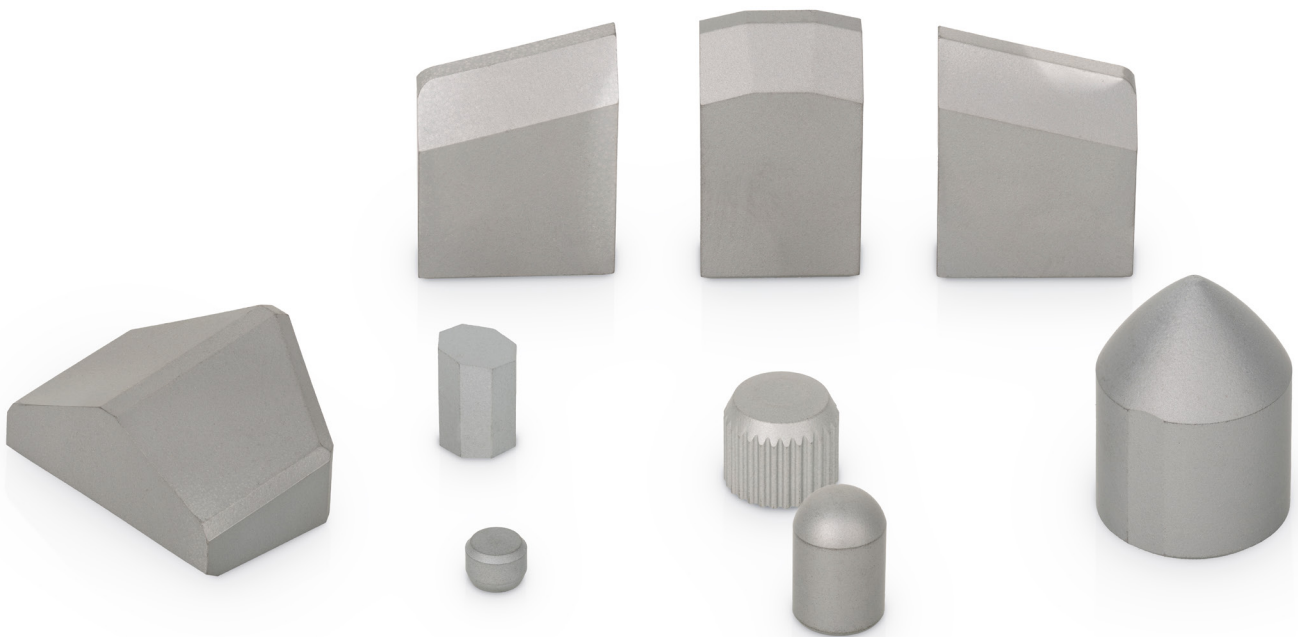

Raise productivity with Tungsten carbide inserts

elementSIX™
DE BEERS GROUP



Element Six offers a wide range of standard and customised tungsten carbide inserts that increase productivity and significantly outperform their steel equivalents in a variety of industries

We put our customers first.
Using our technological expertise
and industrial leadership we deliver
innovative solutions to achieve
competitive advantage.

Element Six is one of the world's leading producers of tungsten carbide and synthetic diamond.

Our range of high-quality tools, made in Germany, offers unparalleled performance, and high wear and impact resistance for the cold planing of asphalt or concrete.

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Tungsten carbide to increase tool performance

Element Six offers a wide range of tungsten carbide products developed from sixty years of market-leading expertise. Characterised by extreme strength, toughness and hardness, tungsten carbide is highly resistant to wear and high temperatures.

As a result, Element Six's products offer significant wear protection and retain their sharp cutting edges much longer - ensuring optimum finish and drilling efficiency. Wherever materials are cut, sawn, drilled or ground in the mining, chemical and oil and gas industries, moving up from steel to tungsten carbide can improve tool life, dimensional accuracy, cost efficiency and productivity.

Element Six tungsten carbide products also have exceptional resistance to high temperatures allowing users to work faster, more efficiently and to deliver a better finish for the end-product.

The commercial advantages of using Element Six tungsten carbide products are being realised by an increasing number of tool manufacturers in different industries: from construction, mining and tunnelling to mineral processing, textiles, automotive and agriculture.



