

# METALFORMING

## EDM Blocks



# EDM Blocks

## Why Us?

- All grades are proven in their application.
- Products stocked globally for quick delivery.
- Standard and corrosion-resistant grades.
- 200 standard sizes with custom sizes available upon request.
- Application, metallurgical, and process optimization services.

## Expertise in Cemented Tungsten Carbide Metallurgy

Our globally renowned portfolio of grades for metalforming and stamping is based on 75 years of research and development of tungsten carbide based materials.

## Withstand Extensive EDM

Our latest grades were developed with a proprietary binder system and maintain the hardness and mechanical properties of our conventional grades. They resist the corrosion, pitting, and cracking commonly experienced during electrical discharge machining, especially in thick punches and large die segments.



# EDM Blocks

The Kennametal proprietary manufacturing processes result in superior, consistent mechanical properties throughout the product lifecycle.



Kennametal Grade	Nominal Binder (%)	Grain Family	Hardness		Average TRS	
			HRA	HV30	PSI	Mpa
KR855	10	submicron	91.8	1580	420500	2900
KR466	12	fine	90.0	1360	480000	3310
KR887	15	submicron	90.2	1380	435000	3000
CD650	15	submicron	90.2	1380	550000	3790
CD750	15.5	submicron	90.7	1440	625000	4310

NOTE: Made-to-order blocks and pre-forms are available in a variety of grades for specialty applications.

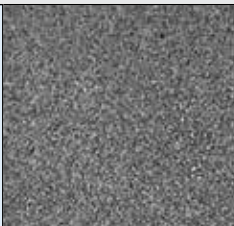






NOTE: All Kennametal KMSB Standard EDM blocks are individually laser-etched, packaged, and labeled for protection and traceability.

## EDM Blocks

Unlike other carbide manufacturers, we produce our powders from the raw materials. This guarantees the highest quality tungsten carbide throughout the process and maximizes performance for the end user.



Grade	Grade Description
 <p>KR855</p>	<p><b>Composition:</b> 10% corrosion-resistant binder with submicron grain structure. Very good wear resistance with high edge sharpness but less shock resistance than higher binder grades. Excellent for EDM operations and good in non-ferrous applications.</p> <p><b>Application:</b> ISO K-30 grade with ideal wear resistance in high-speed stamping, medium, thin sheets — coining brass (.010" thick), can die ironing rings, non-gummy steels, compacting dies, stamping dies for razor blades, lead frames (thin copper .030"), annealed copper, and draw dies (300 series stainless steel).</p>
 <p>KR466</p>	<p><b>Composition:</b> 12% corrosion-resistant binder with medium/fine-grain structure. Very high strength for heavy impact with low wear properties.</p> <p><b>Application:</b> For standard stamping — impacting punches, coining dies, forming dies, can die punches, swaging dies, cold forming, very severe draw dies for .075" thick cold-rolled steel, piercing punches (305 stainless steel), and gummy steel.</p>
 <p>KR887</p>	<p><b>Composition:</b> 15% corrosion-resistant binder with submicron grain structure for lead frame and connector stamping. Very high strength and excellent wear resistance for medium-impact applications.</p> <p><b>Application:</b> Stamping dies for razor blades, electronic stamping, lead frame dies, laminations, spring steel stampings, and coining dies (hard metal). Not recommended for stamping thick stainless steel. Use in place of CD650 for difficult to EDM parts, or if corrosive die lubricants are used.</p>
 <p>CD650</p>	<p><b>Composition:</b> Conventional 15% cobalt binder with submicron grain structure for lead frame and connector stamping. Very high strength and excellent wear resistance for medium-impact applications. Our most popular grade for general purpose stamping.</p> <p><b>Application:</b> Stamping dies for razor blades, electronic stamping, lead frame dies, laminations, spring steel stampings, and coining dies (hard metal). Not recommended for stamping thick stainless steel.</p>
 <p>CD750</p>	<p><b>Composition:</b> Conventional 15.5% cobalt binder with ultra-fine submicron grain structure for lead frame and connector stamping. Very high strength and excellent wear resistance for low-impact applications.</p> <p><b>Application:</b> Extremely thin punches or tools with very fine features will benefit from the ultra-fine submicron grain structure, which helps to prevent premature corner washout and maintain edge strength. Also may be used as an upgrade to CD650, due to increased hardness.</p>

NOTE: Grades shown at 1500x magnification.

