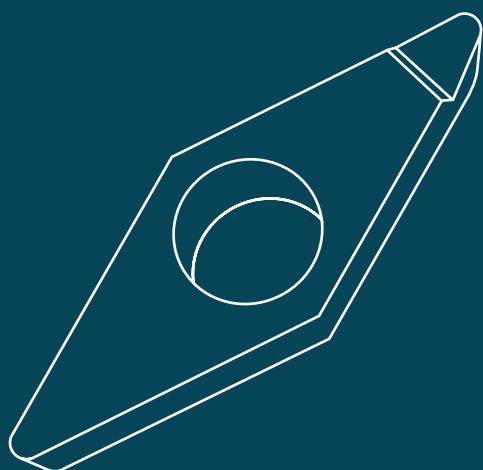
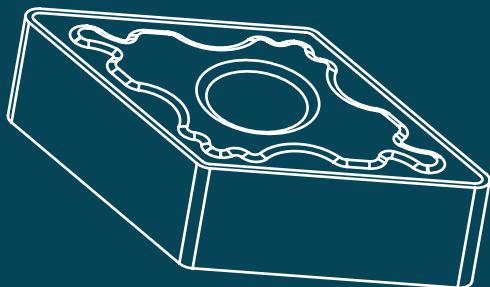


TURNING / carbide



**C N M G 12 04 08**

**1 Geometry**

<b>C</b>		
<b>D</b>		
<b>K</b>		
<b>S</b>		
<b>T</b>		
<b>V</b>		
<b>W</b>		

**2 Clearance Angle**

<b>B</b>		5°
<b>C</b>		7°
<b>P</b>		11°
<b>N</b>		0°

**3 Tolerance**

<b>G</b>		
<b>M</b>	$\pm 0,05$ $\pm 0,15$	$\pm 0,13$
<b>U</b>	$\pm 0,08$ $\pm 0,25$	$\pm 0,13$

**4 Shape**

<b>A</b>	
<b>G</b>	
<b>M</b>	
<b>T</b>	
<b>X</b>	<b>Special</b>

**5 Shape**

<b>C</b>	06 09 12 16 19 25	
<b>D</b>	07 11 15	
<b>K</b>	16	
<b>S</b>	09 12 15 19 25	
<b>T</b>	09 11 16 22	
<b>V</b>	11 16 22	
<b>W</b>	06 08	

**6 Thickness**

<b>02</b>	2,38
<b>03</b>	3,18
<b>T3</b>	3,97
<b>04</b>	4,76
<b>06</b>	6,35
<b>09</b>	9,52

**7 Corner Radius**

<b>02</b>	0,20
<b>04</b>	0,40
<b>08</b>	0,80
<b>12</b>	1,20
<b>16</b>	1,60
<b>24</b>	2,40

# Carbide

TURNING

<b>U</b>	<b>M</b>
8	9

<b>CS</b>	<b>5</b>	<b>2</b>	<b>25</b>	<b>S</b>
10	11	12	13	14

<b>8</b>	Series of C/B
<b>H</b>	Huskar Series
<b>U</b>	Undying Series
<b>S</b>	Spirit Series
<b>T</b>	Tusk Series
<b>A</b>	Aluminium

<b>9</b>	ISO Grade
Heavy Machining	<b>P</b> H. Roughing
	<b>R</b> Roughing
	<b>F</b> Functional
Turning	<b>R</b> Roughing
	<b>M</b> Medium
	<b>F</b> Finishing
Stainless Steel	<b>J</b> Ultra Finishing
	<b>S</b> Standart
	<b>K</b> Roughing
Aluminium	<b>LU</b> Functional

<b>10</b>	Coating & Material
<b>CS</b>	CVD Coated Carbide
<b>CD</b>	Double CVD Coated
<b>PS</b>	PVD Coated Carbide
<b>PB</b>	New PVD Coating
<b>KS</b>	Ceramic
<b>SS</b>	Cermet
<b>US</b>	Uncoated

<b>11</b>	Workpiece Material
<b>2</b>	Non-Ferrous Material
<b>4</b>	Hardened Steel
<b>5</b>	Steel
<b>7</b>	Stainless Steel
<b>8</b>	Cast Iron
<b>9</b>	General Machining

<b>12</b>	Machining
<b>1~3</b>	Turning
<b>4</b>	Threading
<b>5</b>	Grooving
<b>9</b>	Milling

<b>13</b>	ISO Grade
<b>05</b>	
<b>10</b>	
<b>15</b>	
<b>20</b>	
<b>25</b>	
<b>30</b>	
<b>35</b>	
<b>40</b>	
<b>45</b>	

<b>14</b>	Grade
<b>S</b>	Premium
<b>non</b>	Normal

TURNING  
GROOVING  
THREADING

MILLING  
DRILLING

ENDMILLS  
DRILLS

SPARE PARTS  
INDEX

### Grades

		K	P	M	N	
INDEX		K01 K10 K20 K30 K40	P01 P10 P20 P30 P40	M01 M10 M20 M30 M40	N01 N10 N20 N30 N40	
SPARE PARTS						
DRILLS						
ENDMILLS						
DRILLING						
MILLING						
THREADING						
GROOVING						
TURNING						
CARBIDE CVD		CS8205 CS8115 CS8215 CS8125	CS5215 CS5215S CS5225 CS5225S CS5235 CS5240	CS7125S		
CARBIDE PVD			PS5125	PS7110S PS7220S PS7120		
CARBIDE UNCOATED					US2115	
CERMET UNCOATED		SS9115	SS9115 SS9125	SS9115		

## CVD Turning Grades

MATERIAL	GRADE	ISO	Color	Operation
<b>P</b>	<b>CS5215</b>	P05-P25	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Optimization for high speed machining due to combining the substrate of superior wear resistance and toughness with the coating of excellent thermal crack/plastic deformation
	<b>CS5215S</b>	P05-P25	YELLOW	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Optimization for high speed machining due to combining the substrate of superior wear resistance and toughness with the coating of excellent thermal crack/plastic deformation
	<b>CS5225</b>	P15-P35 M10-M20	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				First recommended grade for general machining with the use of high toughness substrate and coating layer with improved welding/chipping resistance
<b>M</b>	<b>CS5225S</b>	P15-P35 M10-M20	YELLOW	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				First recommended grade for general machining with the use of high toughness substrate and coating layer with improved welding/chipping resistance
	<b>CS5235</b>	P25-P40 M25-M40	YELLOW - BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Medium to low speed machining of steel
	<b>CS5240</b>	P30-P40 M30-M40	YELLOW - BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Medium to high speed machining of stainless steel
<b>K</b>	<b>CS7125S</b>	M20-M30	BLACK	MT-TiCN+TiC+a-Al <sub>2</sub> O <sub>3</sub>
				For high speed machining of stainless steel
	<b>CS8205</b>	K01-K10	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				As adapting highly hard substrate with superior CVD coated which has excellent resistance for thermal & oxidation, Excellent performance in casting iron continuous machining
	<b>CS8115</b>	K10-K20	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Medium speed machining of cast iron
<b>K</b>	<b>CS8215</b>	K10-K20	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Medium speed machining of cast iron
<b>K</b>	<b>CS8125</b>	K20-K30	BLACK	MT-TiCN+TiC+Al <sub>2</sub> O <sub>3</sub> +TiN
				Interrupted cutting for gray cast iron and ductile cast iron

**CS5225S**

Universal grade especially for machining forged automobile components and bearing steel both in continuous and interrupted cutting. Available for all kinds of steels - carbon steel, alloy steel, rolled steel, tool steel, mild steel, bearing steel and other special kinds of steel. New coating technology increases welding resistance and chipping resistance, which leads to longer tool life



TiN coating layer with superior welding resistance

TiC + Al<sub>2</sub>O<sub>3</sub> coating layer with superior heat resistance

TiCN coating layer with superior chipping resistance

Exclusive substrate material for coating with improved wear resistance.

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

### PVD Turning Grades

MATERIAL	GRADE	ISO	Color	Operation
<b>P</b>	<b>PS5125</b>	P05-P25	DARK GRAY	2-4 micron Nano TiAlN PVD Coating
				Stable machinability with chipping resistance fracture resistance and welding resistance, Medium, roughing and heavy interrupted cutting for stainless steel and forged steel
<b>M</b>	<b>PS7110S</b>	M20-M30	COPPER	PVD(Cotated) - TiAlSiN, Premium grade
				As adapting highly hard substrate, Excellent in medium speed machining of stainless steel. As adapting Salina coating which has excellent resistance for thermal & oxidation
<b>M</b>	<b>PS7120</b>	M15-M25	YELLOW	2-4 micron Nano AlCrN AlCrSiN Coating
				Medium, roughing and heavy interrupted cutting for st. steel and forged steel
<b>M</b>	<b>PS7220S</b>	M10-M30	COPPER	PVD(Cotated) - TiAlSiN, Premium grade
				Excellent in medium speed machining of stainless steel. As adapting Salina coating which has excellent resistance for thermal & oxidation

### Uncoated Carbide Grades

MATERIAL	GRADE	ISO	Color	Operation
<b>N</b>	<b>US2115</b>	K05-K25	Silver	Ultra fine substrate
				Increased wear & chipping resistance as using a ultra fine substrate, Excellent tool life with special surface treatment & and sharp cutting edge of ALU chip breaker

### Cermet Carbide Grades

MATERIAL	GRADE	ISO	Color	Operation
<b>UNI</b>	<b>SS9115</b>	P05-P25	SILVER	For continuous machining of cold/hot forged steel and Sintered ferrous alloy at high speed and low depth of cut
				
