

МЕХАНИЧНО ЗАКРЕПЯЕМИ ТВЪРДОСПЛАВНИ ПЛАСТИНИ INSERTS



Производството на твърдосплавни изделия в АРСЕНАЛ АД
гр. Казанлък е организирано през 1960 година.

Натрупаният дългогодишен опит, изследователска дейност и внедряването
на най-добрите достижения в областта на оборудването и технологията са основа на високата
оценка, която получават нашите изделия, работещи в много отрасли на промишлеността.
Нашето съвременно производствено оборудване и модерна технология закупени от водещата
в индустриалното производство шведска фирма
САНДВИК КОРОМАНТ и прецизният контрол
на продукцията ви гарантират висока производителност и дълъг живот
на използваните инструменти.

Твърдосплавното производство на АРСЕНАЛ АД гр. Казанлък ви предлага:

- механично закрепяеми твърдосплавни стругови и фрезови пластини за всички области на приложение по ISO, в това число и четири марки с едно- и двуслойно износоустойчиви покрития.
 - всички форми запояеми твърдосплавни пластини по БДС13673 - 13689 и ОН 04 72225-04 72244 от произвежданите от нас шестнадесет марки твърди сплави
 - монолитни твърдосплавни фрези
 - изтеглячни твърдосплавни дюзи, матрици, износоустойчиви части и твърдосплавни заготовки
- А ако са ви необходими нестандартни твърдосплавни инструменти АРСЕНАЛ- АД гр. Казанлък е в състояние да ви ги изработи по специална поръчка във възможно най-кратък срок на приемливи цени.

The production of cemented carbide products in ARSENAL Co Kazanlak was organized in 1960. The experience that was gained, as well as the research and development activities, the implementation of the most advanced equipment and technology achievements contribute to the high appraisal of our products, applied in many branches of industry.

The cemented carbide plant has got modern technical equipment and technology bought from the tools leading Swedish firm SANDVIK COROMANT. The precise control of our production gives you high productivity and a long life.

Cemented carbide plant belonging to ARSENAL Co offers you:

- turning and milling inserts for all fields of application according to ISO, including four grades with single and double layer wear-resistant coatings.
- all types brazed tips according to BNS 13673-13689 (Bulgarian National Standard) and ON 04 72225-04 72244 (Working standard) made of our 16 cemented carbide grades.
- solid carbide end mills
- drawing cemented carbide nozzles, dies, wear parts and cemented carbide blanks.

If you need any non-standard cemented carbide tools, ARSENAL Co is ready to produce them by special order at short dates and at rather advantageous prices.



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Механично закрепяеми пластини по ON 3120-65

Indexable inserts accprding to ON 3120-65

0.2004.0036	21
0.2004.0037	21
0.2004.0051	21
0.2004.0053	21
0.2004.0055	21
0.2004.0061	22
0.2004.0063	22
0.20047.0065	23

Монолитни твърдосплавни фрези Solid carbide endmills

25

H		C		L	
O		D		A	
P		E		B	
R		M		K	
S		V		W	
T					

Φ	M	s	D					
	m	d						
6.35	± 0.11	± 0.05						
9.52	± 0.11	± 0.05						
12.70	± 0.13	± 0.08						
15.87	± 0.18	± 0.10						
19.05	± 0.18	± 0.10						
25.04								
Φ	M	s	J. K. L.	s	U	s		
	m	d	m	d	m	d		
6.35	± 0.08	± 0.05	J ± 0.006 K ± 0.013 L ± 0.025	± 0.05	± 0.025	± 0.13	± 0.08	± 0.13
9.52	± 0.08	± 0.05		± 0.05		± 0.13	± 0.08	
12.70	± 0.13	± 0.08		± 0.08		± 0.20	± 0.13	
15.87	± 0.15	± 0.10		± 0.10		± 0.27	± 0.18	
19.05	± 0.15	± 0.10		± 0.10		± 0.27	± 0.18	
25.04	± 0.18	± 0.13		± 0.13		± 0.38	± 0.25	

	m	d	s
A	± 0.005	± 0.025	± 0.025
F	± 0.005	± 0.013	± 0.025
C	± 0.013	± 0.025	± 0.025
H	± 0.013	± 0.013	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.025	± 0.130
J	± 0.005	-	± 0.025
K	± 0.013	-	± 0.025
L	± 0.025	-	± 0.025

Означение
по ISO -
механично
закрепями
пластини
ISO code
key -
indexable
inserts

S

P

C

N

T

N

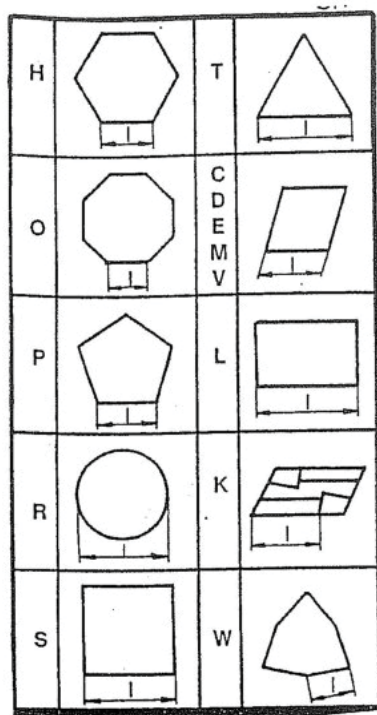
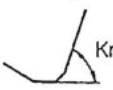
M

G

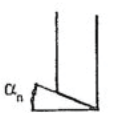
A	3°	D	15°	G	30°
B	5°	E	20°	N	0°
C	7°	F	25°	P	11°

N	40°-60°	T	40°-60°
R	40°-60°	Q	40°-60°
F	40°-60°	U	40°-60°
A	70°-90°	B	70°-90°
M	70°-90°	H	70°-90°
G	70°-90°	C	70°-90°
W	40°-60°	J	70°-90°
X	СПЕЦИАЛНИ - SPECIAL		

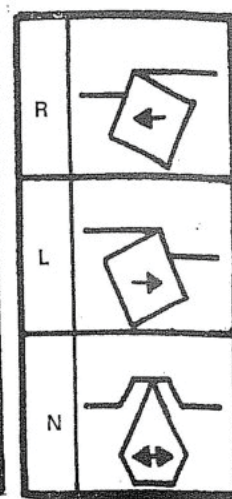
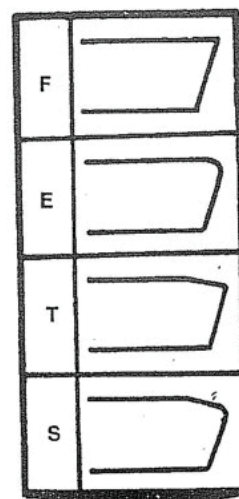
ТВЪРДОСПЛАВНИ ПЛАСТИНИ ЗА СТРУГОВАНЕ TURNING INSERTS

	Kr
A	45°
D	60°
E	75°
F	85°
P	90°



	α_n
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°



15

04

E

D

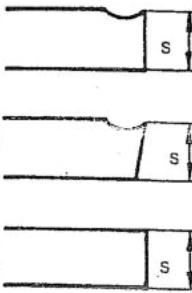
E

R

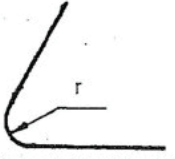
22

04

16

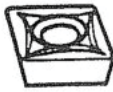
	S mm
01	1.59
T1	1.98
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52
12	12.70

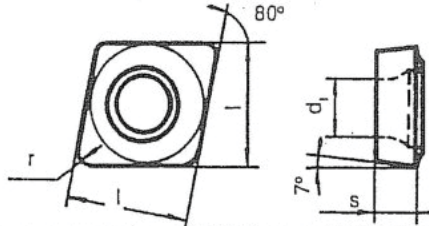


	r mm
00	0.2
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
24	2.4
32	3.2

ТВЪРДОСПЛАВНИ ПЛАСТИНИ ЗА СТРУГОВАНЕ TURNING INSERTS

CCMT





Допуски, мм
Tolerances, mm

$l = \pm 0.05$
 $s = \pm 0.13$
 $r = \pm 0.10$

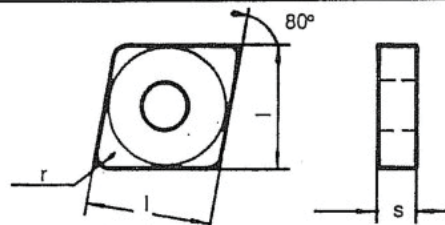
CCMT

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	d	s	r	
	06	CCMT 06 02 02	6.350	2.8	2.38	0.2	●
	09	CCMT 09 T3 04	9.525	4.4	3.97	0.4	○
	12	CCMT 12 04 08	12.700	5.5	4.76	0.8	○
	16	CCMT 16 05 12	15.875	5.5	5.55	1.2	○

Примерна поръчка: 100 бр. CCMT 09T304 BS1P
Ordering example: 100 pieces CCMT 09T304 BS1P