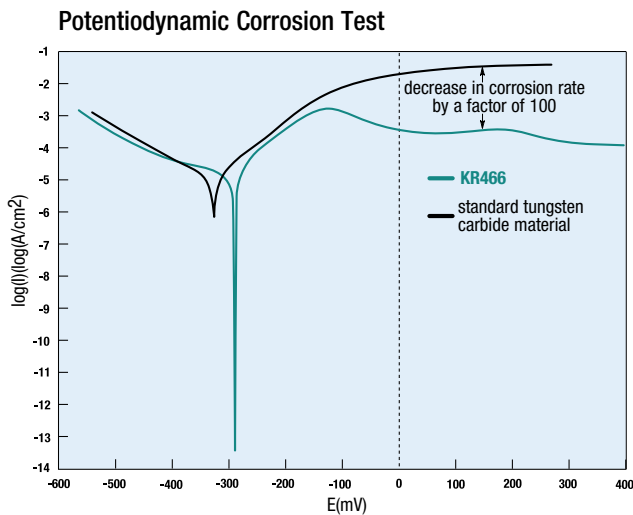
## Ready to Meet Your Specific Needs

We have a large selection of conventional and low-corrosion rectangular blanks in stock. Each is sinter-HIP processed and stress-relieved for optimum performance in EDM machining. Blocks are available in standard sizes, which are individually packaged for easy delivery and handling.

## Your Best Choice for a World of Extremes

For more than 75 years, we've proven our unparalleled performance and durability levels to a worldwide customer base. We have application specialists always on-hand to ensure you receive the right grade for the job. Our customer service and delivery are second to none. To learn more about how we can substantially boost your productivity — and lower your operating costs — contact your local Kennametal Representative.

## Comprehensive field testing demonstrates the superiority of Kennametal low-corrosion EDM blocks.



Standard solid carbide with multiple cracks on both rough and trim/finish cuts.



Kennametal low-corrosion grade is free of cracks.

Standard tungsten carbide materials surface exposed to EDM\*



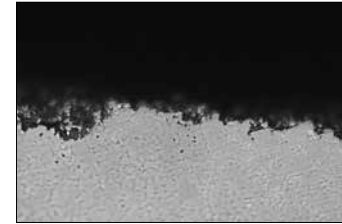
Pitting corrosion on all faces.

Standard tungsten carbide materials rough cut



Corrosion.

Standard tungsten carbide materials trim/finish



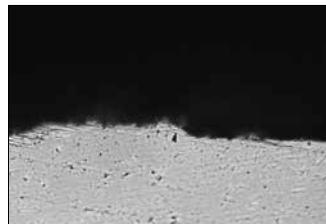
Corrosion originating from the surface layer.

Kennametal low-corrosion grade surface exposed to EDM\*



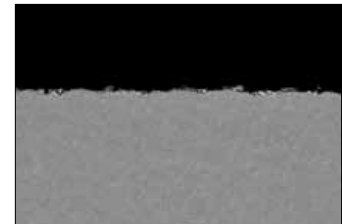
No pitting corrosion.

Kennametal low-corrosion grade rough cut



No corrosion.

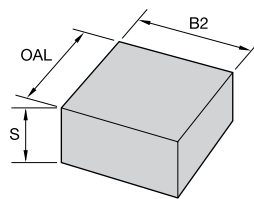
Kennametal low-corrosion grade trim/finish



No corrosion detected.

\*Field tests (EDM for 36 hours).

- Nominal dimensions are shown in the chart below.
- All blanks are provided with grinding allowance as shown in the tolerance chart.
- Each block is sinter HIP and stress relieved for EDM machining.