Our site in Burghaun, Germany.

Standard products and adaptations

Element Six manufactures and supplies a vast range of tungsten carbide inserts of all types, shapes and sizes to a worldwide customer network with countless different requirements.

Customised products that transform performance

Element Six works in collaboration with customers, applying the extreme properties of tungsten carbide to address specific, often complex requirements. The result is a product that can transform performance and productivity – and give customers a significant advantage over their competitors. For example, by varying the grain size of the tungsten carbide and the binder content, engineers can manipulate tungsten carbide to display different characteristics and performance in various applications. These range from percussive drilling, to applications in agriculture, forestry, recycling and mining and tunnelling.

Any order, anywhere, worldwide

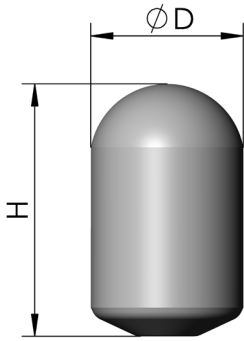
Through our local representative network, Element Six ensures our experience, know-how and industry-leading technical facilities are available to all our customers. By producing 1,500 tons of tungsten carbide per year, Element Six can meet requests for substantial orders.

60 years of expertise

Element Six has been manufacturing tungsten carbide for over six decades. Customers worldwide benefit directly from this experience, our know-how in the materials science of tungsten carbide, our practical knowledge of thousands of applications and our industry leading technical facilities.

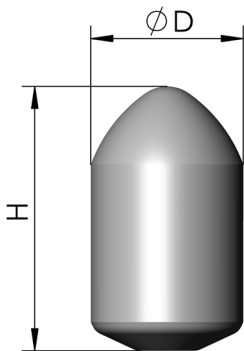
Range of tungsten carbide grades for inserts*							
Grade	Sintered WC grain size	Co content % ± 0.2	Density g/cm³ ± 0.1	Coercivity Oe	Hardness		TRS MPa
					HV20 ± 50	HRA ± 0.3	
T6	Coarse	6.0	14.95	130-160	1450	90.6	3000
T6S	Coarse	6.2	14.95	115-135	1400	90.2	3000
B20	Coarse	8.0	14.70	90-120	1250	88.7	2800
B20S	Coarse	8.0	14.70	110-140	1310	89.3	2800
BH9	Coarse	9.0	14.60	90-125	1250	88.7	3100
B25	Coarse	10.0	14.50	75-110	1200	88.2	3150
B30	Coarse	11.0	14.40	75-105	1150	87.7	3000
B40	Coarse	15.0	14.00	65-90	1050	86.5	2800
B25N	Extra coarse	9.5	14.55	50-68	1050	86.5	2100
G15	Medium	8.0	14.70	160-200	1480	90.9	3200
G20	Medium	11.0	14.40	130-170	1320	89.4	3400

Button inserts: ground



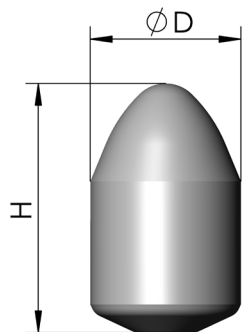
Hemispherical type*

Part no.	ØD (mm)	H (mm)	Grade
71100214	7.0	10.0	T6
71100216	8.0	11.0	T6
71100223	9.0	13.5	T6
71100228	10.0	16.0	T6
71100230	11.0	15.0	T6
71100236	12.0	20.0	T6
71100257	13.0	19.0	T6
71100240	14.0	24.0	T6
71100688	15.0	24.5	T6
71100250	16.0	26.5	T6
71100594	18.0	30.0	T6
71100601	20.0	30.0	T6



Parabolic type*

Part no.	ØD (mm)	H (mm)	Grade
71100215	7.0	11.0	T6
71100218	8.0	12.0	T6
71100224	9.0	14.5	T6
71100229	10.0	17.0	T6
71100233	11.0	19.5	T6
71100237	12.0	21.0	T6
71100249	14.0	25.0	T6
71100655	16.0	28.0	T6



Ballistic type*

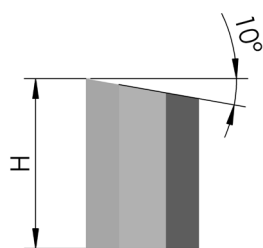
Part no.	ØD (mm)	H (mm)	Grade
71100643	9.0	18.0	T6
71100489	10.0	18.5	T6
71100260	11.0	21.0	T6
71100247	12.0	20.0	T6
71100641	14.0	27.5	T6
7110072 1	16.0	25.5	T6

*Ground to customer specification.