CNMG

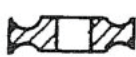




Допуски, мм
Tolerances, mm

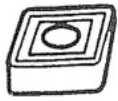
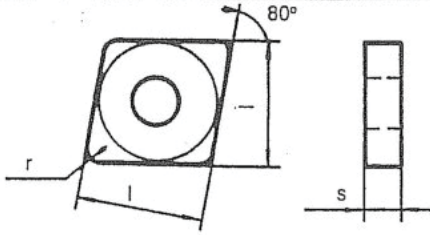
$l = 0.05$
 $s = 0.13$
 $r = 0.10$

CNMG

		Означение Ordering code	Размери, мм Dimensions, mm			
			l	s	r	
	12	CNMG 12 04 04	12.700	4.76	0.4	○
	12	CNMG 12 04 08	12.700	4.76	0.8	●
	12	CNMG 12 04 12	12.700	4.76	1.2	○

Примерна поръчка: 100 бр. CNMG 120404 BS1P
Ordering example: 100 pieces CNMG 120404 BS1P

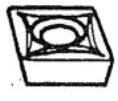
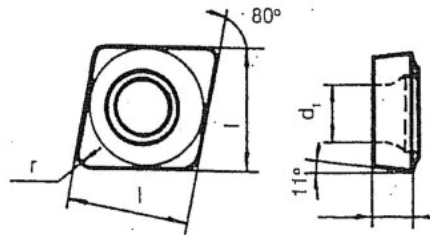
- - Тази форма е в редовно производство
This style is in regular production
- - Тази форма се изработва след специална поръчка
This style we produce by special order

CNMM			Допуски, мм Tolerances, mm $l = \pm 0.08$ ($l = 12.7$) $l = \pm 0.10$ ($l = 19.05$) $s = \pm 0.13$ $r = \pm 0.10$
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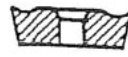
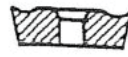
CNMM

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	CNMM 12 04 04	12.700	4.76	0.4	●
		CNMM 12 04 08	12.700	4.76	0.8	●
		CNMM 12 04 12	12.700	4.76	1.2	●
		CNMM 12 04 16	12.700	4.76	1.6	○
	19	CNMM 19 06 08	19.050	6.35	0.8	○
		CNMM 19 06 12	19.050	6.35	1.2	○
		CNMM 19 06 16	19.050	6.35	1.6	●
		CNMM 19 06 24	19.050	6.35	2.4	○

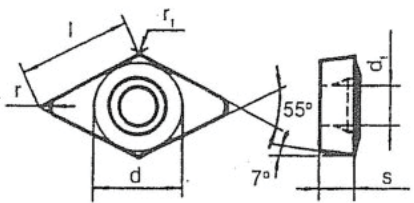
Примерна поръчка: 100 бр. CNMM 12 04 04 BS1P
Ordering example: 100 pieces CNMM 12 04 04 BS1P

CPMT			Допуски, мм Tolerances, mm $l = \pm 0.05$ $s = \pm 0.13$ $r = \pm 0.10$
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CPMT

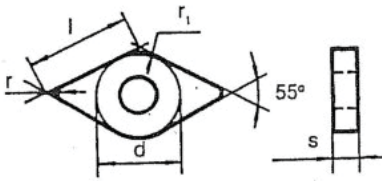
		Означение Ordering code	Размеры, мм Dimensions, mm				
			l	d ₁	s	r	
	12	CPMT 12 04 08	12.70	5.50	4.76	0.8	○

Примерна поръчка: 100 бр. CPMT 12 04 08 BS1P
Ordering example: 100 pieces CPMT 12 04 08 BS1P

DCMT			Допуски, мм Tolerances, mm $l = \pm 0.05$ $s = \pm 0.13$ $r = \pm 0.10$
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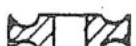
DCMT		Означение Ordering code Размеры мм Dimensions, mm	
		l d d ₁ s r r ₁	
	07 11	DCMT070204 7.8 6.350 3.75 2.38 0.2 0.2 DCMT11T308 11.6 9.525 4.40 3.97 0.4 0.4	○ ○

Примерна поръчка: 100 бр. DCMT 07 02 04 BS1P
Ordering example: 100 pieces DCMT 07 02 04 BS1P

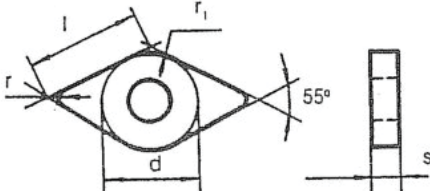
DNMA	DNMG				Допуски, мм Tolerances, mm $d = \pm 0.08$ $s = \pm 0.13$ $r = \pm 0.10$
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DNMA		Означение Ordering code Размеры мм Dimensions, mm	
		l d s r r ₁	
	15	DNMA 15 06 12 15.5 12.7 6.35 1.2 1.2 DNMA 15 06 16 15.5 12.7 6.35 1.6 1.2	● ○

Примерна поръчка: 100 бр. DNMA 15 06 12 BS1P
Ordering example: 100 pieces DNMA 15 06 12 BS1P

DNMG		Означение Ordering code Размеры мм Dimensions, mm	
		l d s r r ₁	
	15	DNMG 15 06 08 15.5 12.7 6.35 0.8 1.2 DNMG 15 06 12 15.5 12.7 6.35 1.2 1.2	● ○

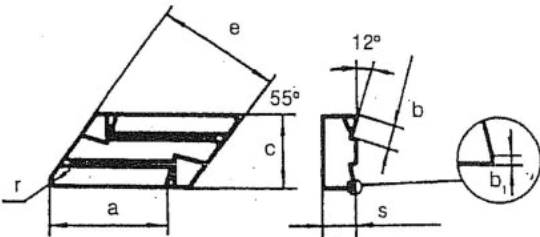
Примерна поръчка: 100 бр. DNMG 15 06 12 BS1P
Ordering example: 100 pieces DNMG 15 06 12 BS1P

DNMM			Допуски, мм Tolerances, mm $d=\pm 0.08$ $s=\pm 0.13$ $r=\pm 0.10$
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DNMM

		Означение Ordering code	Размеры мм Dimensions, mm					
			l	d	s	r	r ₁	
	15	DNMM 15 06 08	15.5	12.7	6.35	0.8	1.2	O
		DNMM 15 06 12	15.5	12.7	6.35	1.2	1.2	O

Примерна поръчка: 100 бр. DNMM 15 06 12 BS1P
Ordering example: 100 pieces DNMM 15 06 12 BS1P

KNUX R, KNUX L			Допуски, мм Tolerances, mm $e=\pm 0.13$ $c=\pm 0.13$ $s=\pm 0.13$ $r=\pm 0.10$
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KNUX

		Означение Ordering code	Размеры мм Dimensions, mm							
			a	e	c	s	b	b ₁	r	
	16	KNUX160405R11	6.0	16.15	9.52	4.76	2.2	0.3	0.5	●
		KNUX160405L11	6.0	16.15	9.52	4.76	2.2	0.3	0.5	●
		KNUX160410R12	6.0	16.15	9.52	4.76	2.2	0.3	1.0	●
		KNUX160410L12	6.0	16.15	9.52	4.76	2.2	0.3	1.0	●

Примерна поръчка: 100 бр. KNUX 160410 R12 BS6
Ordering example: 100 pieces KNUX 160410 R12 BS6

RCMX		Допуски, мм Tolerances, mm $d = \pm 0.08$ ($d = 12$) $d = \pm 0.10$ ($d = 16, 2$) $s = \pm 0.13$
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RCMX

		Означение Ordering code	Размеры, мм Dimensions, mm			
			d	s	b	
	12	RCMX 12 04 00	4.2	4.76	0.20	○
	16	RCMX 16 06 00	4.2	6.35	0.25	○

Примерна поръчка: 100 бр. RCMX 12 04 00 BS1P
Ordering example: 100 pieces RCMX 12 04 00 BS1P

RNMG, RNMX		Допуски, мм Tolerances, mm $d = \pm 0.08$ $s = \pm 0.13$
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RNMG

		Означение Ordering code	Размеры, мм Dimensions, mm			
			d	d	s	
	12	RNMG 12 04 00	12.7	5.156	4.76	●

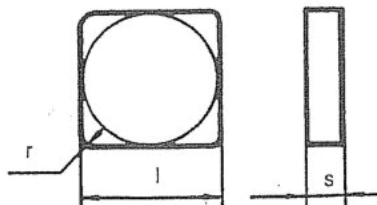
Примерна поръчка: 100 бр. RNMG 12 04 00 BS1P
Ordering example: 100 pieces RNMG 12 04 00 BS1P

RNMX

		Означение Ordering code	Размеры, мм Dimensions, mm			
			d	d	s	
	38	RNMX 38 12 00	38.1	12.7	12.7	●

Примерна поръчка: 100 бр. RNMX 32 12 00 BS1P
Ordering example: 100 pieces RNMX 38 12 00 BS1P

SNGN



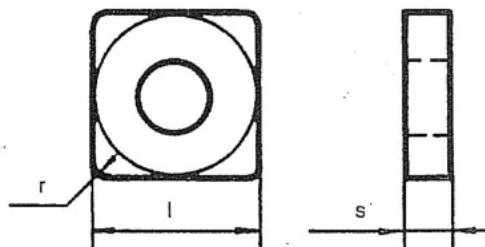
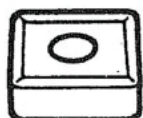
Допуски, мм
Tolerances, mm
 $l = \pm 0.025$
 $s = \pm 0.13$
 $r = \pm 0.10$