	<b>SS9125</b>	P05-P25	SILVER	For high interrupted machining of cold/hot forged steel and Sintered ferrous alloy at high feed and high depth of cut
				

Chipbreakers Selection (Negative  )

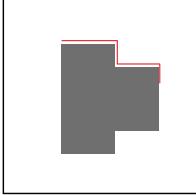
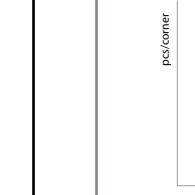
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MA FLAT	21	26	32	38		47	
MG BOX	21	26	32	38	45	47	
ALU	21	26	32	38		47	
HQ	21	26		39		47	
PM	22			39	45	47	
ST		26		39		48	
TK	22	27	32	39		48	
TM	22	27				48	
TS	22	27	32	39	45	48	
UF		27	33	39	45	48	
UM	22	27	33	39	45	48	
UR	23	28	33	39		48	
US	23	28	33	39		49	
OTHERS			32 (TF)	38 (R/L-P)		47 (HA)	
			33 (ZR)	39 (R/L-C)			
			34 (HTR)	39 (UH)			
				39 (VQ)			

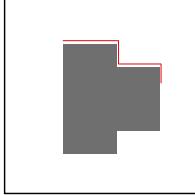
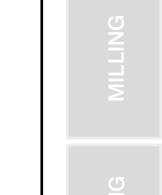
TURNING | GROOVING | THREADING | MILLING | DRILLING | ENDMILLS | DRILLS | SPARE PARTS | INDEX

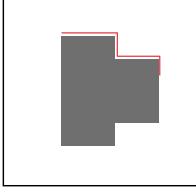
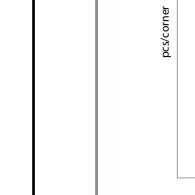
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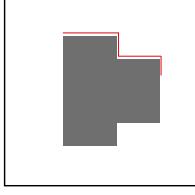
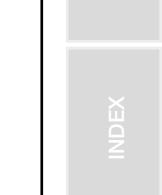
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L-F	 18					
L/R-W	 18					
L-Y					 42	
ALU	 18	 24	 31	 36	 42	 44
CG	 19	 24	 31	 36	 42	 44
HF	 19	 24	 31	 36	 42	
HM	 19	 24	 31	 36	 42	
HQ	 19	 25	 37	 42		
HR	 19	 25	 37	 42		
TS	 19	 25	 37	 43		
VM	 19	 25	 37	 43		
VQ	 19	 25				
VW		 25				

### Machining Examples

P	Carbon Steel (1.1040)	
<b>■Workpiece</b>		Hub
<b>■Cutting Conditions</b>	Vc (m/min)= 250	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
<b>■Designation</b>	Insert	CNMG120408-UM CS5225
	Toolholder	DCLNR2525-M12
<b>■Test Result</b>		
	120 CS5225	80 competitor
		

P	Alloy Steel (2379)	
<b>■Workpiece</b>		Automobile Part
<b>■Cutting Conditions</b>	Vc (m/min)= 250	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
<b>■Designation</b>	Insert	CNMG120408-UM CS5215S
	Toolholder	DCLNR2525-M12
<b>■Test Result</b>		
	60 CS5215S	40 competitor
		

M	Stainless Steel (316L)	
<b>■Workpiece</b>		Valve
<b>■Cutting Conditions</b>	Vc (m/min)= 120	fn (mm/rev)= 0.2
	ap (mm)= 1,5	Wet
<b>■Designation</b>	Insert	CNMG120408-TS PS7220S
	Toolholder	DCLNR2525-M12
<b>■Test Result</b>		
	30 PS7220S	20 competitor
		

K	Gray Cast Iron (GG25)	
<b>■Workpiece</b>		Disc
<b>■Cutting Conditions</b>	Vc (m/min)= 350	fn (mm/rev)= 0.25
	ap (mm)= 1,5	Wet
<b>■Designation</b>	Insert	CNMA120408 CS8215
	Toolholder	DCLNR2525-M12
<b>■Test Result</b>		
	15 CS8215	11 competitor
		