Element Six button inserts for round shank picks enable our customers to increase their productivity in mining operations.

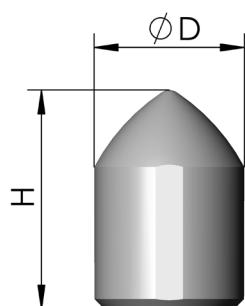
Button inserts: as sintered



Octagonal type

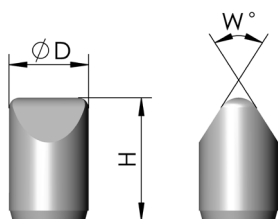
Part no.	SW (mm)	H (mm)	Grade
71000626	4.0	12.0	B25
71000285	5.0	16.0	B25
71000405	5.5	15.0	B20S
71002026	6.0	16.0	B20S
71000297	7.0	16.0	B25
71000498	7.5	12.0	B20S
71000270	7.5	15.0	B20S
71001397	7.5	16.0	B20
71000311	8.0	15.0	B20S
71000325	9.5	16.0	B25
71000368	10.0	15.0	B20
71000571	10.0	16.0	B20
71000383	15.0	20.0	B20S

For round shank picks



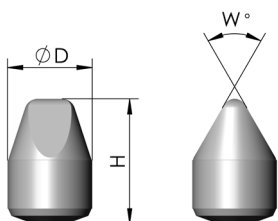
Part no.	ØW (mm)	H (mm)	Grade
71000014	14.5	20.9	B25N
71000102	15.0	22.5	B25N
71000743	17.5	20.0	B25N
71000111	17.5	28.5	B25N
71000018	19.0	28.0	B25N
71000019	21.0	30.0	B25N
71000744	22.0	26.0	B25N
71000122	22.0	30.0	B25N
71000123	22.0	32.0	B25N
71000020	24.0	34.0	B25N
71000134	25.0	36.0	B25N
71000137	29.0	38.0	B25N
71000352	30.0	40.0	B25N

Button inserts: as sintered



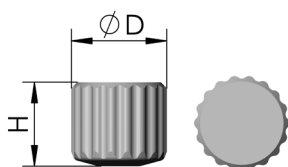
For chisel type

Part no.	ØD (mm)	H (mm)	W (°)	Grade
71000915	15.5	24.0	65.0	B40
71000140	16.4	27.0	90.0	B40
71000670	20.4	30.0	65.0	B40
71001086	25.5	30.0	70.0	B40
71000641	25.5	33.5	70.0	B40



For tricone bits

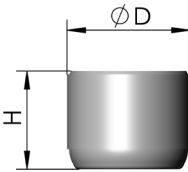
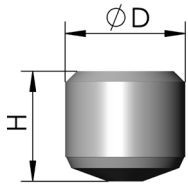
Part no.	ØD (mm)	H (mm)	W (°)	Grade
71000719	5.4	6.2	70.0	B30
71000681	6.4	6.8	75.0	B30
71000711	6.8	7.5	80.0	B30
71000727	8.4	10.0	72.0	B30
71000714	10.0	11.5	70.0	B30
71000680	10.4	13.0	75.5	B30
71000713	11.6	13.5	75.5	B40
71000770	13.4	17.0	70.0	B30
71000769	14.8	19.0	65.0	B30
71000579	14.8	20.2	74.0	B30
71000768	16.4	19.3	70.0	B30
71000662	16.4	25.0	60.0	B30
71000766	19.3	26.6	65.0	B30
71000620	20.0	28.0	70.0	B40
71000772	22.4	31.0	65.0	B30
71000989	22.4	35.0	55.0	B40
71000771	25.4	36.0	65.0	B30
71000856	25.4	41.0	55.0	B40