SNGN

		Означение Ordering code	Размеры, мм Dimensions, mm			
			d	d	s	
	12	SNGN 12 04 02	12.700	4.76	0.2	●
		SNGN 12 04 04	12.700	4.76	0.4	●
		SNGN 12 04 08	12.700	4.76	0.8	●
		SNGN 12 04 12	12.700	4.76	1.2	●
	15	SNGN 12 04 16	12.700	4.76	1.6	●
		SNGN 15 04 02	15.875	4.76	0.2	●
		SNGN 15 04 04	15.875	4.76	0.4	●
		SNGN 15 04 08	15.875	4.76	0.8	●
		SNGN 15 04 12	15.875	4.76	1.2	●
		SNGN 15 04 16	15.875	4.76	1.6	●

Примерна поръчка: 100 бр. SNGN 12 04 08 BS1P
Ordering example: 100 pieces SNGN 12 04 08 BS1P

SNMG, SNMA

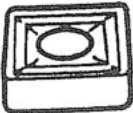
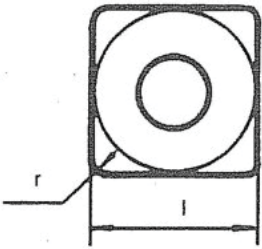
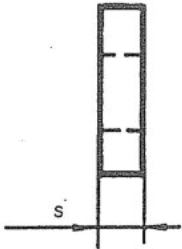


Допуски, мм
Tolerances, mm
 $l = \pm 0.08$ ($l = 12,71$)
 $l = \pm 0.10$ ($l = 15,875$,
 $l = 19,05$)
 $s = \pm 0.13$
 $r = \pm 0.10$

SNMG, SNMA

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	SNMG 12 04 08	12.700	4.76	0.8	○
		SNMG 12 04 12	12.700	4.76	1.2	●
	19	SNMG 19 06 12	19.050	6.35	1.2	○
		SNMG 19 06 16	19.050	6.35	1.6	●
	15	SNMA 15 06 08	15.875	6.35	0.8	●

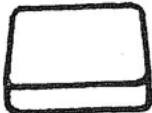
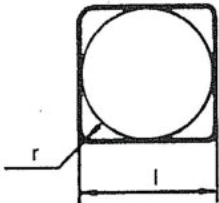
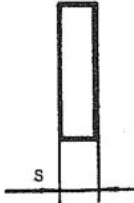
Примерна поръчка: 100 бр. SNMG 19 06 12 BS1P
Ordering example: 100 pieces SNMG 19 06 12 BS1P

SNMM				Допуски, мм Tolerances, mm $l = \pm 0.08$ ($l = 12,71$) $l = \pm 0.10$ ($l = 15,875$) $l = \pm 0.10$ ($l = 19,05$) $s = \pm 0.13$ $r = \pm 0.10$
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SNMM

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	SNMM 12 04 08	12.700	4.76	0.8	●
		SNMM 12 04 12	12.700	4.76	1.2	●
		SNMM 12 04 16	12.700	4.76	1.6	⊗
	19	SNMM 19 06 12	19.050	6.35	1.2	○
		SNMM 19 06 16	19.050	6.35	1.6	●

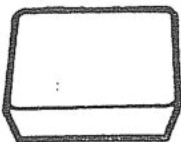
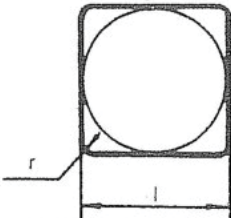
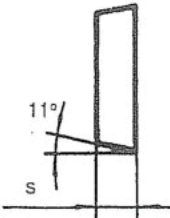
Примерна поръчка: 100 бр. SNMM 12 04 12 BS1P
Ordering example: 100 pieces SNMM 12 04 12 BS1P

SNUN				Допуски, мм Tolerances, mm $l = \pm 0.13$ ($l = 12,700$) $s = \pm 0.13$ $r = \pm 0.10$
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SNUN

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	SNUN 12 04 08	12.700	4.76	0.8	●
		SNUN 12 04 12	12.700	4.76	1.2	●

Примерна поръчка: 100 бр. SNUN 12 04 12 BS1P
Ordering example: 100 pieces SNUN 12 04 12 BS1P

SPGN, SPUN				Допуски, мм Tolerances, mm SPGN SPUN $l = \pm 0.025$ $l = \pm 0.13$ $s = \pm 0.130$ $s = \pm 0.13$ $r = \pm 0.100$ $r = \pm 0.10$
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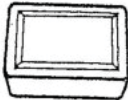
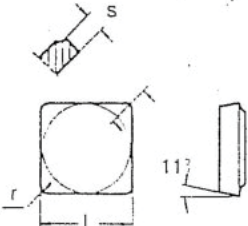
SPGN

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	09	SPGN 09 03 04	9.525	3.18	0.4	●
		SPGN 09 03 08	9.525	3.18	0.8	●
	12	SPGN 12 03 04	12.700	3.18	0.4	●
		SPGN 12 03 08	12.700	3.18	0.8	●
	15	SPGN 12 03 12	12.700	3.18	1.2	●
		SPGN 15 04 04	15.875	4.76	0.4	●
		SPGN 15 04 08	15.875	4.76	0.8	●
		SPGN 15 04 12	15.875	4.76	1.2	●
		SPGN 15 04 16	15.875	4.76	1.6	●

Примерна поръчка: 100 бр. SPGN 12 03 08 BS1P
Ordering example: 100 pieces SPGN 12 03 08 BS1P
SPUN

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	SPUN 12 03 04	12.700	3.18	0.4	●
		SPUN 12 03 08	12.700	3.18	0.8	●

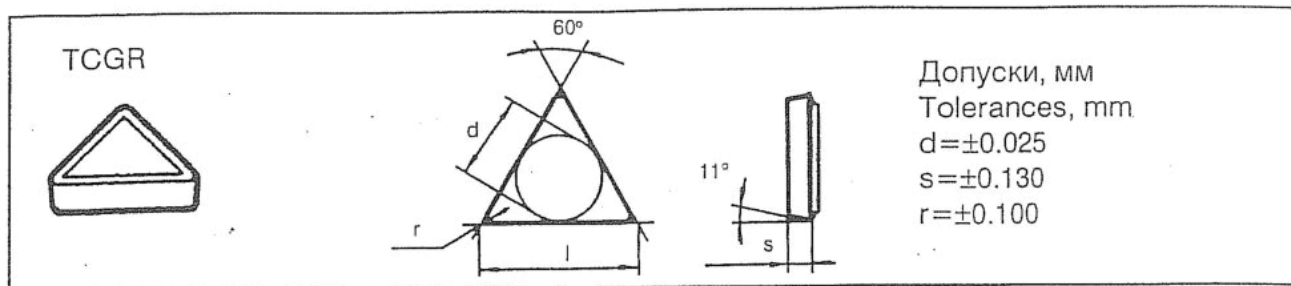
Примерна поръчка: 100 бр. SPUN 12 03 08 BS1P
Ordering example: 100 pieces SPUN 12 03 08 BS1P

SPGR			Допуски, мм Tolerances, mm $l = \pm 0.13$ ($l = 12.700$) $s = \pm 0.13$ $r = \pm 0.10$
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SPGR

		Означение Ordering code	Размеры, мм Dimensions, mm			
			l	s	r	
	12	SPGR 12 03 12	12.700	3.18	1.2	●

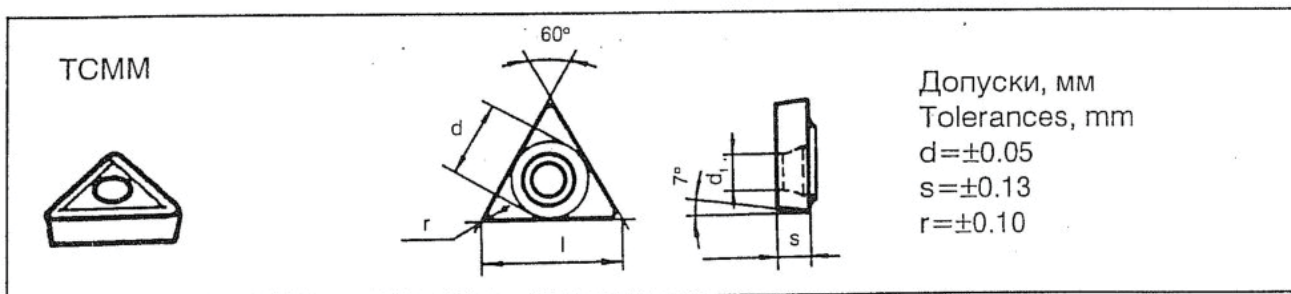
Примерна поръчка: 100 бр. SPGR 12 03 12 BS1P
Ordering example: 100 pieces SPGR 12 03 12 BS1P



TCGR

		Означение Ordering code	Размеры мм Dimensions, mm				
			l	d	s	r	
	06	TCGR 06 01 04	6.876	3.969	1.59	0.4	○