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

Range ISO K

TURNING

GROOVING

THREADING

MILLING

DRILLING

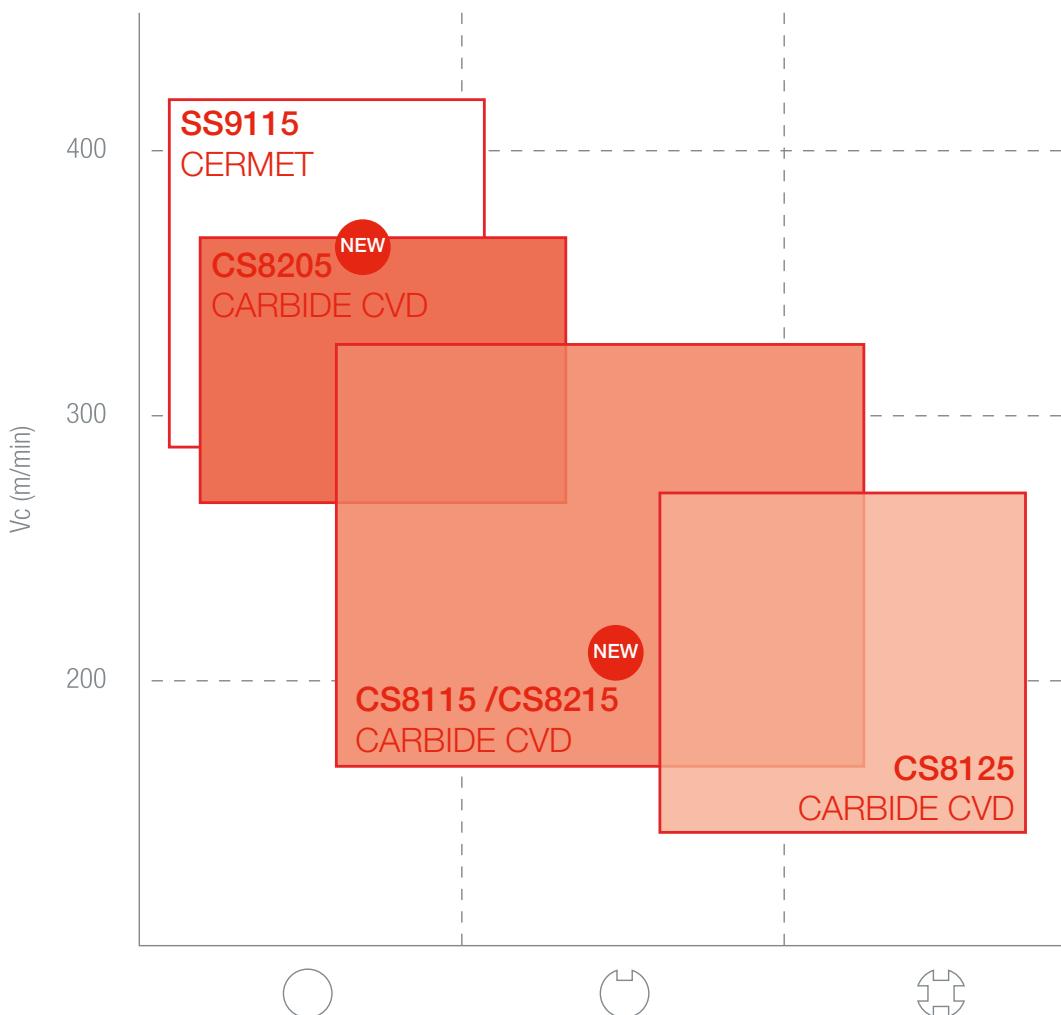
ENDMILLS

DRILLS

SPARE PARTS

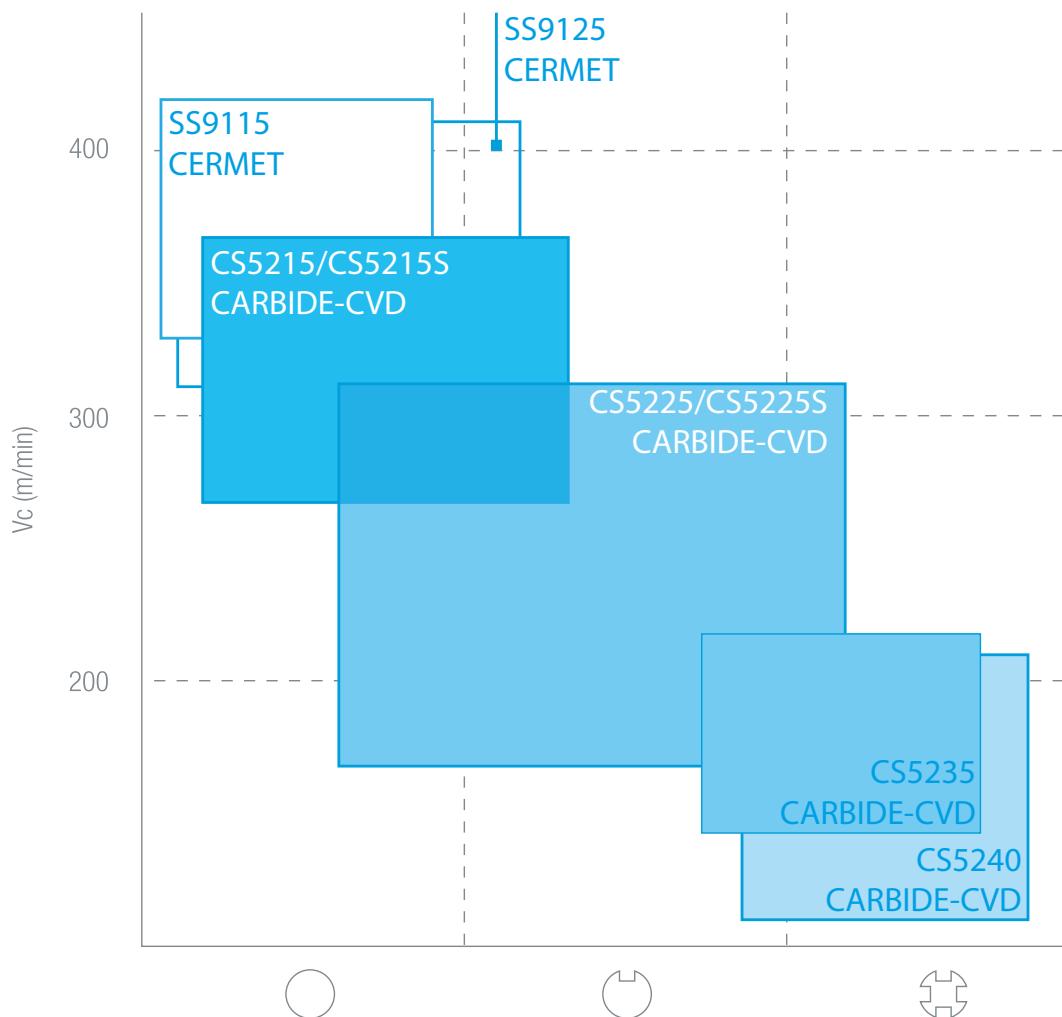
INDEX

### Grades



Range ISO P

### Grades



TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

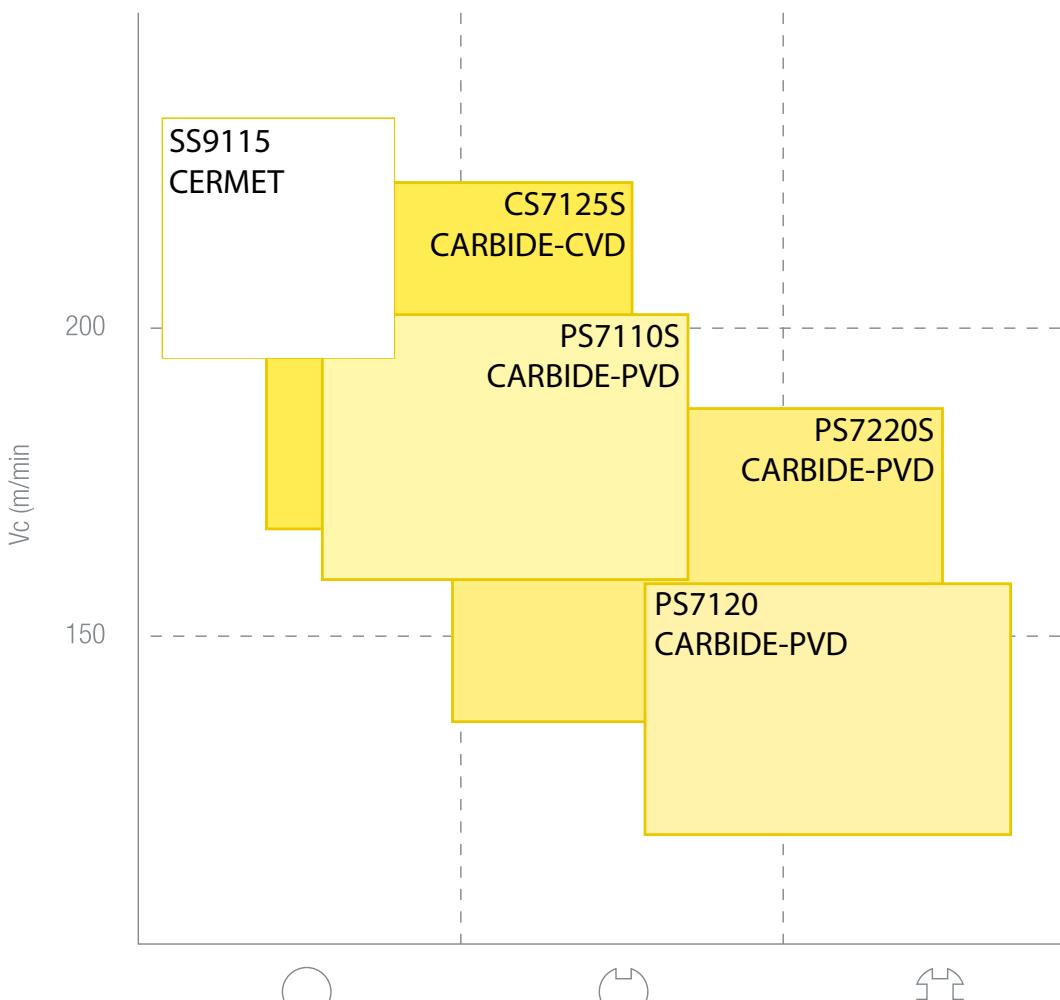
DRILLS

SPARE PARTS

INDEX

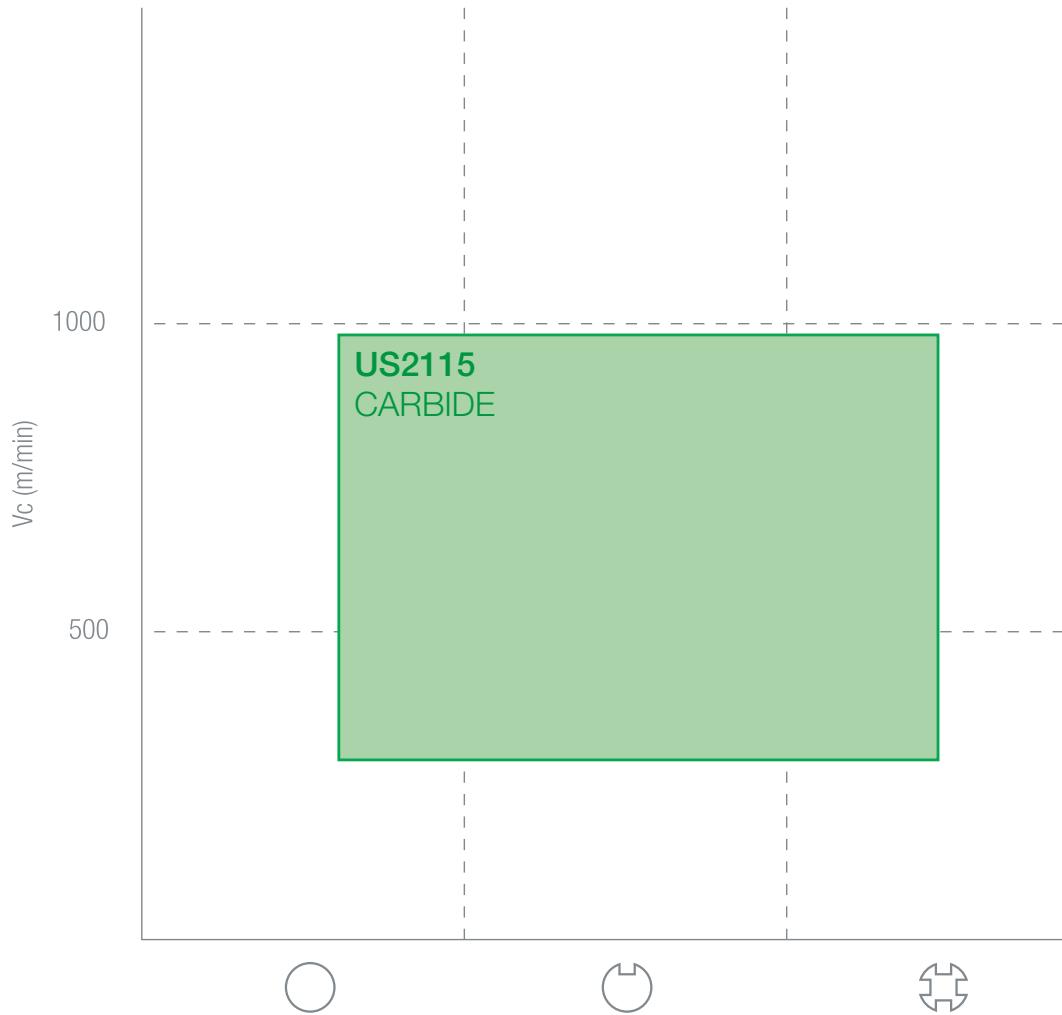
Range ISO M

### Grades



Range ISO N

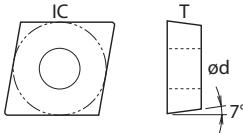
### Grades



INDEX	SPARE PARTS	DRILLS	ENDMILLS	DRILLING	MILLING	THREADING	GROOVING	TURNING
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### POSITIVE 7° with hole

**CC□□**



CC □□	0602 □□	09T3 □□	1204 □□
<b>IC</b>	6,35	9,525	12,7
<b>T</b>	2,38	3,97	4,76
<b>Ød</b>	2,80	4,40	5,50
Holder ►	126	126	126