Serrated type

Part no.	ØD (mm)	H (mm)	Serrations	Grade
71001180	4.9	4.3	9.0	B40
71000898	8.1	7.1	18.0	B40
71001788	11.3	9.4	20.0	B40
71000837	14.8	13.3	28.0	B40

Button inserts: as sintered



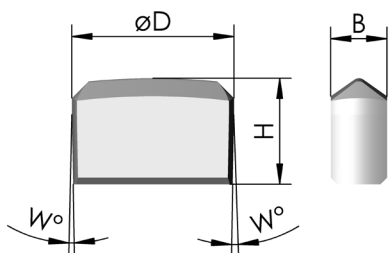
For wear protection

Part no.	ØW (mm)	H (mm)	Grade
71000764	5.4	4.8	B20
71000700	6.4	5.5	B20
71000701	8.4	7.2	B20
71000773	13.4	11.2	B20
71000717	6.8	5.0	G20
71000971	8.4	6.0	B20
71000732	10.4	9.5	B20
71000822	11.6	9.5	B20
71000706	13.3	9.5	G15
71000885	14.8	10.0	G20
71000481	14.9	15.0	B30

Element Six button inserts meet our customers' specific requirements in tunnelling operations



Button inserts: as sintered

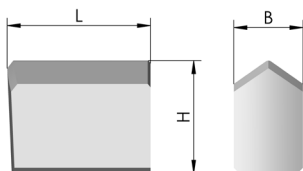


For integral drill steels and rock splitters

Part no.	B (mm)	H (mm)	ØD (mm)	W (°)	Grade	Part no.	B (mm)	H (mm)	Ø D (mm)	W (°)	Grade
71501063	5.4	8.0	16.0	3.0	B20	71501078	8.5	16.0	24.5	1.0	B25
71501077	6.0	16.0	16.5	1.0	B25	71501188	9.95	18.0	25.0	3.0	B25
71501117	6.0	16.0	17.5	1.0	B25	71501138	9.95	18.0	26.0	3.0	B25
71501163	6.0	16.0	18.5	1.0	B25	71501150	9.95	18.0	27.0	3.0	B25
71501074	6.0	16.0	19.5	1.0	B25	71501118	9.95	18.0	28.0	3.0	B25
71501164	6.0	16.0	20.5	1.0	B25	71501180	9.95	18.0	31.0	3.0	B25
71501075	6.0	16.0	22.5	1.0	B25	71501179	9.95	18.0	32.0	3.0	B25
71501165	6.0	16.0	23.5	1.0	B25	71501178	9.95	18.0	33.0	3.0	B25
71501094	6.4	10.0	20.0	3.0	B20	71501177	9.95	18.0	34.0	3.0	B25
71501098	6.4	10.0	22.0	3.0	B20	71501201	9.95	18.0	35.0	3.0	B25
71501211	6.4	11.0	24.0	3.0	B20	71501231	9.95	18.0	36.0	3.0	B25
71501229	6.4	11.0	26.0	3.0	B20	71501208	9.95	18.0	37.0	3.0	B25
71501142	6.4	11.0	30.0	3.0	B20	71501085	9.95	18.0	38.0	3.0	B25
71501192	6.4	11.0	32.0	3.0	B20	71501207	9.95	18.0	39.0	3.0	B25
71501193	8.4	11.0	34.0	3.0	B20	71501127	9.95	18.0	40.0	3.0	B25
71501143	8.4	11.0	36.0	3.0	B20	71501169	9.95	18.0	41.0	3.0	B25
71501194	8.4	11.0	38.0	3.0	B20	71501232	9.95	18.0	42.0	3.0	B25
71501214	8.4	11.0	40.0	3.0	B20	71501233	9.95	18.0	44.0	3.0	B25
71501144	8.4	11.0	42.0	3.0	B20	71501206	9.95	18.0	45.0	3.0	B25
71501195	8.4	11.0	48.0	3.0	B20	71501205	9.95	20.0	32.0	3.0	B25
71501115	8.5	16.0	22.5	1.0	B25	71501204	9.95	20.0	33.0	3.0	B25
71501148	8.5	16.0	23.5	1.0	B25						