Примерна поръчка: 100 бр. TCGR 06 01 04 BS1P
Ordering example: 100 pieces TCGR 06 01 04 BS1P

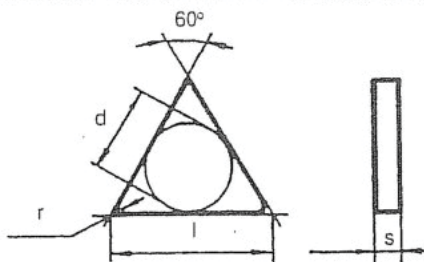


TCMM

		Означение Ordering code	Размеры мм Dimensions, mm					
			l	d	d ₁	s	r	
	09	TCMM 09 02 04	9.63	5.55	2.5	2.38	0.4	○

Примерна поръчка: 100 бр. TCMM 09 02 04 BS1P
Ordering example: 100 pieces TCMM 09 02 04 BS1P

TNGN, TNUN



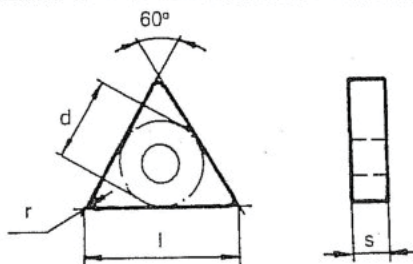
Допуски, мм
Tolerances, mm
TNGN TNUN
 $d = \pm 0.025$ $d = \pm 0.08$
 $s = \pm 0.130$ $s = \pm 0.13$
 $r = \pm 0.100$ $r = \pm 0.10$

TNGN, TNUN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	d	s	r	
	16	TNGN 16 03 04	16.5	9.525	3.18	0.4	●
		TNGN 16 03 08	16.5	9.525	3.18	0.8	●
		TNGN 16 03 12	16.5	9.525	3.18	1.2	●
		TNGN 16 04 08	16.5	9.525	4.76	0.8	○
		TNGN 16 04 12	16.5	9.525	4.76	1.2	○
		TNUN 16 04 08	16.5	9.525	4.76	0.8	●

Примерна поръчка: 100 бр. TNUN 16 04 08 BS1P
Ordering example: 100 pieces TNUN 16 04 08 BS1P

TNMA, TNMG



Допуски, мм
Tolerances, mm
 $d = \pm 0.05$ ($d = 9.525$)
 $d = \pm 0.08$ ($d = 12.7$)
 $s = \pm 0.13$
 $r = \pm 0.10$

TNMA, TNMG

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	d	s	r	
	16	TNMA 16 04 04	16.5	9.525	4.76	0.4	○
		TNMA 16 04 08	16.5	9.525	4.76	0.8	○
		TNMA 16 04 12	16.5	9.525	4.76	1.2	○
		TNMA 16 04 16	16.5	9.525	4.76	1.6	○
		TNMG 16 04 08	16.5	9.525	4.76	0.8	●
		TNMG 16 04 12	16.5	9.525	4.76	1.2	●
	22	TNMG 22 04 08	22.0	12.700	4.76	0.8	●
		TNMG 22 04 12	22.0	12.700	4.76	1.2	●
		TNMG 22 04 16	22.0	12.700	4.76	1.6	●
		TNMG 22 04 16	22.0	12.700	4.76	1.6	●

Примерна поръчка: 100 бр. TNMA 16 04 12 BS1P
Ordering example: 100 pieces TNMA 16 04 12 BS1P

TNMM		Допуски, мм Tolerances, mm d=±0.05 (d=9.525) d=±0.08 (d=12.70) d=±0.10 (d=15.875) s=±0.13 r=±0.10
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TNMM

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	d	s	r	
	16	TNMM 16 04 08	16.5	9.525	4.76	0.8	●
		TNMM 16 04 12	16.5	9.525	4.76	1.2	○
	22	TNMM 22 04 08	22.0	12.700	4.76	0.8	○
		TNMM 22 04 12	22.0	12.700	4.76	1.2	●
		TNMM 22 04 16	22.0	12.700	4.76	1.6	●
		TNMM 27 06 16	27.5	15.875	6.35	1.6	○

Примерна поръчка: 100 бр. TNUN 16 04 08 BS1P

Ordering example: 100 pieces TNUN 16 04 08 BS1P

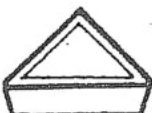
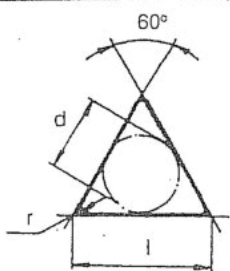
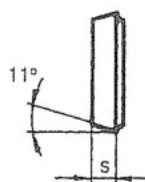
TPGN, TPUN		Допуски, мм Tolerances, mm TPGN TPUN d=±0.025 d=±0.08 (d=9.525) s=±0.13 d=±0.13 (d=12.7) r=±0.10 s=±0.13 r=±0.10
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TPGN, TPUN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	d	s	r	
	11	TPGN 11 03 00	11.0	6.35	3.18	0.2 max	●
		TPGN 11 03 04	11.0	6.35	3.18	0.4	●
		TPGN 11 03 08	11.0	6.35	3.18	0.8	●
	16	TPGN 16 03 00	16.5	9.525	3.18	0.2 max	●
		TPGN 16 03 04	16.5	9.525	3.18	0.4	●
		TPGN 16 03 08	16.5	9.525	3.18	0.8	●
		TPGN 16 03 12	16.5	9.525	3.18	1.2	●
	22	TPGN 22 04 08	22.0	12.700	4.76	0.8	●
		TPGN 22 04 12	22.0	12.700	4.76	1.2	●
		TPGN 22 04 16	22.0	12.700	4.76	1.6	●
	11	TPUN 11 03 04	11.0	6.35	3.18	0.4	●
		TPUN 11 03 08	11.0	6.35	3.18	0.8	●
	16	TPUN 16 03 08	16.5	9.525	3.18	0.8	○
		TPUN 16 03 12	16.5	9.525	3.18	1.2	●
	22	TPUN 22 04 12	22.0	12.700	4.76	1.2	●

Примерна поръчка: 100 бр. TPUN 11 03 04 BS1P

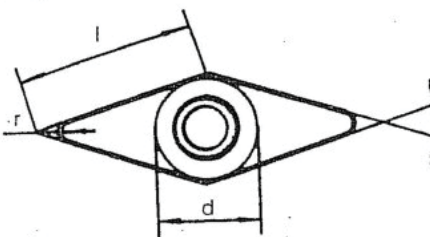
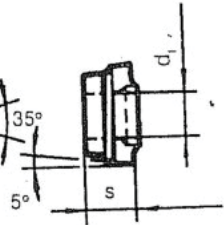
Ordering example: 100 pieces TPUN 11 03 04 BS1P

TPGR, TPMR				Допуски, мм Tolerances, mm TPGR TPMR $d=\pm 0.025$ $d=\pm 0.05$ $s=\pm 0.13$ $s=\pm 0.13$ $r=\pm 0.10$ $r=\pm 0.10$
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TPGR, TPMR

		Означение Ordering code	Размери, мм Dimensions, mm					
			l	d	s	r	α	
	11	TPGR 11 03 04	11.0	6.350	3.18	0.4	11°	○
		TPGR 11 03 08	11.0	6.350	3.18	0.8	11°	○
	16	TPGR 16 03 08	16.5	9.525	3.18	0.8	11°	○
		TPGR 16 03 12	16.5	9.525	3.18	1.2	11°	○
	09	TPMR 09 02 04	9.623	5.556	2.38	0.4	11°	○
	11	TPMR 11 03 04	11.0	6.350	3.18	0.4	11°	●
	16	TPMR 16 03 08	16.5	9.525	3.18	0.8	11°	●

Примерна поръчка: 100 бр. TPGR 11 03 04 BS1P
Ordering example: 100 pieces TPGR 11 03 04 BS1P

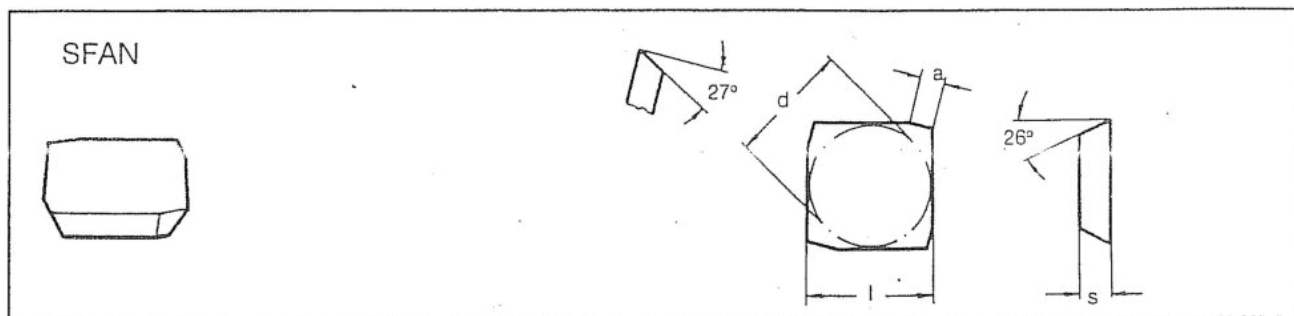
VBMT, VBMW				Допуски, мм Tolerances, mm $d=\pm 0.05$ $s=\pm 0.13$ $r=\pm 0.10$
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VBMT, VBMW