DESCRIPTION	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115	CERMET	CARBIDE
	CCGT060202EL-U															●	●			
	CCGT060204EL-U															●	●			
	CCGT09T302EL-U															●	●			
	CCGT09T304EL-U															●	●			
	CCGT060202ER-U															●	●			
	CCGT060204ER-U															●	●			
	CCGT09T302ER-U															●	●			
	CCGT09T304ER-U															●	●			
	CCGT030102L-F															●	●			
	CCGT030104L-F															●	●			
	CCGT040102L-F															●	●			
	CCGT040104L-F															●	●			
	CCGT060202L-W15															●	●			
	CCGT060204L-W15															●	●			
	CCGT060202R-W15															●	●			
	CCGT060204R-W15															●	●			
	CCGT09T302L-W20															●	●			
	CCGT09T304L-W20															●	●			
	CCGT09T302R-W20															●	●			
	CCGT09T304R-W20															●	●			
	CCGT060202-ALU																	●		
	CCGT060204-ALU																●	●		
	CCGT060208-ALU																●	●		
	CCGT09T302-ALU																●	●		
	CCGT09T304-ALU																●	●		
	CCGT09T308-ALU																●	●		
	CCGT09T312-ALU																●	●		
	CCGT120404-ALU																●	●		
	CCGT120408-ALU																●	●		



finishing



medium



roughing

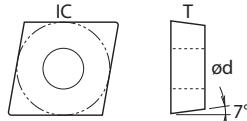
Vc • fn • ap



50

### POSITIVE 7° with hole

**CC**□□



	CC □□	0602 □□	09T3 □□	1204 □□
IC		6,35	9,525	12,7
T		2,38	3,97	4,76
Ød		2,80	4,40	5,50
Holder ➤	[126]	[126]	[126]	[126]

DESCRIPTION		CARBIDE-CVD					CARBIDE-PVD			CERMET	CARBIDE								
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
	CCMT060202-CG																●		
	CCMT060204-CG																●		
	CCMT060208-CG																●		
	CCMT09T304-CG																●		
	CCMT09T308-CG																●		
	CCMT060202-HF	●															●		
	CCMT060204-HF	●	●	●	●	●	●		●	●						●	●		
	CCMT09T302-HF	●							●	●							●		
	CCMT09T304-HF	●	●	●	●	●	●		●	●						●	●		
	CCMT060204-HM	●	●	●	●	●	●		●	●							●		
	CCMT060208-HM	●	●	●	●	●	●		●	●							●		
	CCMT09T302-HM	●																	
	CCMT09T304-HM	●	●	●	●	●	●		●	●							●		
	CCMT09T308-HM	●	●	●	●	●	●		●	●							●		
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	CCMT120408-HM	●	●	●	●	●	●		●	●						●	●		
	CCMT060204-HQ																	●	
	CCMT09T304-HQ					●												●	
	CCMT09T308-HQ																	●	
	CCMT060208-HR								●										
	CCMT09T308-HR								●										
	CCMT120408-HR								●										
	CCMT060204-TS															●			
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finishing



medium

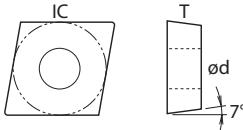


roughing

Vc • fn • ap ➤ 50

### POSITIVE 7° with hole

**CC**□□



CC □□	0602 □□	09T3 □□	1204 □□
<b>IC</b>	6,35	9,525	12,7
<b>T</b>	2,38	3,97	4,76
<b>Ød</b>	2,80	4,40	5,50
Holder ➔	126	126	126

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125
	●	●									●	●	●				
	●	●	●								●	●	●				
	●	●	●								●	●	●				
	●	●									●	●	●				
	●	●									●	●	●				
									●								
									●								
									●								
									●								
									●								



finishing



medium



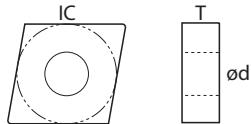
roughing



50

### NEGATIVE with hole

CN□□



CN □□	1204 □□	1606 □□	1906 □□
IC	12,7	15,875	12,7
T	4,76	6,35	4,76
Ød	5,16	6,35	5,50
Holder ➤	131	131	131

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE								
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
	CNMA120404																		
	CNMA120408							●	●	●	●								
	CNMA120412							●	●	●	●								
	CNMA120416									●	●								
	CNMA160608							●	●	●	●								
	CNMA160612							●	●	●	●								
	CNMA160616							●	●	●	●								
	CNMA190612							●	●	●	●								
	CNMA190616							●	●	●	●								
	CNMG120404															●	●		
	CNMG120408	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●
	CNMG120412	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●
	CNMG120416	●		●	●	●	●	●	●	●	●				●	●	●	●	●
	CNMG160608	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●
	CNMG160612	●	●	●	●	●	●	●	●	●	●				●	●	●	●	●
	CNMG160616	●	●	●	●	●	●		●	●					●	●			
	CNMG190608	●	●	●	●										●	●			
	CNMG190612							●	●										
	CNMG190616	●	●	●	●			●	●										
	CNMG120402-ALU																	●	
	CNMG120404-ALU																	●	
	CNMG120408-ALU																	●	
	CNMG120412-ALU																	●	
	CNMG120404-HQ						●								●	●	●	●	
	CNMG120408-HQ																●		



finishing



medium



roughing

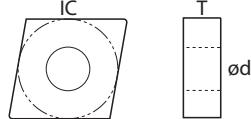
Vc • fn • ap



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### NEGATIVE with hole

**CN**□□



CN	0904	1204	1606
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
Ød	3,81	5,16	6,35
Holder	131	131	131

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125
	CNMG120404-PM	●		●			●										
	CNMG120408-PM	●		●			●										
	CNMG120404-TF											●	●				
	CNMG120408-TF											●	●				
	CNMG090412-TK											●	●				
	CNMG120408-TK											●	●				
	CNMG120412-TK											●	●				
	CNMG090408-TM				●	●											
	CNMG090408-TS											●	●				
	CNMG090412-TS											●	●				
	CNMG120404-TS				●							●	●	●	●		
	CNMG120408-TS				●							●	●	●	●		
	CNMG120412-TS											●	●				
	CNMG160608-TS											●	●				
	CNMG160612-TS											●	●				
	CNMG190608-TS											●	●				
	CNMG190612-TS											●	●				
	CNMG190616-TS											●	●				



finishing



medium



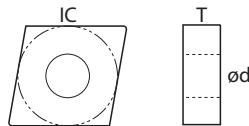
roughing



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### NEGATIVE with hole

**CN** 



	CN	1204	1606	1906
IC		12,7	15,875	12,7
T		4,76	6,35	4,76
Ød		5,16	6,35	5,50
Holder	►	[131]	[131]	[131]

DESCRIPTION	CARBIDE-CVD					CARBIDE-PVD		CERMET	CARBIDE								
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●				●	●					●	●		
	●	●	●	●													
	●	●	●	●													
	●	●	●	●													
	●	●	●	●													
	●	●	●	●													
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	●	●	●	●													



finishing



medium



roughing

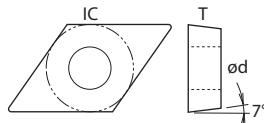
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**POSITIVE 7°  
with hole**

**DC□□**



DC □□	0702 □□	11T3 □□
<b>IC</b>	6,35	9,525
<b>T</b>	2,38	3,97
<b>Ød</b>	2,80	4,40
Holder ➔	139	139

DESCRIPTION	CARBIDE-CVD							CARBIDE-PVD			CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115	
	DCGT070202-ALU															●	●	●	
	DCGT070204-ALU																●	●	●
	DCGT070208-ALU																●	●	●
	DCGT11T302-ALU																●	●	●
	DCGT11T304-ALU																●	●	●
	DCGT11T308-ALU																●	●	●
	DCGT11T312-ALU																●	●	●
	DCGT11T302EL-U																●	●	●
	DCGT11T304EL-U																●	●	●
	DCGT11T302ER-U																●	●	●
	DCGT11T304ER-U																●	●	●
	DCMT070204-CG																●	●	●
	DCMT11T302-CG																●	●	●
	DCMT11T304-CG																●	●	●
	DCMT11T308-CG																●	●	●
	DCMT070202-HF	●	●	●	●	●			●	●			●	●			●	●	●
	DCMT070204-HF	●	●	●	●	●			●	●			●	●			●	●	●
	DCMT11T304-HF	●	●	●	●	●			●	●			●	●			●	●	●
	DCMT070204-HM	●	●	●	●	●			●	●							●		
	DCMT070208-HM	●	●	●	●	●			●	●			●	●			●		
	DCMT11T302-HM	●	●	●	●	●			●	●			●	●			●		
	DCMT11T304-HM	●	●	●	●	●			●	●			●	●			●		
	DCMT11T308-HM	●	●	●	●	●			●	●			●	●			●		
	DCMT11T312-HM	●	●	●	●	●			●								●		



finishing



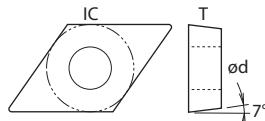
medium



roughing

Vc • fn • ap ➔

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**POSITIVE 7°**  
with hole
**DC**□□

DC □□	0702 □□	11T3 □□
IC	6,35	9,525
T	2,38	3,97
Ød	2,80	4,40
Holder ►	139	139

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE								
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
 	DCMT070202-HQ															●			
	DCMT070204-HQ															●			
	DCMT11T302-HQ															●			
	DCMT11T304-HQ															●			
	DCMT11T308-HQ															●			
 	DCMT11T304-HR	●	●	●	●			●	●				●	●					
	DCMT070204-TS															●			
	DCMT070208-TS															●			
	DCMT11T302-TS															●			
	DCMT11T304-TS															●			
 	DCMT11T304-VM		●	●									●	●					
	DCMT070204-VQ		●	●									●	●					
	DCMT070208-VQ		●	●									●	●					
	DCMT11T304-VW		●	●									●	●					
	DCMT11T308-VW		●	●									●	●					



finishing



medium



roughing



Vc • fn • ap



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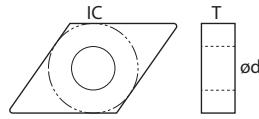
 TURNING  
 GROOVING  
 THREADING  
 MILLING  
 DRILLING  
 ENDMILLS  
 DRILLS  
 SPARE PARTS