Plates: as sintered

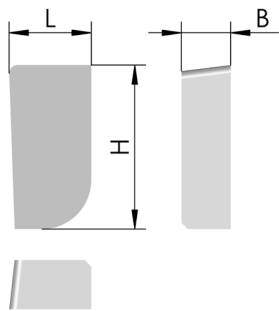


For cross bits

Part no.	B (mm)	H (mm)	L (mm)	W (°)	Grade
71501096	6.4	11.1	11.4	2.0	B20
71501097	6.4	11.1	14.4	2.0	B20
71501108	7.9	6.4	12.4	3.0	BH9
71501329	10.0	18.0	14.5	3.0	B25
71501393	11.4	19.2	12.9	2.5	B25
71501394	11.4	19.2	14.4	2.5	B25
71501213	12.3	20.0	23.0	2.5	BH9
71501243	12.3	20.0	25.5	2.5	BH9
71501123	12.3	22.0	29.5	3.0	B25
71501172	12.3	25.5	18.7	3.0	B25
71501323	13.3	24.0	26.5	3.0	BH9
71501331	13.3	24.0	29.0	3.0	B20
71501132	15.5	25.5	33.5	3.0	BH9

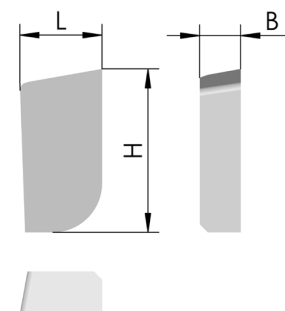
Other dimensions are available on request.

Plates: as sintered



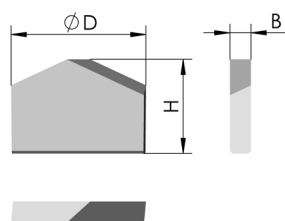
For reamers

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500117	10.0	15.0	6.0	B25
71500003	10.0	20.0	6.0	B25
71500120	15.0	20.0	8.0	B25
71500004	17.5	20.0	8.0	B25
71500122	20.0	25.0	8.0	B25
71500702	32.5	20.0	8.0	B25



For reamers

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500113	10.0	20.0	5.0	B25
71500640	12.0	20.0	5.0	B25
71500115	15.0	20.0	5.0	B25



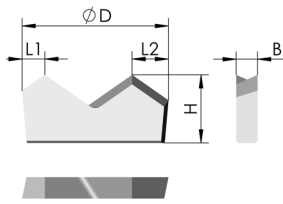
For pilot bits

Part no.	ØD (mm)	H (mm)	B (mm)	Grade
71500842	24.0	16.0	4.0	B25
71500062	26.0	18.0	4.0	B25
71500090	51.0	23.0	7.0	B25



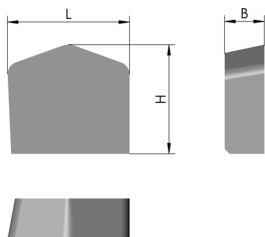
Element Six offers a wide range of plates that can be used in various drilling applications

Plates: as sintered



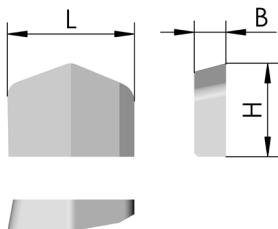
For rotary drill bits

Part no.	ØD (mm)	H (mm)	B (mm)	L1 (mm)	L2 (mm)	Grade
71500628	28.6	12	4.7	5.0	6.5	B20
71500076	32.5	15.0	4.7	5.0	8.0	B20
71500085	43.0	20.5	5.0	8.0	13.0	B20
71500978	45.0	20.5	5.0	9.0	14.0	B20



For rotary drill bits

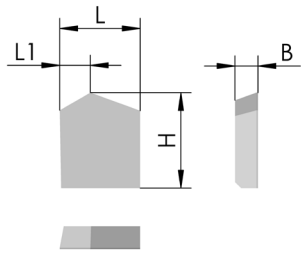
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500087	18.0	18.0	5.5	B25
71500001	20.0	18.0	6.0	B25
71501023	20.0	18.0	6.5	B25
71500719	22.0	20.0	5.0	B25
71500083	23.5	18.0	5.0	B25