		Означение Ordering code	Размери, мм Dimensions, mm					
			l	d	d ₁	s	r	
	16	VBMT 16 04 08	16.6	9.525	4.4	4.76	0.8	○
		VBMW 16 04 04	16.5	9.525	4.4	4.76	0.4	○

Примерна поръчка: 100 бр. VBMT 16 04 08 BS1P
Ordering example: 100 pieces VBMT 16 04 08 BS1P

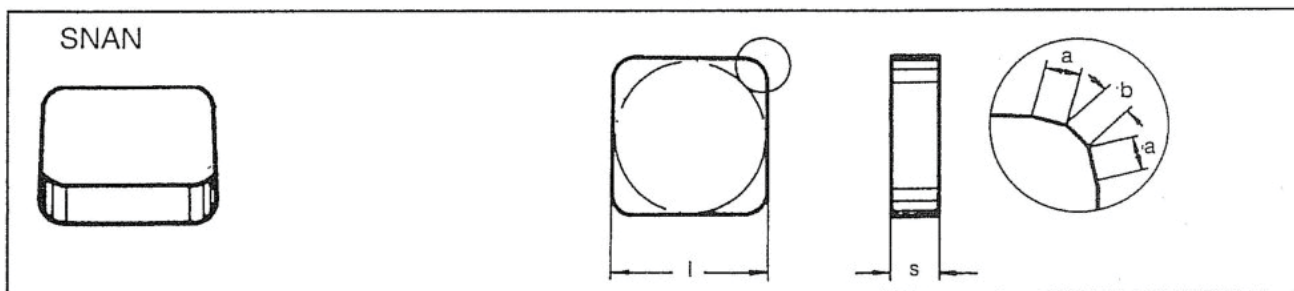
ТВЪРДОСПЛАВНИ ПЛАСТИНИ ЗА ФРЕЗОВАНЕ MILLING INSERTS



SFAN

		Означение Ordering code	Размери, мм Dimensions, mm			
			l	s	a	
	12	SFAN 12 03 EF R/L	12.7	3.18	2.5	●

Примерна поръчка: 100 бр. SFAN 12 03 EFR BSM30
Ordering example: 100 pieces SFAN 12 03 EFR BSM30

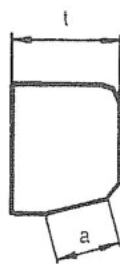
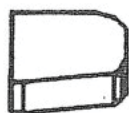


SNAN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	s	a	b	
	12	SNAN 12 04 EN R/L	12.700	4.76	1.4	1.0	●
	15	SNAN 15 04 EN R	15.875	4.76	1.5	0.9	●

Примерна поръчка: 100 бр. SNAN 12 04 ENL BSM30
Ordering example: 100 pieces SNAN 12 04 ENL BSM30

SNEX

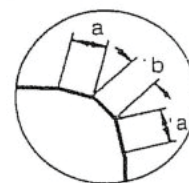
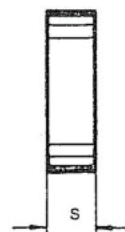
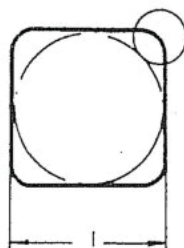
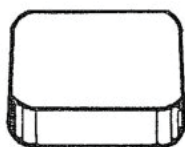


SNEX

		Означение Ordering code	Размери, мм Dimensions, mm			
			d	s	a	
	12	SNEX 12 04 EN N-1	12.700	4.76	10	○
	15	SNEX 15 04 EN N-1	15.785	4.76	10	○

Примерна поръчка: 100 бр. SNEX 12 04 EN N-1 BSM30
Ordering example: 100 pieces SNEX 12 04 EN N-1 BSM30

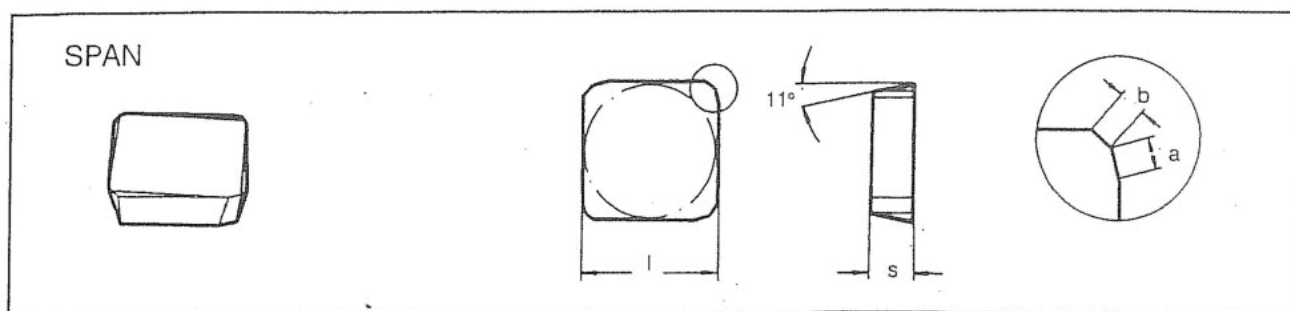
SNKN



SNKN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	s	a	b	
	12	SNKN 12 04 ENT R	12.700	4.76	1.5	0.9	●
		SNKN 12 04 ENT L	12.700	4.76	1.5	0.9	●
	15	SNKN 15 04 ENT R	15.875	4.76	1.5	0.9	●

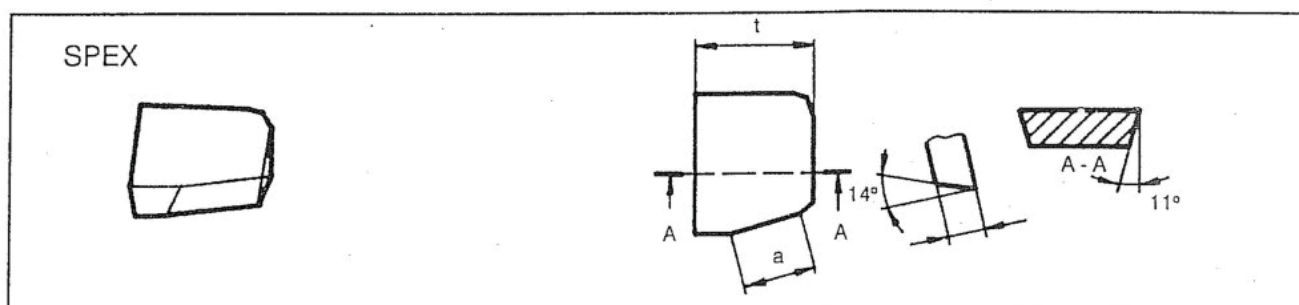
Примерна поръчка: 100 бр. SNKN 12 04 ENT R BSM30
Ordering example: 100 pieces SNKN 12 04 ENT R BSM30



SPAN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	s	a	b	
	12	SPAN 12 03 ED R	12.700	3.18	1.4	1.0	●
		SPAN 12 03 ED L	12.700	3.18	1.4	1.0	●
	15	SPAN 15 04 ED R	15.875	4.76	1.4	1.0	●

Примерна поръчка: 100 бр. SPAN 12 03 EDR BSM30
Ordering example: 100 pieces SPAN 12 03 EDR BSM30

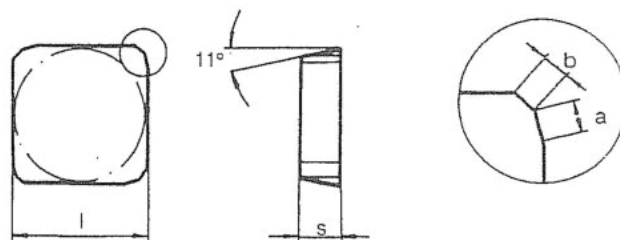
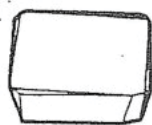


SPEX

		Означение Ordering code	Размери, мм Dimensions, mm			
			l	d	d ₁	
	12	SPEX 12 03 ED R-1	12.700	3.18	10	○
		SPEX 12 03 ED L-1	12.700	3.18	10	○
	15	SPEX 15 04 ED R-1	15.875	4.76	10	○

Примерна поръчка: 100 бр. SPEX 12 03 EDR-1 BSM30
Ordering example: 100 pieces SPEX 12 03 EDR-1 BSM30

SPKN

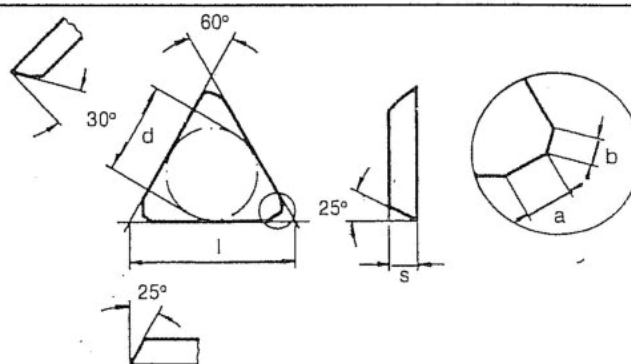
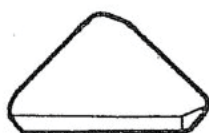