INDEX

	INDEX	SPARE PARTS	DRILLS	ENDMILLS	MILLING	THREADING	GROOVING	TURNING
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### NEGATIVE with hole

DN□□



DN □ □	1104 □ □	1504 □ □	1506 □ □
IC	9,525	12,7	12,7
T	4,76	4,76	6,35
Ød	3,81	5,16	5,16
Holder ►	149	149	149

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125
	DNMA150408							●	●	●							
	DNMA150412							●	●	●							
	DNMA150608						●	●	●	●							
	DNMA150612						●	●	●	●							
	DNMA150616						●	●	●	●							
	DNMG110408	●		●				●	●	●		●	●				
	DNMG150404	●		●				●	●	●		●	●				
	DNMG150408	●		●				●	●	●		●	●				
	DNMG150412	●		●				●	●	●		●	●				
	DNMG150604	●	●	●	●	●	●	●	●	●		●	●	●	●		
	DNMG150608	●	●	●	●	●	●	●	●	●		●	●	●	●		
	DNMG150612	●	●	●	●	●	●	●	●	●		●	●	●	●		
	DNMG150602-ALU															●	
	DNMG150604-ALU															●	
	DNMG150608-ALU															●	
	DNMG150612-ALU															●	
	DNMG150608-HA												●				
	DNMG150608-HQ															●	
	DNMG150604L-ST	●		●								●	●				
	DNMG150608L-ST	●		●								●	●				
	DNMG150604R-ST	●		●								●	●				
	DNMG150608R-ST	●		●								●	●				



finishing



medium



roughing

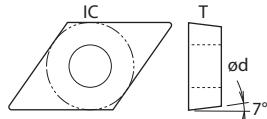
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NEGATIVE  
with hole

DN□□



DN □□	1104 □□	1504 □□	1506 □□
IC	9,525	12,7	12,7
T	4,76	4,76	6,35
Ød	3,81	5,16	5,16
Holder ►	149	149	149

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE							
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS5125	SS9115	SS9125	US2115
	DNMG110404-TK														●	●		
	DNMG110408-TK														●	●		
	DNMG150608-TK														●			
	DNMG150608-TM	●	●											●	●			
	DNMG110404-TS													●	●	●	●	
	DNMG110408-TS													●	●	●	●	
	DNMG110412-TS													●	●			
	DNMG150408-TS													●	●			
	DNMG150412-TS													●	●			
	DNMG150604-TS													●	●			
	DNMG150608-TS													●	●			
	DNMG150612-TS													●	●			
	DNMG150404-UF	●	●	●	●	●	●											
	DNMG150408-UF	●	●	●	●	●	●											
	DNMG150604-UF	●	●	●	●	●	●											
	DNMG110404-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG110408-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG110412-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150404-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150408-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150412-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150604-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150608-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	DNMG150612-UM	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	



finishing



medium



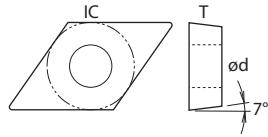
roughing



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### NEGATIVE with hole

**DN**□□


	DN □□	1104 □□	1504 □□	1506 □□
IC		9,525	12,7	12,7
T		4,76	4,76	6,35
Ød		3,81	5,16	5,16
Holder	►	149	149	149

### DESCRIPTION

		CARBIDE-CVD					CARBIDE-PVD			CERMET	CARBIDE	
	DNMG150608-UR	●		●		●	CS8205	CS8215	CS8115	CS7125S	PST110S	PS5125
	DNMG150612-UR	●		●		●		CS8215	CS8125	CS7125S	PST220S	PS7120
	DNMG150404-US	●		●		●						SS9125
	DNMG150408-US	●		●		●						US2115
	DNMG150604-US	●		●		●						



finishing



medium



roughing



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## NEGATIVE without hole

KNOO



**KN** □ □

IC 9,525

T 4,76



## finishing



medium



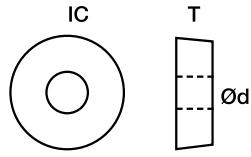
## roughing



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**POSITIVE 7°  
with hole**

**RC□□**

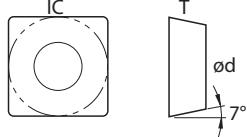


RC □□	0602 □□	0803 □□	10T3 □□
IC	6,0	8,0	10,0
T	2,36	3,18	3,18
Ød	2,80	3,35	3,60
Holder ►	157	157	157

DESCRIPTION	CARBIDE-CVD							CARBIDE-PVD		CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115
  RCGT0602M0-ALU																●	●	●
																●	●	●
																●	●	●
																●	●	●
																●	●	●
  RCMX0803M0	●		●									●	●					
	●		●									●	●					
	●		●									●	●					
	●		●									●	●					
	●		●				●	●	●			●	●					
	●		●			●	●	●				●	●					
	●		●			●						●	●					
  RCMX1003M0																		

 finishing  
  medium  
  roughing

Vc • fn • ap ► 50

**POSITIVE 7°**  
 with hole
**SC** □□

SC	09T3	1204
IC	9,525	12,7
T	3,97	4,76
Ød	4,40	5,16
Holder ►	160	160

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE							
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
 	SCGT09T302-ALU																●	●	●
	SCGT09T304-ALU																●	●	●
	SCGT09T308-ALU																●	●	●
	SCGT09T312-ALU																●	●	●
	SCGT120404-ALU																●	●	●
	SCGT120408-ALU																●	●	●
 	SCMT09T304-HF					●									●				
	SCMT09T308-HM	●	●	●	●	●	●	●	●	●	●				●	●	●	●	
	SCMT120404-HM	●	●	●	●	●	●	●	●	●	●				●	●	●	●	
	SCMT120408-HM	●	●	●	●	●	●	●	●	●	●				●	●	●	●	
 	SCMT09T304-HM																		
	SCMT09T308-HM																		
	SCMT120404-HM																		
	SCMT120408-HM																		



finishing



medium



roughing

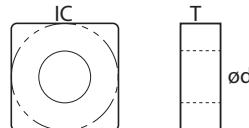
Vc • fn • ap



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### NEGATIVE with hole

**SN** □□



SN	1204	1206	1506
IC	12,7	12,7	15,875
T	4,76	6,35	6,35
Ød	5,16	5,16	6,35
Holder	163	163	163

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125
	SNMA120408						●	●	●	●				●			
	SNMA120412						●	●	●	●							
	SNMA120416						●	●	●	●							
	SNMA150612						●	●	●	●							
	SNMA150616						●	●									
	SNMA190612						●	●									
	SNMA190616						●	●	●								
	SNMA250924						●	●	●	●	●						
	SNMG120404	●	●	●	●	●						●	●				
	SNMG120408	●	●	●	●	●		●	●	●	●		●	●			
	SNMG120412	●	●	●	●	●		●	●	●	●		●	●			
	SNMG120416							●	●								
	SNMG190612	●	●	●	●	●		●	●				●	●			
	SNMG120402-ALU															●	
	SNMG120404-ALU															●	
	SNMG120408-ALU															●	
	SNMG120412-ALU															●	
	SNMG120408-TF					●								●	●		
	SNMG120404-TK												●	●			
	SNMG120408-TK												●	●			
	SNMG120412-TK												●	●			
	SNMG120612-TK												●	●			
	SNMG120404-TS					●		●					●	●	●	●	
	SNMG120408-TS												●	●	●	●	
	SNMG120412-TS												●	●	●		
	SNMG150608-TS												●	●			



finishing



medium



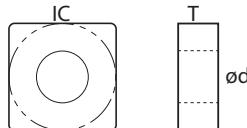
roughing



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NEGATIVE  
with hole

SN □□



	SN □□	1906 □□	2507 □□	2509 □□
IC		19,05	25,4	25,4
T		6,35	7,94	9,52
Ød		7,93	9,12	9,12
Holder	►	163	163	163

DESCRIPTION		CARBIDE-CVD					CARBIDE-PVD		CERMET	CARBIDE									
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
	SNMG120404-UF	●	●	●															
	SNMG120404-UM	●	●	●	●	●	●		●	●				●	●				
	SNMG120408-UM	●	●	●	●	●	●		●	●				●	●				
	SNMG120412-UM	●	●	●	●	●	●		●	●				●	●				
	SNMG120616-UM	●	●	●	●	●	●												
	SNMG150608-UM	●	●	●	●	●	●			●	●				●	●			
	SNMG190612-UM	●	●	●	●	●	●										●		
	SNMG190616-UM																		
	SNMG120408-UR	●	●	●	●	●	●												
	SNMG120412-UR	●	●	●	●	●	●												
	SNMG120612-UR	●	●	●	●	●	●												
	SNMG150612-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG190612-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG190616-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG190624-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG250724-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG250924-UR	●	●	●	●	●	●		●	●				●	●				
	SNMG120404-US	●	●	●	●	●	●												
	SNMG120408-US	●	●	●	●	●	●		●	●				●	●				
	SNMG120412-US	●	●	●	●	●	●												
	SNMG120412-ZR								●	●									
	SNMG120416-ZR								●	●									



finishing



medium



roughing

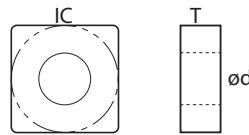
Vc • fn • ap



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### NEGATIVE with hole

**SN** □□



SN	1204	1206	1506
IC	12,7	12,7	15,875
T	4,76	6,35	6,35
Ød	5,16	5,16	6,35
Holder	163	163	163