For rotary drill bits

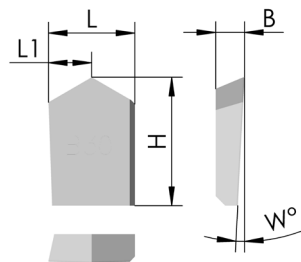
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500002	25.0	22.0	8.0	B30
71500095	34.0	25.0	8.5	B30
71500097	37.0	25.0	9.0	B30
71500631	40.0	25.0	10.0	B30
71500433	44.0	25.0	10.0	B30
71500103	50.0	25.0	10.0	B30

Plates: as sintered



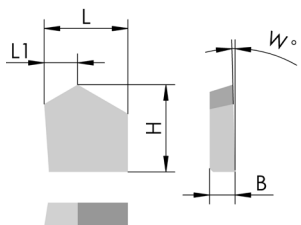
For coal and salt mining

Part no.	L (mm)	H (mm)	B (mm)	L1 (mm)	Grade
71500056	10.0	15.0	4.0	4.0	B20
71500054	10.0	15.0	4.0	6.0	B20
71500382	10.5	12.5	3.0	4.0	B20
71500381	10.5	12.5	3.0	6.5	B20
71500043	12.5	13.0	3.5	5.0	B20
71500042	12.5	13.0	3.5	7.5	B20
71500939	16.2	18.2	4.8	8.1	B20
71500075	18.0	20.0	4.5	9.0	B25
71500824	18.5	14.5	5.0	10.0	B20
71500046	21.0	20.0	3.5	6.5	B20
71500047	21.0	20.0	3.5	14.5	B20
71500719	22.0	20.0	5.0	11.0	B25



For coal and salt mining

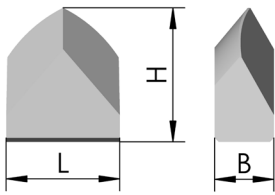
Part no.	L (mm)	H (mm)	B (mm)	L1 (mm)	W (°)	Grade
71500048	12.5	21.0	3.8	4.0	3.0	B25
71500050	12.5	21.0	3.8	8.5	3.0	B25
71500762	13.5	20.0	4.5	6.8	3.0	B25
71500835	13.5	20.0	4.5	6.8	3.0	B30
71500653	15.0	20.0	4.5	7.5	3.0	B25
71501175	16.0	22.0	3.6	7.5	2.0	B25
71501216	16.0	22.0	3.6	8.5	2.0	B25



For coal and salt mining

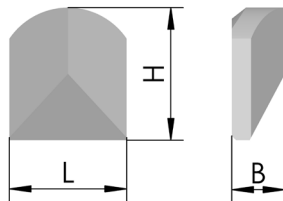
Part no.	L (mm)	H (mm)	B (mm)	L1 (mm)	W (°)	Grade
71500741	12.5	13.0	3.8	5.0	-1.5	B20
71500742	12.5	13.0	3.8	7.5	-1.5	B20
71500808	12.8	13.4	3.9	5.0	-1.5	B25
71500809	12.8	13.4	3.9	7.5	-1.5	B25

Plates: as sintered



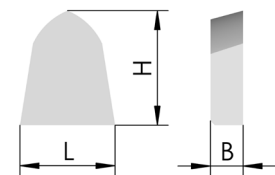
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500558	19.0	27.0	12.0	B40
71500861	21.0	27.0	12.0	B40
71500024	23.0	27.0	12.0	B40
71501695	26.5	27.0	12.0	B40



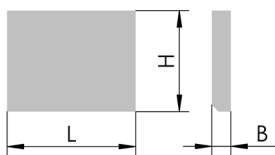
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500212	26.5	30.0	12.0	B40



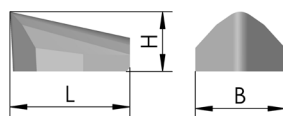
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501046	17.5	21.0	6.0	B25