■ KMSB • 105 x 105mm

catalog number	S		B2		OAL		CD650	CD750	KR466	KR887
	mm	in	mm	in	mm	in				
KMSB010	1,0	0.039	105	4.125	105	4.125	5205625	5990520	-	-
KMSB015	1,5	0.059	105	4.125	105	4.125	5205626	6186452	5956612	6306578
KMSB020	2,0	0.079	105	4.125	105	4.125	5205627	5911311	5969055	-
KMSB025	2,5	0.098	105	4.125	105	4.125	5205628	6099935	5956613	6306579
KMSB030	3,0	0.118	105	4.125	105	4.125	5205629	5990601	5969056	6111986
KMSB035	3,5	0.138	105	4.125	105	4.125	5205720	6099936	6167690	6306580
KMSB040	4,0	0.157	105	4.125	105	4.125	5205721	5952842	6225687	-
KMSB045	4,5	0.177	105	4.125	105	4.125	5205722	6101936	5315125	6306581
KMSB050	5,0	0.197	105	4.125	105	4.125	5205723	5952843	6167761	6306582
KMSB055	5,5	0.217	105	4.125	105	4.125	5205724	6186521	5315126	6306583
KMSB060	6,0	0.236	105	4.125	105	4.125	5205725	5952844	6167762	-
KMSB065	6,5	0.256	105	4.125	105	4.125	5205726	6186523	5315127	6306584
KMSB070	7,0	0.276	105	4.125	105	4.125	5205727	5990602	6306559	-
KMSB075	7,5	0.295	105	4.125	105	4.125	5205728	6186524	5315128	6306585
KMSB080	8,0	0.315	105	4.125	105	4.125	5205729	5952845	6306560	6306586
KMSB085	8,5	0.335	105	4.125	105	4.125	5205730	6186525	5315129	6306587
KMSB090	9,0	0.354	105	4.125	105	4.125	5205731	5990604	5391771	-
KMSB095	9,5	0.374	105	4.125	105	4.125	5205732	6091876	5315170	6306588
KMSB100	10,0	0.394	105	4.125	105	4.125	5205733	5564400	6117036	-
KMSB105	10,5	0.413	105	4.125	105	4.125	5205734	6186526	5315171	-
KMSB110	11,0	0.433	105	4.125	105	4.125	5205735	6130102	-	-
KMSB115	11,5	0.453	105	4.125	105	4.125	5205736	-	-	-
KMSB120	12,0	0.472	105	4.125	105	4.125	5205737	6186527	6306561	6306589
KMSB125	12,5	0.492	105	4.125	105	4.125	5205738	-	5315172	6306590
KMSB130	13,0	0.512	105	4.125	105	4.125	5205739	-	-	-
KMSB135	13,5	0.531	105	4.125	105	4.125	5205750	-	-	-
KMSB140	14,0	0.551	105	4.125	105	4.125	5205753	-	-	-
KMSB145	14,5	0.571	105	4.125	105	4.125	5205754	-	5315173	-
KMSB150	15,0	0.591	105	4.125	105	4.125	5205755	6186528	5969057	5416709
KMSB155	15,5	0.610	105	4.125	105	4.125	5205756	-	-	-
KMSB160	16,0	0.630	105	4.125	105	4.125	5205757	-	5913757	5416710
KMSB165	16,5	0.650	105	4.125	105	4.125	5205758	-	-	-
KMSB170	17,0	0.669	105	4.125	105	4.125	5205759	-	-	5416711
KMSB175	17,5	0.689	105	4.125	105	4.125	5205760	-	-	-
KMSB180	18,0	0.709	105	4.125	105	4.125	5205761	5304431	-	5416712
KMSB185	18,5	0.728	105	4.125	105	4.125	5205762	-	-	-
KMSB190	19,0	0.748	105	4.125	105	4.125	5205763	-	6306562	5416713
KMSB195	19,5	0.768	105	4.125	105	4.125	5205764	-	-	-
KMSB200	20,0	0.787	105	4.125	105	4.125	5205765	5329043	6225689	5416714
KMSB205	20,5	0.807	105	4.125	105	4.125	-	-	5315174	-
KMSB210	21,0	0.827	105	4.125	105	4.125	5205766	-	-	5416715
KMSB220	22,0	0.866	105	4.125	105	4.125	5205767	6187038	-	-
KMSB230	23,0	0.906	105	4.125	105	4.125	5205768	5329044	6306563	5416716
KMSB240	24,0	0.945	105	4.125	105	4.125	5205769	-	-	-
KMSB250	25,0	0.984	105	4.125	105	4.125	5205770	5329045	6084834	5416717
KMSB255	25,5	1.004	105	4.125	105	4.125	-	-	5315175	6242292
KMSB260	26,0	1.024	105	4.125	105	4.125	5205771	6192251	6306564	-
KMSB285	28,5	1.122	105	4.125	105	4.125	-	-	6306565	6306591