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE								
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115
	●		●		●													
	●		●		●													
	●		●		●													
	●		●		●													
	●		●		●													
	●		●		●													
	●		●		●													
	●		●		●													
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	●		●		●													
<hr/>																		



finishing



medium



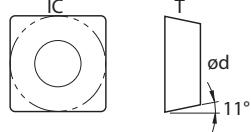
roughing



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### POSITIVE 11° with hole

**SP □□**



	SP □□	1203 □□	1204 □□
IC		12,7	12,7
T		3,18	4,76
Ød		5,16	5,16

### DESCRIPTION



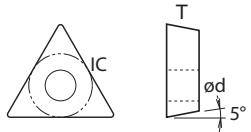
SPMT120408  
SPMT120412  
SPMT120416  
SPMT120420

SPMT120408-HM

	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
SPMT120408									●	●		●	●					
SPMT120412									●	●								
SPMT120416									●	●								
SPMT120420									●	●								
SPMT120408-HM			●									●	●					

### POSITIVE 5° with hole

**TB □□**



	TB □□	0601 □□
IC		3,97
T		1,59
Ød		2,16

### DESCRIPTION



TBGT060102L  
TBGT060104L

	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
TBGT060102L												●						
TBGT060104L												●						

TURNING

GROOVING

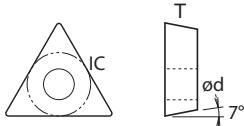
THREADING  
MILLING

DRILLING  
ENDMILLS

SPARE  
PARTS

INDEX

### POSITIVE 7° with hole

**TC** □□


TC	0902	1102	16T3
IC	5,56	6,35	9,525
T	2,38	2,38	3,97
Ød	2,50	2,80	4,40
Holder	171	171	171

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115
	TCGT090202-ALU															●	●	●
	TCGT090204-ALU															●	●	●
	TCGT090208-ALU															●	●	●
	TCGT110202-ALU																●	●
	TCGT110204-ALU																●	●
	TCGT110208-ALU																●	●
	TCGT16T302-ALU																●	●
	TCGT16T304-ALU																●	●
	TCGT16T308-ALU																●	●
	TCGT16T312-ALU																●	●
	TCGW16T304								●	●								
	TCGW16T308								●	●								
	TCGW16T312								●	●								
	TCMT110204-CG															●		
	TCMT090204-HF	●	●	●	●				●	●				●	●			
	TCMT110204-HF	●	●	●	●				●	●				●	●			
	TCMT16T304-HF	●	●	●	●				●	●				●	●			
	TCMT090204-HM	●	●	●	●				●	●				●	●			
	TCMT090208-HM	●	●	●	●				●	●				●	●			
	TCMT110204-HM	●	●	●	●				●	●				●				
	TCMT110208-HM	●	●	●	●				●	●				●	●			



finishing



medium



roughing

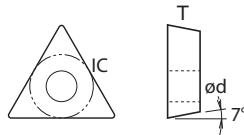
Vc • fn • ap



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### POSITIVE 7° with hole

**TC □□**



TC □□	0902 □□	1102 □□	16T3 □□
IC	5,56	6,35	9,525
T	2,38	2,38	3,97
Ød	2,50	2,80	4,40
Holder ➤	171	171	171

DESCRIPTION		CARBIDE-CVD					CARBIDE-PVD		CERMET	CARBIDE										
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115	
 	TCMT16T304-HM	●	●	●	●				●	●	●					●				
	TCMT16T308-HM	●	●	●	●	●			●	●	●					●				
	TCMT16T312-HM	●		●																
	TCMT220408-HM	●		●																
 	TCMT090204-HQ																●			
	TCMT110204-HQ																●			
	TCMT110208-HQ																●			
	TCMT16T304-HQ																●			
 	TCMT110208-HR								●	●										
	TCMT110204-TS																●			
	TCMT16T304-TS																●			
	TCMT16T308-TS																●			
 	TCMT16T304-VM	●		●									●	●						
	TCMT16T308-VM	●		●									●	●						



finishing



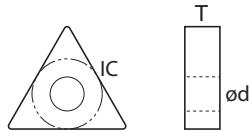
medium



roughing

Vc • fn • ap ➤ 50

### NEGATIVE with hole

**TN** □□


	1604 □	2204 □	2706 □
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
Ød	3,81	5,16	6,35
Holder	178	178	178

### DESCRIPTION

	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115	CERMET	CARBIDE
	TNGG160402L-P															●				
	TNGG160404L-P															●			●	
	TNGG160402R-P															●				
	TNGG160404R-P															●			●	
	TNMA160404																			
	TNMA160408							●	●	●	●									
	TNMA160412						●	●	●	●	●									
	TNMA160416						●	●	●	●	●									
	TNMA220404											●	●							
	TNMA220408							●	●	●	●									
	TNMA220412						●	●	●	●	●									
	TNMA220416						●	●	●	●	●									
	TNMG160404	●	●	●	●	●	●					●	●	●	●	●				
	TNMG160408	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	TNMG160412	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	TNMG220408	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	TNMG220412		●		●		●	●	●	●	●	●	●	●	●	●	●	●		
	TNMG220416		●		●			●	●	●	●	●	●	●	●	●	●	●		
	TNMG270612	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	TNMG270616	●	●	●	●	●	●					●	●	●	●	●	●	●		
	TNMG330704						●													
	TNMG330724						●	●												
	TNMG330924						●		●	●										
	TNMG160402-ALU																●			
	TNMG160404-ALU																●			
	TNMG160408-ALU																●			
	TNMG160412-ALU																●			



finishing



medium



roughing

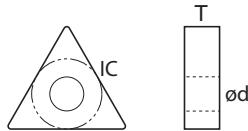
Vc • fn • ap



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NEGATIVE  
with hole

TN □□



TN □□	1604□□	2204□□	2706□□
IC	9,525	12,7	15,875
T	4,76	4,76	6,35
Ød	3,81	5,16	6,35
Holder ►	178	178	178

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE								
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115	
	TNMG160404-HQ																●			
	TNMG160408-HQ																	●		
	TNMG160404L-C																	●		
	TNMG160408L-C																	●		
	TNMG160404R-C																	●		
	TNMG160408R-C																	●		
	TNMG160404-PM	●	●														●			
	TNMG160408-PM	●	●	●													●			
	TNMG160412-PM			●													●			
	TNMG160404L-ST	●	●														●	●		
	TNMG160408L-ST	●	●	●													●	●		
	TNMG160404R-ST	●	●	●													●	●		
	TNMG160408R-ST	●	●	●													●	●		
	TNMG160404-TK																●	●		
	TNMG220408-TK																●	●		
	TNMG160404-TS				●			●	●				●	●	●	●	●			
	TNMG160408-TS				●			●	●				●	●	●	●	●			
	TNMG160412-TS				●			●	●				●	●	●	●	●			
	TNMG220404-TS				●			●	●				●	●	●	●	●			
	TNMG220408-TS				●			●	●				●	●	●	●	●			
	TNMG160404-UF	●	●	●				●												
	TNMG160408-UF	●	●	●				●												



finishing



medium



roughing

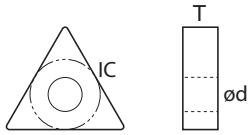
Vc • fn • ap



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### NEGATIVE with hole

**TN** □□



	1604 □□	2204 □□	2706 □□
<b>IC</b>	9,525	12,7	15,875
<b>T</b>	4,76	4,76	6,35
<b>Ød</b>	3,81	5,16	6,35
Holder ►	178	178	178

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125
	●		●														
	●		●														
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
	●		●	●	●	●		●	●	●		●	●		●	●	
			●									●	●	●			
			●									●	●	●			
			●		●	●											
			●		●	●											
			●		●	●											
			●		●	●											



finishing



medium



roughing

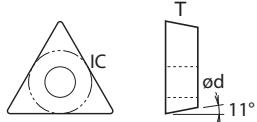
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### POSITIVE 11° with hole

**TP □□**



TP □□	0802□□	0902□□	1103□□
IC	4,76	5,56	6,35
T	2,38	2,38	3,18
Ød	2,30	3,00	3,40
Holder ►	177	177	177

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE								
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
  TPGH080202L												●	●			●		
												●	●			●		
												●	●			●		
												●	●			●	●	
												●	●			●		
												●	●			●		
  TPGN160308	●		●		●													
	●		●		●													
  TPGT110204-HM	●		●		●													
  TPMT110304-CG																●		
  TPMT110304-HQ																●		
																●		
  TPUN160304							●											
							●											
							●											
  TPUN160308								●							●			
								●							●			
  TPUN220412									●						●			
									●						●			



finishing



medium



roughing

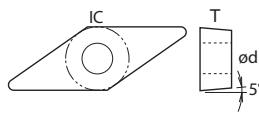
Vc • fn • ap



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**POSITIVE 5°  
with hole**

**VB** □□



VB	1103	1604
IC	6,35	9,525
T	3,18	4,76
Ød	2,80	4,40
Holder	183	183

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD			CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115
VBGT110302-ALU																	●
VBGT110308-ALU																	●
VBGT160402-ALU																	●
VBGT160404-ALU																	●
VBGT160408-ALU																	●
VBGT160412-ALU																	●
VBGT110302L-Y																	●
VBGT110304L-Y																	●
VBGT110302R-Y																	●
VBGT110304R-Y																	●
VBMT160404	●		●	●	●	●		●	●		●	●					
VBMT160408	●	●	●	●	●	●		●	●		●	●					
VBMT110302-CG																	●
VBMT110304-CG																	●
VBMT110304-HQ																	●
VBMT110308-HQ																	●
VBMT160404-HQ																	●
VBMT160408-HQ																	●
VBMT160408-HR											●	●					



finishing



medium

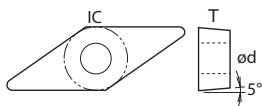


roughing



# POSITIVE 5° with hole

VB



<b>VB</b>	<b>1103</b>	<b>1604</b>
<b>IC</b>	6,35	9,525
<b>T</b>	3,18	4,76
<b>Ød</b>	2,80	4,40