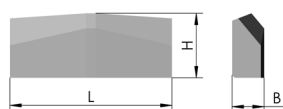
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500986	22.0	15.0	5.0	B40



For various applications

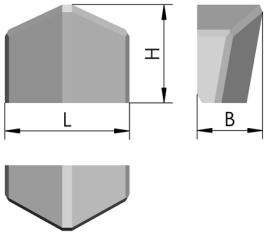
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500652	32.0	16.0	24.0	B40



For various applications

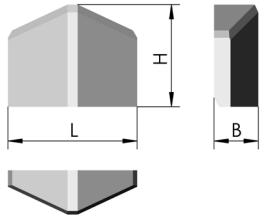
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500826	49.6	19.8	9.8	B40

Plates: as sintered



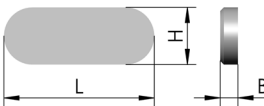
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501037	38.0	25.0	18.1	B40
71500816	38.0	30.0	19.0	B40



For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501055	38.0	30.0	13.0	B40



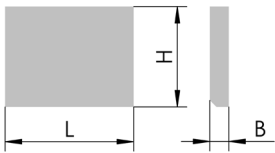
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500820	41.6	15.7	4.9	B40

Element Six draws from more than 75 years experience in the production of tungsten carbide to manufacture the right products for the forestry and recycling industries

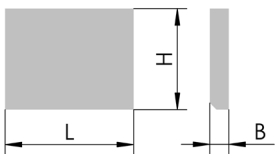


Plates: as sintered



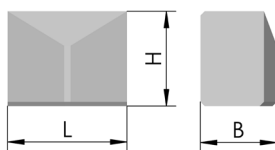
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501015	25.0	12.0	5.0	B40
73200266	25.0	12.0	6.0	B40
71500242	27.1	21.2	4.0	B40
72000662	50.0	15.0	10.0	B40
72001883	105.0	20.0	10.0	G15



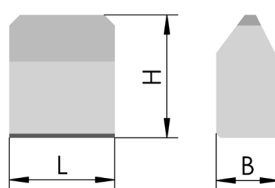
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
72001193	12.7	12.7	3.0	B40
72001123	19.0	19.0	3.0	B40
73200594	20.0	8.0	6.0	B40
72001476	30.0	30.0	4.0	B40
72001572	30.0	30.0	15.0	B30
72000643	45.0	18.0	4.0	B40
72001037	50.0	15.0	5.0	B40
71501018	50.0	15.1	8.0	B40
72002340	50.0	45.0	4.0	B30
72001437	60.0	30.0	4.0	B30
72000434	80.0	20.0	4.0	B40



For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71500989	27.0	30.0	19.5	B40
71500905	27.8	22.0	11.8	B40
71500918	27.8	22.0	15.8	B40
71500798	27.8	22.0	17.8	B40

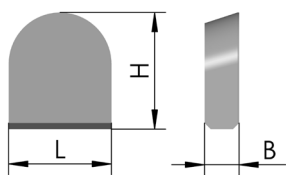


For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501034	20.0	29.0	15.0	B40
71501131	25.0	29.0	15.0	B40

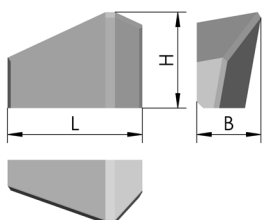


Plates: as sintered



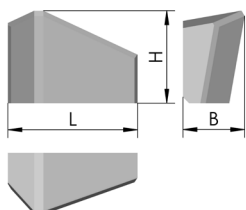
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
72001071	13.4	15.2	4.5	B30



For various applications

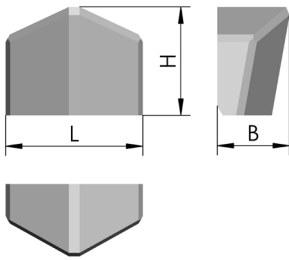
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500027	42.0	30.0	20.0	B40