(continued)



(KMSB • 105 x 105mm — continued)

catalog number	S		B2		OAL		CD650	CD750	KR466	KR887
	mm	in	mm	in	mm	in				
KMSB300	30,0	1.181	105	4.125	105	4.125	5205772	-	6360117	6111987
KMSB320	32,0	1.260	105	4.125	105	4.125	5205773	-	6306566	5416718
KMSB350	35,0	1.378	105	4.125	105	4.125	-	5911270	6084833	6306592
KMSB380	38,0	1.496	105	4.125	105	4.125	-	-	6306567	6306593
KMSB390	39,0	1.535	105	4.125	105	4.125	-	-	-	5416719
KMSB400	40,0	1.575	105	4.125	105	4.125	5205774	-	6360118	6306594
KMSB415	41,5	1.634	105	4.125	105	4.125	-	-	6306568	6306595
KMSB445	44,5	1.752	105	4.125	105	4.125	-	-	6306569	6306596
KMSB450	45,0	1.772	105	4.125	105	4.125	5205775	-	-	5416720
KMSB500	50,0	1.969	105	4.125	105	4.125	-	-	5954489	6306597
KMSB510	51,0	2.008	105	4.125	105	4.125	5205776	-	6306570	5416721
KMSB520	52,0	2.047	105	4.125	105	4.125	-	-	6351035	-
KMSB530	53,0	2.087	105	4.125	105	4.125	-	5329046	-	5416722
KMSB535	53,5	2.106	105	4.125	105	4.125	-	-	5315176	-
KMSB550	55,0	2.165	105	4.125	105	4.125	-	-	6306571	6306598
KMSB555	55,5	2.185	105	4.125	105	4.125	-	-	5315177	5416723
KMSB570	57,0	2.244	105	4.125	105	4.125	-	-	6306572	6306599
KMSB580	58,0	2.283	105	4.125	105	4.125	-	-	-	5416724
KMSB600	60,0	2.362	105	4.125	105	4.125	-	-	6306573	5342190
KMSB605	60,5	2.382	105	4.125	105	4.125	-	-	5315178	5416725
KMSB635	63,5	2.500	105	4.125	105	4.125	-	-	5587113	6306600
KMSB650	65,0	2.559	105	4.125	105	4.125	-	-	6021416	-
KMSB700	70,0	2.756	105	4.125	105	4.125	-	-	6306574	6306601
KMSB765	76,5	3.012	105	4.125	105	4.125	-	-	6306575	6306602
KMSB855	85,5	3.366	105	4.125	105	4.125	-	-	6306576	6306603
KMSB890	89,0	3.504	105	4.125	105	4.125	-	-	6306577	6306604

**Tolerance • Inch**

	minimum	maximum
block thickness (S)	+.024	+.04
overall width (B2) and length (OAL)	+.024	+.08

**Tolerance • Metric**

	minimum	maximum
block thickness (S)	+0,6	+1
overall width (B2) and length (OAL)	+0,6	+2

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