SPKN

		Означение Ordering code	Размери, мм Dimensions, mm				
			l	s	d	d	
	12	SPKN 12 03 ED R	12.700	3.18	1.4	1.0	●
		SPKN 12 03 ED L	12.700	3.18	1.4	1.0	●
	15	SPKN 15 04 ED R	15.875	4.76	1.4	1.0	●

Примерна поръчка: 100 бр. SPKN 12 03 ED R BSM30
Ordering example: 100 pieces SPKN 12 03 ED R BSM30

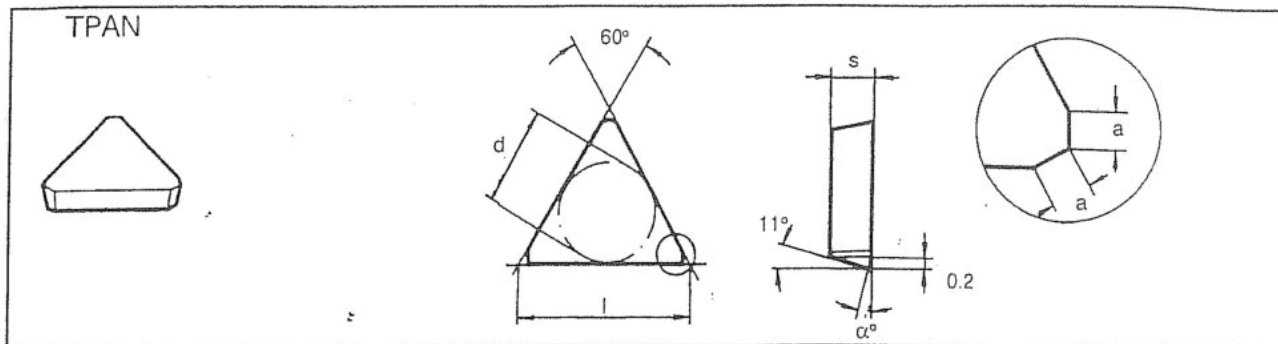
TFAN



TFAN

		Означение Ordering code	Размери, мм Dimensions, mm					
			l	d	s	a	b	
	22	TFAN 22 03 PF R	22.0	12.7	3.18	2.5	0.7	●

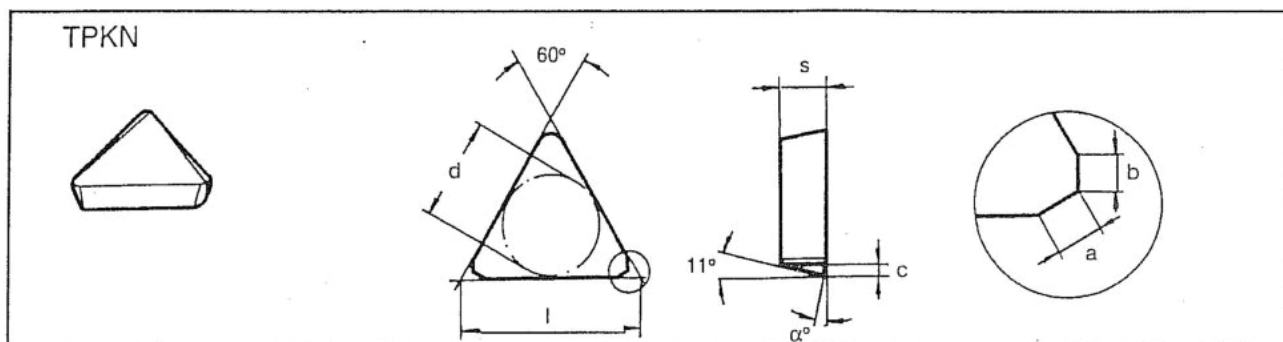
Примерна поръчка: 100 бр. TFAN 22 03 PF R BSM30
Ordering example: 100 pieces TFAN 22 03 PF R BSM30



TPAN

		Означеніе Ordering code	Размери, мм Dimensions, mm					
			l	d	s	a	α	
	11	TPAN 11 03 PP	11.0	6.350	3.18	0.7	15°	
	16	TPAN 16 03 PP	16.5	9.525	3.18	1.2	25°	

Примерна поръчка: 100 бр. TPAN 16 03 PP BSM30
Ordering example: 100 pieces TPAN 16 03 PP BSM30

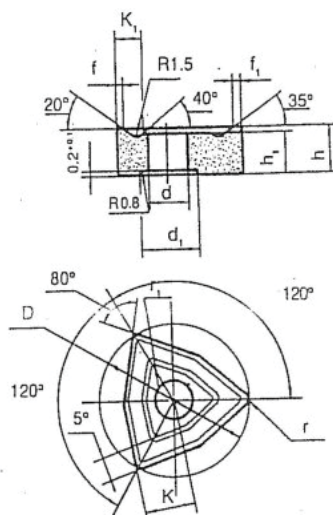


TPKN

		Означеніе Ordering code	Размери, мм Dimensions, mm							
			l	d	s	a	b	c	α	
	16	TPKN 16 03 PPR	16.	9.5	3.1	1.2	1.0	-	-	
	22	TPKN 22 04 PDR	22.	12.	4.7	1.4	0.7	0.4	10°	

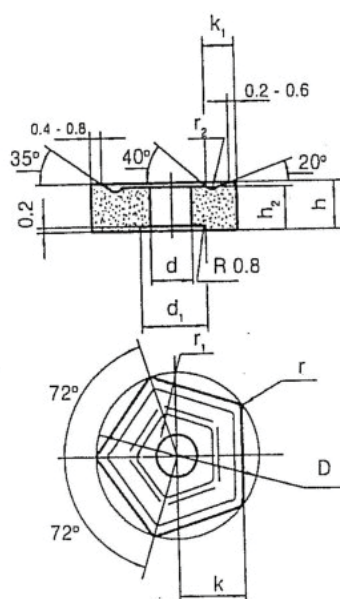
Примерна поръчка: 100 бр. TPKN 16 03 PRP BSM30
Ordering example: 100 pieces TPKN 16 03 PRP BSM30

МЕХАНИЧНО ЗАКРЕПЯЕМИ ТВЪРДОСПЛАВНИ ПЛАСТИНИ ПО ОН 3120-65
INDEXABLE INSERTS ACCORDING TO ON 3120-65



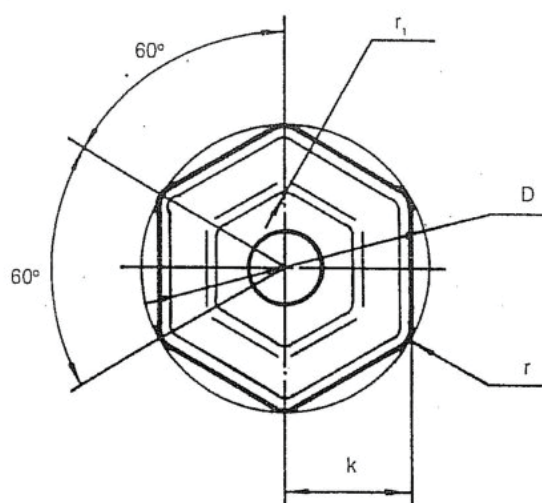
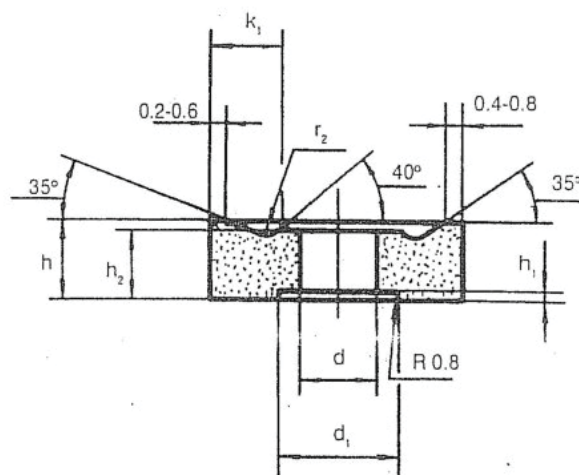
Означение Ordering code	Размери, мм Dimensions, mm											
	D	d	d ₁	h	h ₂	k	k ₁	f	f ₁	r	r ₁	
0.02004.0036 В	22	6.2	10	5.5	5.4	7.4	3.2	0.2 - 0.6	0.4 - 0.8	1	1.5	●
0.2004.0037 В	26	6.2	12	6.5	6.4	8.7	3.8	0.2 - 0.6	0.4 - 0.8	1	1.5	●

Примерна поръчка: 10 бр. 0.2004.0037 BS6
Ordering example: 10 pieces 0.2004.0037 BS6