DESCRIPTION	CARBIDE-CVD								CARBIDE-PVD			CERMET	CARBIDE				
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
 VBMT160404-TS													●	●			
 VBMT160404-VM	●	●								●	●						
 VBMT160404-VW	●	●								●	●						



## finishing



medium



## roughing

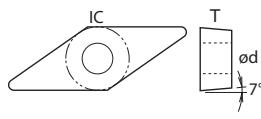
Vc • fn • ap



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### POSITIVE 7° with hole

**VC** □□



	VC□□	1103□□	1604□□	2205□□
<b>IC</b>		6,35	9,525	12,70
<b>T</b>		3,18	4,76	5,56
<b>Ød</b>		2,80	4,40	5,60
Holder ►	189	189	189	189

DESCRIPTION	CARBIDE-CVD							CARBIDE-PVD		CERMET	CARBIDE							
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125	US2115
	VCGT110302-ALU															●	●	●
	VCGT110304-ALU															●	●	●
	VCGT110308-ALU															●	●	●
	VCGT160402-ALU															●	●	●
	VCGT160404-ALU															●	●	●
	VCGT160408-ALU															●	●	●
	VCGT160412-ALU															●	●	●
	VCGT220516-ALU															●	●	●
	VCGT110304-VF														●	●		
	VCGW110304								●	●								
	VCGW160404								●	●								
	VCGW160408								●	●								
	VCMT160404	●	●	●	●	●			●	●	●	●	●	●	●	●		
	VCMT110302-CG															●		
	VCMT110302-CG															●		



finishing



medium



roughing

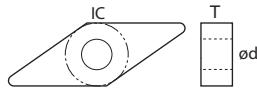
Vc • fn • ap



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### NEGATIVE with hole

**VN** □□



<b>VN</b> □□	<b>1604</b> □□
IC	9,525
T	4,76
Ød	3,81
Holder ►	191

DESCRIPTION	CARBIDE-CVD					CARBIDE-PVD		CERMET	CARBIDE								
	CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS5125	SS9115	SS9125	US2115
	●	●	●	●	●			●	●	●	●	●	●	●			
	●	●	●	●	●			●	●	●		●	●	●			
	●	●	●	●	●			●	●	●		●	●	●			
															●	●	
																●	●
	●	●										●	●				
	●	●	●									●	●				
	●	●										●	●				
	●	●	●	●	●												
	●	●	●	●	●												
	●	●	●	●	●	●					●	●			●	●	
	●	●	●	●	●	●					●	●			●	●	
	●	●	●	●	●	●					●	●			●	●	



finishing



medium



roughing

Vc • fn • ap



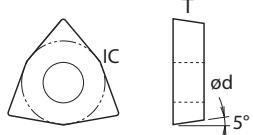
50

# Carbide

# TURNING

TURNING

## POSITIVE 5° with hole



WB □ □

IC 4,76

T 1,59

Ød 2,20



## finishing



medium



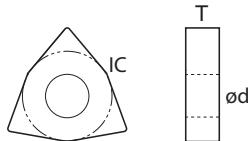
## roughing



50

### NEGATIVE with hole

WN□□



WN □ □	0604 □ □	0804 □ □
IC	9,525	12,7
T	4,76	4,76
Ød	3,81	5,16
Holder ►	194	194

DESCRIPTION		CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE								
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115
	WNMA080404							●	●	●	●								
	WNMA080408							●	●	●	●								
	WNMA080412							●	●	●	●								
	WNMA080416							●	●	●	●								
	WNMG080404	●		●		●	●			●	●				●	●			
	WNMG080408	●		●		●	●	●	●	●	●				●	●			
	WNMG080412	●		●		●	●	●	●	●	●				●	●			
	WNMG080416							●	●	●	●								
	WNMG080404-ALU																	●	
	WNMG080408-ALU																	●	
	WNMG080408-HA														●				
	WNMG080404-HQ																	●	
	WNMG080408-HQ		●		●									●	●			●	
	WNMG080412-HQ																	●	
	WNMG080412-HQ																	●	
	WNMG080404-PM		●		●									●	●				
	WNMG080408-PM		●	●	●	●							●	●				●	
	WNMG080412-PM		●		●								●	●				●	



finishing



medium



roughing

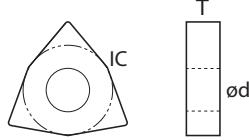
Vc • fn • ap



50

### NEGATIVE with hole

**WN** □□



	WN □ □	0604 □ □	0804 □ □
<b>IC</b>		9,525	12,7
<b>T</b>		4,76	4,76
<b>Ød</b>		3,81	5,16
Holder ►	191	191	191

DESCRIPTION	CARBIDE-CVD						CARBIDE-PVD		CERMET	CARBIDE						
	CS5215	CS5215S	CS5225	CS5225S	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S	PST110S	PST220S	PST120	PS5125	SS9115	SS9125
WNMG080404L-ST	●		●							●	●					
WNMG080408L-ST	●		●							●	●					
WNMG080408R-ST	●	●	●							●	●					
WNMG080408-TM	●		●							●	●					
WNMG080404-TK												●	●			
WNMG080408-TK												●	●			
WNMG080412-TK												●				
WNMG080404-TS	●		●							●	●	●	●			
WNMG080408-TS	●		●							●	●	●	●			
WNMG080404-UF	●		●		●											
WNMG080408-UF	●		●		●											
WNMG060408-UM	●		●		●	●		●	●			●	●			
WNMG080404-UM	●		●		●	●		●	●			●	●			
WNMG080408-UM	●		●		●	●		●	●			●	●			
WNMG080412-UM	●		●		●	●		●	●			●	●			
WNMG080408-UR	●		●		●											
WNMG080412-UR	●		●		●											



finishing



medium

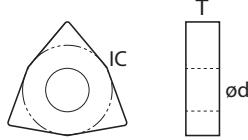


roughing



## NEGATIVE with hole

WN  
□□



WN	0604	0804
IC	9,525	12,7
T	4,76	4,76
Ød	3,81	5,16



## finishing



medium



## roughing



50

### Cutting Parameters Vc(m/min)

KG	GREY CAST IRON
KN	NODULAR CAST IRON
PL	LOW CARBON AND FREE CUTTING STEEL
PM	MEDIUM CARBON STEEL
PH	HIGH CARBON STEEL
PA	ALLOY STEEL

MM	MARTENSITIC AND FERRITIC STAINLESS STEEL
MA	AUSTENITIC STAINLESS STEEL
NA	ALUMINIUM ALLOYS
NH	ALUMINIUM ALLOYS AGED AND HARDENED
NB	BRASS
NC	BRONZE AND ELECTOLYTIC COPPER

MATERIAL		CARBIDE-CVD										
		CS5215	CS5215S	CS5225	CS5225S	CS5235	CS5240	CS8205	CS8215	CS8115	CS8125	CS7125S
K	KG							250~450	200~360	200~360	160~300	
	KN							180~300	150~280	150~280	120~250	
P	PL	250~350	200~320	200~320	200~320	160~250						
	PM	220~300	180~260	180~260	180~260	140~200						
P	PH	200~280	160~250	160~250	160~250	120~180	100~160					
	PA	180~250	150~220	150~220	150~220	100~170	90~160					
M	MM											160~260
	MA											140~220

MATERIAL		CARBIDE-PVD			CERMET		CARBIDE					
		PS7110S	PS7220S	PS7120	PS5125	SS9115	SS9125	US2115				
K	KG					250~400	250~400					
	KN					180~300	180~300					
P	PL				100~180	280~380	280~380					
	PM				80~160	240~330	240~330					
P	PH				80~140	220~300	220~300					
	PA				60~120	200~280	200~280					
M	MM	120~220	100~150	100~150		180~250	180~250					
	MA	100~180	80~120	80~120		160~220	160~220					
N	NA							600~1500				
	NH							300~700				
	NB							250~400				
	NC							150~250				

negative



## Cutting Parameters ap (mm) &amp; fn (mm/rev)

NEGATIVE INSERT SIZE		CN	-	1204..	1606..	1906..	2507.. 2509..
		DN	1104..	1504.. 1506..	-	-	-
		SN	0903..	1204..	-	1906..	2507.. 2509..
		TN	-	1604..	2204..	-	-
		VN	-	1604..	-	-	-
		WN	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)						
MA FLAT	R02										
	R04			2,00-4,00	0,20-0,35						
	R08			2,00-6,00	0,25-0,50	4,00-8,00	0,34-0,60				
	R12			2,00-6,00	0,33-0,58	4,00-10,0	0,40-0,70	5,00-11,0	0,43-0,76	8,00-16,0	0,45-1,00
	R16 / R24			2,00-7,00	0,37-0,65	4,00-10,0	0,45-0,78	5,00-13,0	0,49-0,8	8,00-18,0	0,50-1,10
MG BOX	R02										
	R04			1,00-4,00	0,16-0,25					8,00-16,0	0,45-0,89
	R08	1,00-4,00	0,23-0,40	1,00-4,00	0,22-0,38	4,00-7,00	0,34-0,58	5,00-10,0	0,42-0,76		
	R12			1,00-5,00	0,26-0,44	4,00-8,00	0,40-0,68	5,00-11,0	0,43-0,76		
	R16 / R24			1,00-5,00	0,29-0,50	4,00-8,00	0,45-0,76	5,00-11,0	0,49,0,85	8,00-18,0	0,50-1,10
ALU	R02			0,10-3,00	0,05-0,30						
	R04			0,80-3,50	0,10-0,40						
	R08			0,80-3,50	0,10-0,40						
	R12			0,80-3,50	0,10-0,42						
	R16 / R24										
HA	R02										
	R04										
	R08										
	R12			0,80-3,50	0,05-0,30						
	R16 / R24										
HQ	R02										
	R04			0,50-2,50	0,05-0,25						
	R08			0,50-4,00	0,10-0,50						
	R12			0,50-4,00	0,13-0,60						
	R16 / R24										
HTR	R02										
	R04										
	R08										
	R12										
	R16 / R24									1,80-10,00	0,30-0,80
PM	R02										
	R04										
	R08			1,00-5,00	0,10-0,50						
	R12										
	R16 / R24										