For various applications

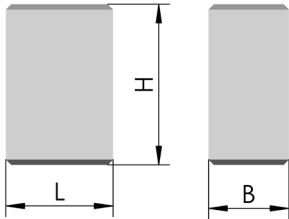
Part no.	L (mm)	H (mm)	B (mm)	Grade
71500028	42.0	30.0	20.0	B40

Plates: as sintered



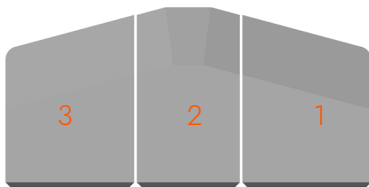
For various applications

Part no.	L (mm)	H (mm)	B (mm)	W (°)	Grade
71500226	31.0	30.0	20.0	10.0	B40
71500815	38.0	30.0	20.0	0	B40
71501381	50.0	45.0	29.8	0	B40

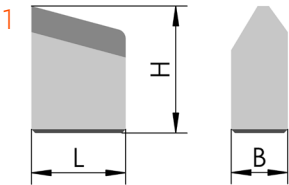


For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501342	15.0	30.0	20.0	B40
71502596	15.0	30.0	30.0	B40

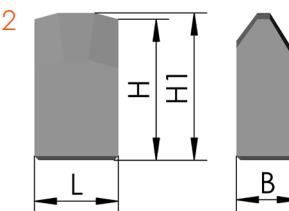


Carbide plate systems are composed of three parts:



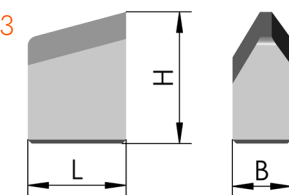
For various applications

Part no.	L (mm)	H (mm)	B (mm)	Grade
71501289	25.0	33.5	15.0	B40
71501350	33.0	43.6	15.0	B40



For various applications

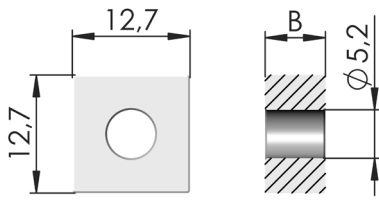
Part no.	L (mm)	H (mm)	H1 (mm)	B (°)	Grade
71501292	20.0	33.5	35.0	15.0	B40
71501349	33.0	43.6	53.0	15.0	B40



For various applications

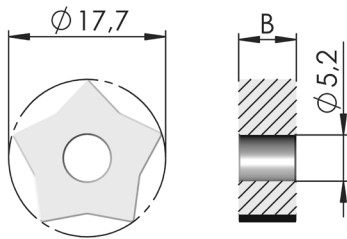
Part no.	L (mm)	H (mm)	B (mm)	Grade
71501288	25.0	33.5	15.0	B40
71501350	33.0	43.6	15.0	B40

Chain saw inserts: as sintered



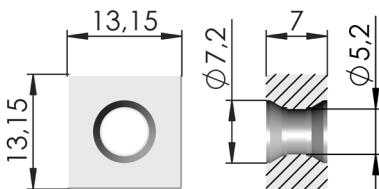
For chisel type

Part no.	B (mm)	Grade
72500989	7.0	T6S



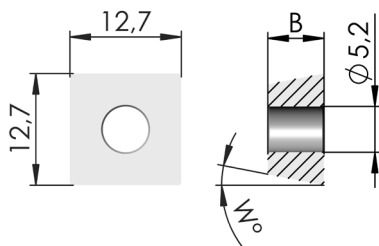
For chisel type

Part no.	B (mm)	Grade
72501376	6.5	T6S



For chisel type

Part no.	B (mm)	Grade
72501216	6.5	T6S



For chisel type

Part no.	B (mm)	Grade
72501172	6.4	T6S



Element Six produces a wide range of high performance chain saw inserts that can be used to cut a variety of stone materials





Element Six, part of the De Beers Group, designs, develops and produces synthetic diamond and other supermaterials, and operates worldwide with manufacturing facilities in Germany, Ireland, South Africa, UK and US.

Element Six supermaterial solutions are used in applications such as cutting, grinding, drilling, shearing and polishing, while the extreme properties of synthetic diamond beyond hardness are opening up new applications in a wide array of industries such as optics, power transmission, water treatment, semiconductors and sensors.

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