	60.1	70.8	700
81.1	-	59.7	70.5	690
80.8	-	59.2	70.1	680
80.6	-	58.8	69.8	670
80.3	--	58.3	69.4	660
80.0	-	57.8	69.0	650
79.8	-	57.3	68.7	640
79.5	-	56.8	68.3	630