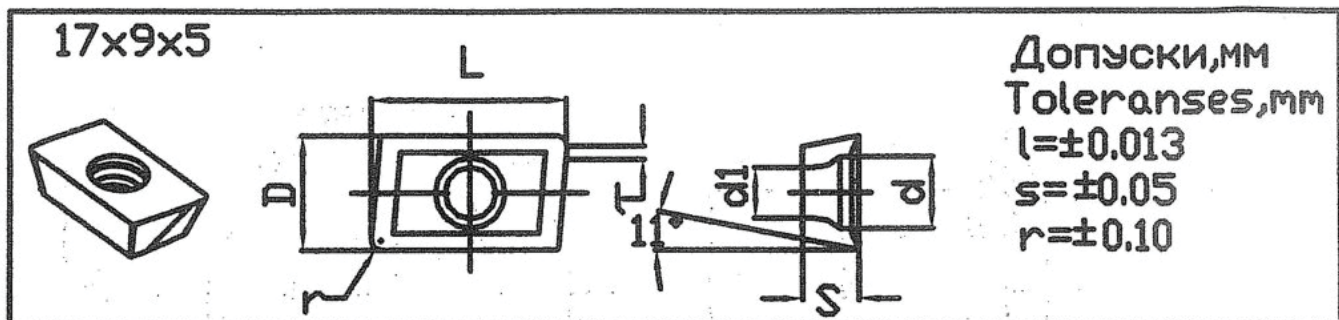
Означение Ordering code	Размеры, мм Dimensions, mm										
	D	d	d ·	h	h ₂	k	k ₁	r	r ₁	r ₂	
0.2004.0051 A	18	5.2	10	4.5	4.4	7.6	3.7	0.8	2	1	●
0.2004.0053 A	22	6.2	12	5.5	5.4	9.1	4.0	1.0	2	1.5	●
0.2004.0055 A	26	6.2	14	6.5	6.4	10.7	4.5	1.0	2.5	1.5	●

Примерна поръчка: 10 бр. 0.2004.0051 BS6
Ordering example: 10 pieces 0.2004.0051 BS6



Означение Ordering code	Размери, мм Dimensions, mm										
	D	d	d	h	h ₂	k	k ₁	r	r ₁	r ₂	
0.2004.0061 A	18	5.2	10	4.5	4.4	7.9	3.3	0.8	2	1	●
0.2004.0063 A	22	6.2	12	5.5	5.4	9.6	3.6	1.0	2	1.5	●
0.2004.0065 A	26	6.2	14	6.5	6.4	11.4	4.0	1.0	2.5	1.5	●

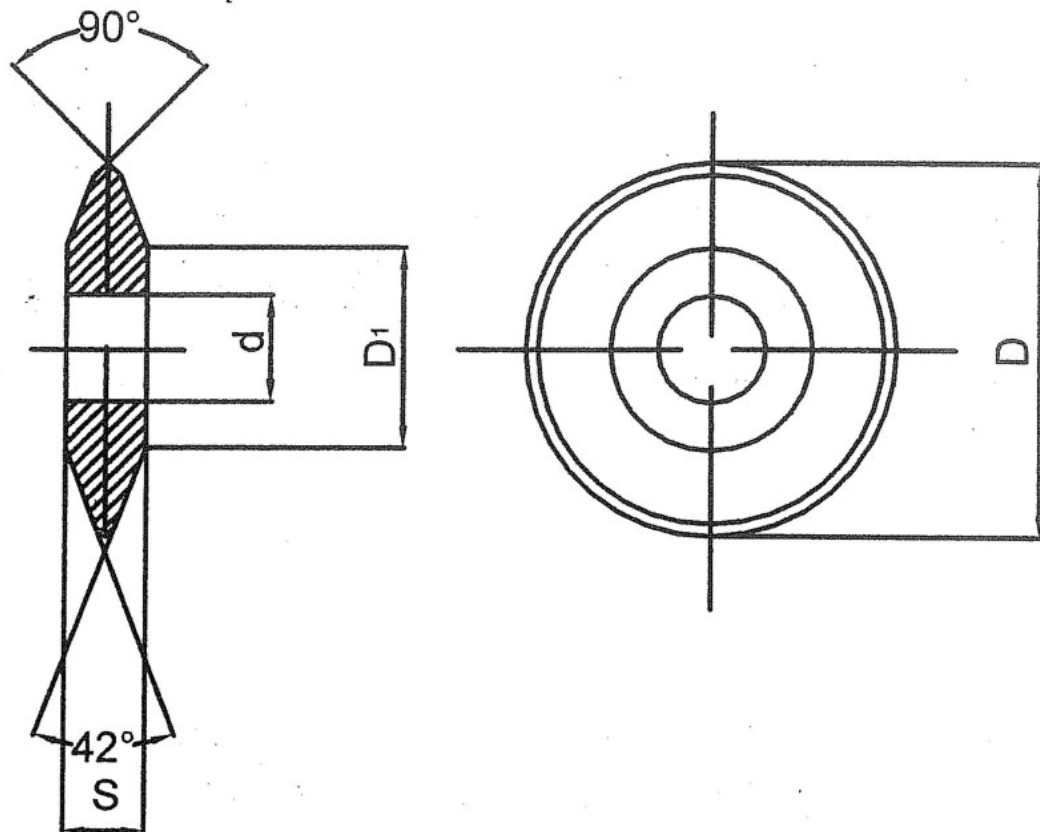
Примерна поръчка: 10 бр. 0.2004.0061 BS6
Ordering example: 10 pieces 0.2004.0061 BS6



		Означение Ordering code	Размеры мм Dimension, mm							
		L	D	S	d	d1	r			
		17x9x5	16.89	9.68	4.76	6.0	4.4	0.8		

Примерна поръчка: 100 бр. 17x9x5 BH20
 Ordering example: 100 pieces 17x9x5 BH20

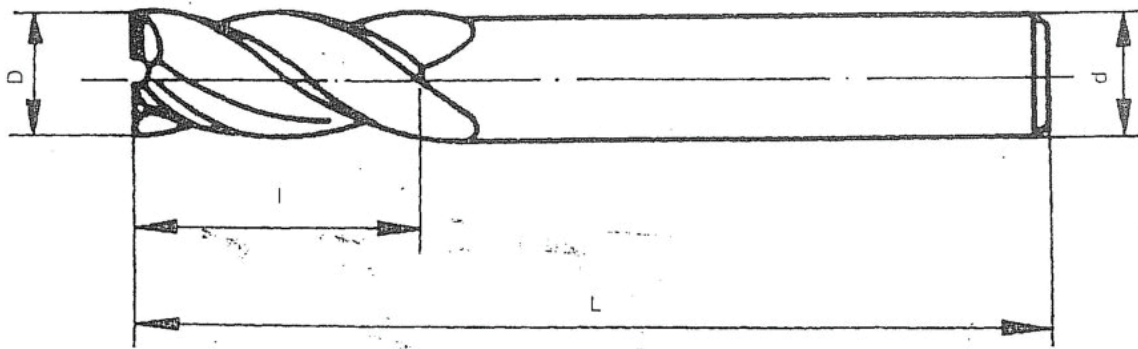
РЕЗЕЦ
CUTTER



ФОРМА STYLE	РЕЗЕЦ CUTTER				
ОЗНАЧЕНИЕ Ordering code	$D \pm 0.25$	D_1	$D \pm 0.15$	$S \pm 0.05$	α
$\varnothing 21.4$	$\varnothing 21.4$	$\varnothing 11.6$	$\varnothing 6.15$	4.6	90°

Примерна поръчка: 100 бр. $\varnothing 21.4$ K20
Ordering example: 100 pieces $\varnothing 21.4$ K20

МОНОЛИТНИ ТВЪРДОСПЛАВНИ ФРЕЗИ
SOLID CARBIDE ENDMILLS



Ø	Z	Размери, мм Dimensions, mm				Марка Grade
		D	d	L	l	
4	2, 3, 4	4	4	40	12	BS6, BH20
5	2, 3, 4	5	5	50	14	BS6, BH20
6	2, 3, 4	6	6	50	16	BS6, BH20
7	2, 3, 4	7	7	60	18	BS6, BH20
8	2, 3, 4	8	8	60	20	BS6, BH20
10	2, 3, 4	10	10	70	22	BS6, BH20
12	2, 3, 4	12	12	70	22	BS6, BH20
14	2, 3, 4	14	14	75	25	BS6, BH20

Примерна поръчка: 10 бр. монолитна фреза 8x60 z=2 BH20

Ordering example: 10 pieces solid carbide endmills 8x60 z=2 BH20

МАРКИ ТВЪРДОСПЛАВНИ ПЛАСТИНИ ЗА СТРУГОВАНЕ

МАРКА	ОБЛАСТ НА ПРИЛОЖЕНИЕ ПО ISO		ВИД ОБРАБОТКА
	основна	допълнит.	
BS1P	P10	P01-P15	За чистова обработка на стомана и стоманени отливки при благоприятни условия, висока скорост на рязане и малко подаване. Предимно за повърхностно струговане.
BS4, BS30	P30	P25-P35	За средна до тежка чернова обработка на стомана и стоманени отливки при средни и тежки режими в неблагоприятни условия. Сравнително ниска скорост на рязане, голямо подаване.
BS6	P40 M30	P30-P45 M20-M40	За много тежка чернова обработка на стомана и стоманени отливки. Тежки условия. Ниска скорост на рязане, голямо подаване, голяма дълбочина на рязане.
BH20, BH30	M20 K20	M15-M30 K15-K25	За тежка чернова обработка на чугун в неблагоприятни условия. Ниска скорост на рязане и голямо подаване. За получистова и чернова обработка на топлоустойчиви сплави. Също за тежки условия на обработка. Висока износоустойчивост.
BH1P, BH15	K10	K01-K20	За чистова и получистова обработка на чугун, легиран чугун, бронз и месинг. Сравнително висока скорост на рязане и средно подаване. Много висока износоустойчивост. Отлична марка сплав за обработка на стомана.
BR1P	M10		За чистова и получистова обработка на топлоустойчиви сплави и неръждаема стомана. Висока устойчивост срещу изкъртване. Сравнително висока скорост на рязане, средно подаване. Предназначена основно за повърхностно струговане.
BSH	M20		За чернова обработка при тежките режими на манганови стомани и ковък чугун, образуващ непрекъсната стружка. Подходяща за обработка на железопътни колела.

CARBIDE GRADES FOR TURNING

Grade	Field of application acc. to ISO		Machining type
	Basic	Supplement	
BS1P	P10	P01-P15	Finishing of steel and steel castings. Favourable conditions. High cutting speeds, moderate feeds. Suitable for surface turning.
BS4, BS30	P30	P25-P35	Medium to heavy roughing of steel and steel castings under unfavourable conditions. Comparatively low cutting speeds, heavy feeds.
BS6	P40 M30	P30-P45 M20-M40	Heavy roughing of steel and steel castings. Difficult conditions. Low cutting speeds, heavy feeds, large cutting depths.
BH20, BH30	M20 K20	M15-M30 K15-K25	Heavy roughing of cast iron under unfavourable conditions. Low cutting speeds, heavy feeds. Light and rough machining of heat resistant alloys. Also for difficult machining conditions, high wear resistance
BH1P, BH15	K10	K01-K20	Finishing and light roughing of cast iron. Also for alloyed cast iron, bronze and brass. Relatively high cutting speeds and moderate feeds.
BR1P	M10		Finishing and light roughing of heat resistant alloys and stainless steel. High resistance to notch wear. Comparatively high cutting speeds, moderate feeds. Especially suitable for surface turning.
BSH	M20		Grade for special applications. Heavy roughing of MN-steels and ductile alloy cast iron with a longchipping tendency. Suitable re-turning of railway wheels.

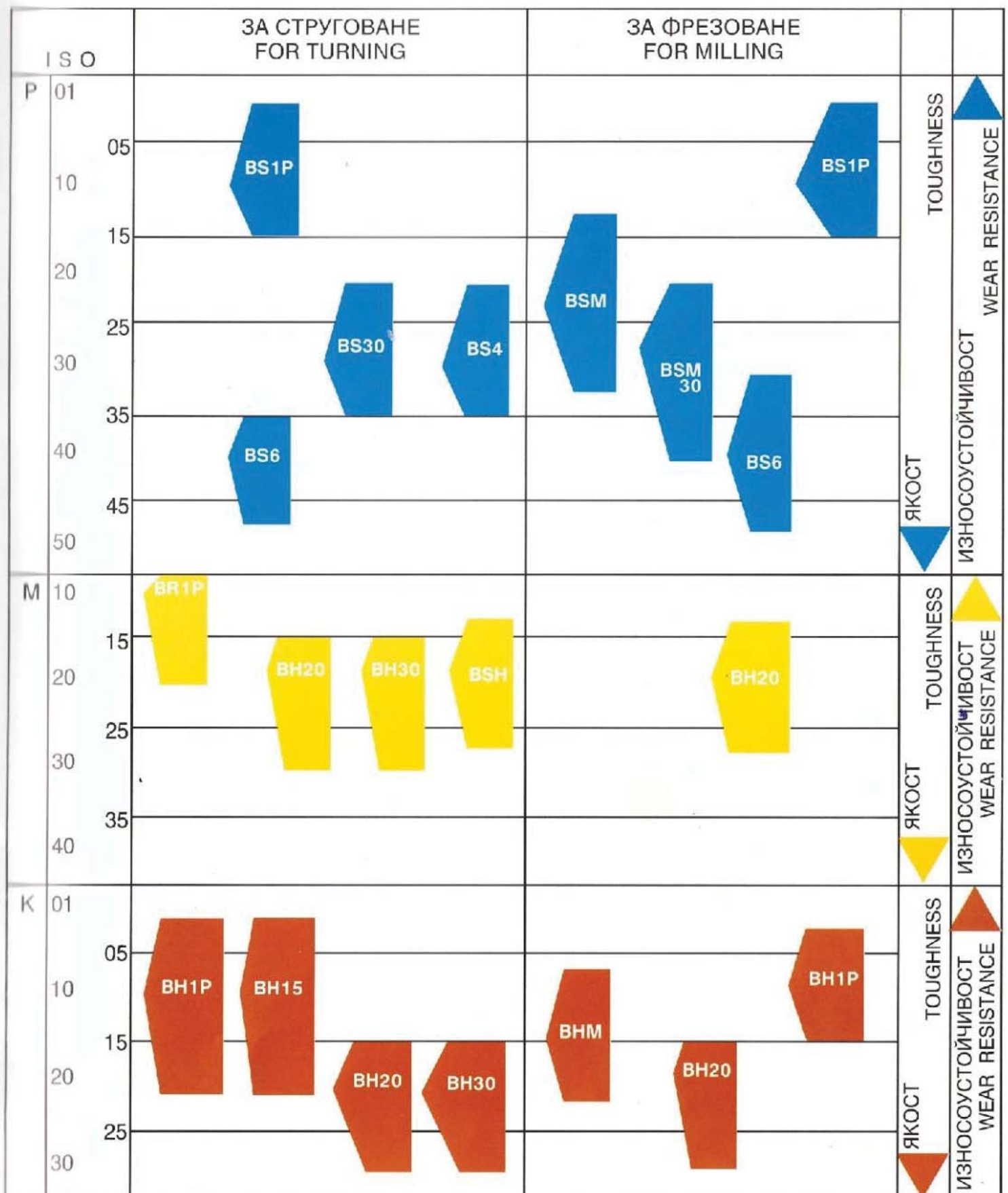
МАРКИ ТВЪРДОСПЛАВНИ ПЛАСТИНИ ЗА ФРЕЗОВАНЕ

МАРКА	ОБЛАСТ НА ПРИЛОЖЕНИЕ ПО ISO		ВИД ОБРАБОТКА
	основна	допълнит	
BS1P	P10	P01-P15	За чистова и получистова обработка на стомана и стоманени отливки при високи скорости на рязане и средно подаване при благоприятни условия. Издържа много високи температури на рязане.
BSM	P25	P15-P30	За фрезование на стомана и стоманени отливки. Много висока устойчивост срещу топлинни удари и пластично деформиране. Много добра якост.
BSM30	P30	P20-P40	За фрезование на стомана, и стоманени отливки в операциите, където е необходимо да има едновременна якост, изнosoустойчивост и топлоустойчивост.
BS6	P40	P30-P45	За чернова обработка на въглеродна стомана, неръждаема стомана и стоманени отливки, с малка скорост на рязане и тежки работни условия. Използва се при голяма дълбочина на рязане и големи подавания.
BH20	M20 K20		За чистова и получистова обработка на широка гама високолегирани стоманени материали и топлоустойчиви сплави. Ниска скорост на рязане и голямо подаване.
BH1P	K10	K05-K15	За чистова и чернова обработка на чугун, бронз, месинг. Високи скорости и средни подавания.
BHM	K15	K10-K20	Предимно за фрезование на нисколегиран чугун, например отливки за автомобилната промишленост. Много висока устойчивост на пластично деформиране.

CARBIDE GRADES FOR MILLING

Grade	Field of application acc. to ISO		Machining type
	Basic	Supplement	
BS1P	P10	P01-P15	Finishing and light roughing of steel and steel castings at high cutting speeds and moderate feeds under favourable working conditions. Withstands very high cutting temperatures.
BSM	P25	P15-P30	Milling of steel and steel castings, very high resistance to thermal shocks and plastic deformation. Very good toughness.
BSM30	P30	P20-P40	Milling of steel, steel castings in operations where there are simultaneous demands for toughness, wear resistance and resistance to thermal cracking.
BS6	P40	P30-P45	Roughing of carbon steel, stainless steel and steel castings at low cutting speeds, difficult working conditions. Used for large cutting depths and heavy feeds.
BH20	M20 K20		Finishing and light roughing of wide variety of high alloy steel materials, heat resistant alloys. Low cutting speeds and high feeds.
BH1P	K10	K05-K15	Finishing and roughing of cast iron, bronze and brass. High cutting speeds and moderate feeds.
BHM	K15	K10-K20	Developed especially for milling low-alloy cast iron, E.G. castings for the automotive industry. Very high resistance to wear and plastic deformation.

ТВЪРДИ СПЛАВИ — ОБЛАСТИ НА ПРИЛОЖЕНИЕ CARBIDE GRADES — FIELDS OF APPLICATION





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