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

### Cutting Parameters ap (mm) & fn (mm/rev)

negative 

NEGATIVE INSERT SIZE		CN	-	1204..	1606..	1906..	2507.. 2509..
		DN	1104..	1504.. 1506..	-	-	-
		SN	0903..	1204..	-	1906..	2507.. 2509..
		TN	-	1604..	2204..	-	-
		VN	-	1604..	-	-	-
		WN	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
ST	R02										
	R04			1,00-3,50	0,12-0,30						
	R08			1,80-7,00	0,15-0,50						
	R12										
	R16 / R24										
TF	R02										
	R04			0,05-1,00	0,04-0,28						
	R08			0,07-1,00	0,05-0,03						
	R12										
	R16 / R24										
TK	R02										
	R04	0,50-1,00	0,10-0,25	0,50-1,20	0,10-0,28						
	R08	0,50-1,20	0,10-0,28	0,50-1,50	0,10-0,30	0,80-2,00	0,10-0,35				
	R12			0,50-1,60	0,10-0,30						
	R16 / R24										
TM	R02										
	R04										
	R08			0,50-3,00	0,05-0,40						
	R12										
	R16 / R24										
TS	R02										
	R04	1,00-3,00	0,13-0,23	0,80-4,00	0,05-0,30						
	R08			0,80-4,00	0,10-0,40						
	R12			0,80-4,00	0,10-0,40						
	R16 / R24										
UF	R02										
	R04			0,30-1,80	0,05-0,35						
	R08			0,30-2,00	0,05-0,35						
	R12										
	R16 / R24										
UH	R02										
	R04										
	R08										
	R12					1,30-8,00	0,25-0,70				
	R16 / R24					1,80-8,00	0,30-0,80				

negative



## Cutting Parameters ap (mm) &amp; fn (mm/rev)

NEGATIVE INSERT SIZE		CN	-	1204..	1606..	1906..	2507.. 2509..
		DN	1104..	1504.. 1506..	-	-	-
		SN	0903..	1204..	-	1906..	2507.. 2509..
		TN	-	1604..	2204..	-	-
		VN	-	1604..	-	-	-
		WN	0604..	0804..	-	-	-

Chip Breaker Form	Corner Radius	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
UM	R02										
	R04			1,00-4,50	0,10-0,33	2,00-7,50	0,13-0,33				
	R08			1,50-5,00	0,15-0,45	2,00-8,00	0,18-0,45	3,00-9,00	0,20-0,46		
	R12			1,50-5,50	0,15-0,50	2,00-8,00	0,22-0,50	3,00-10,0	0,24-0,50		
	R16 / R24			1,50-5,50	0,15-0,60	2,00-8,00	0,25-0,60	3,00-10,0	0,32-0,50		
UT	R02										
	R04										
	R08										
	R12					1,30-7,00	0,25-0,65				
	R16 / R24										
UR	R02										
	R04										
	R08			3,00-10,0	0,30-0,72	3,00-15,0	0,27-0,48	3,00-17,0	0,34-0,60		
	R12			3,00-15,00	0,30-0,80	3,00-15,5	0,32-0,50	3,00-18,0	0,38-0,68		
	R16 / R24					3,00-16,00	0,35-0,63	3,00-18,0	0,38-0,68	5,00-17,0	0,45-0,90
US	R02										
	R04			1,50-4,50	0,15-0,45						
	R08			1,50-5,00	0,15-0,5						
	R12			1,50-5,00	0,15-0,50						
	R16 / R24										
VQ	R02										
	R04										
	R08										
	R12										
	R16 / R24										
ZR	R02										
	R04										
	R08										
	R12			1,00-7,00	0,20-0,50						
	R16 / R24			1,80-7,00	0,32-0,75						
R/L-P R/L-C	R02			0,50-3,50	0,08-0,30						
	R04			1,00-3,50	0,12-0,30						
	R08			1,30-3,50	0,15-0,35						
	R12										
	R16 / R24										

### Cutting Parameters ap (mm) & fn (mm/rev)

positive



NEGATIVE INSERT SIZE		CC / CP	0602..	09T3.. 0903..	1204..	-	-
		DC	0702..	11T3..	..	-	-
		SC / SP	-	09T3..	1204..	-	-
		TC / TP	0902..	1102..	16T3..	2204..	-
		VB / VC	-	1103..	1604..	2205..	-
		WB	0601..	-	-	-	-

Chip Breaker Form	Corner Radius	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)						
ER/L-U	R02	0,10-0,50	0,01-0,10	0,02-2,00	0,04-0,15						
	R04	0,10-0,50	0,01-0,10	0,50-3,00	0,08-0,30						
	R08										
	R12										
	R16 / R24										
L-F	R02	0,30-1,00	0,10-0,20	0,50-1,20	0,10-0,25						
	R04	0,50-1,00	0,10-0,25	0,70-1,50	0,12-0,30	0,20-4,00	0,02-0,30				
	R08					0,30-5,00	0,03-0,50				
	R12										
	R16 / R24										
L/R-W	R02	0,07-1,80	0,03-0,15	0,08-2,00	0,04-0,15						
	R04	0,1-2,00	0,05-0,2	0,1-2,20	0,08-0,2						
	R08										
	R12										
	R16 / R24										
L-Y	R02			0,06-1,70	0,03-0,13						
	R04			0,09-2,00	0,06-0,22						
	R08										
	R12										
	R16 / R24										
ALU	R02	0,03-3,00	0,01-0,12	0,05-4,00	0,02-0,30	0,05-4,00	0,02-0,30				
	R04	0,10-3,00	0,02-0,13	0,10-5,00	0,03-0,50	0,10-5,00	0,03-0,50				
	R08	0,10-4,00	0,02-0,20	0,10-5,00	0,03-0,50	0,10-5,50	0,04-0,80				
	R12			0,15-5,00	0,04-0,60	0,50-6,50	0,08-0,70	0,10-7,00	0,03-0,60		
	R16 / R24										
CG	R02	0,30-1,00	0,05-0,20								
	R04	0,30-1,00	0,10-0,25	0,30-1,5	0,10-0,25						
	R08	0,40-2,40	0,80-0,25	0,30-1,5	0,10-0,28						
	R12										
	R16 / R24										
HF	R02										
	R04										
	R08										
	R12										
	R16 / R24										

positive



## Cutting Parameters ap (mm) &amp; fn (mm/rev)

NEGATIVE INSERT SIZE		CC / CP	0602..	09T3.. 0903..	1204..	-	-
		DC	0702..	11T3..	..	-	-
		SC / SP	-	09T3..	1204..	-	-
		TC / TP	0902..	1102..	16T3..	2204..	-
		VB / VC	-	1103..	1604..	2205..	-
		WB	0601..	-	-	-	-

Chip Breaker Form	Corner Radius	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)	ap (mm)	fn (mm/rev)
HM	R02	1.0-6.0	0.10-0.70								
	R04										
	R08										
	R12										
	R16 / R24										
HQ	R02	0,06-1,70	0,06-0,19	0,10-2,00	0,07-0,22						
	R04	0,10-2,00	0,11-0,25	0,80-3,00	0,08-0,30	0,80-3,00	0,08-0,28				
	R08	0,20-2,00	0,08-0,30	1,00-3,00	0,10-0,30	1,00-3,00	0,10-0,33				
	R12										
	R16 / R24										
HR	R02										
	R04										
	R08										
	R12										
	R16 / R24										
TS	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VM	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VQ	R02										
	R04										
	R08										
	R12										
	R16 / R24										
VW	R02										
	R04										
	R08										
	R12										
	R16 / R24										

TURNING

GROOVING

THREADING

MILLING

DRILLING

ENDMILLS

DRILLS

SPARE PARTS

INDEX

### TURNING CVD Comparison table

	MATERIAL	SANGEON	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
TURNING											
GROOVING	P			TP0500	TT8105	CA5505	GC4305	KCP05(B)	UE6105	WPP10S	NC3010
THREADING	CS5215	IC8150	TP0501	TT8110	CA510	GC4205			UE6110	WKP13S	
MILLING	CS5215S		TP1500	TT8115	CA515	GC4315	KCP10(B)	MY5015			NC3215
DRILLING			TP2500	TT8120	CA525	GC4215		MC6025	WPP20S	NC3220	
ENDMILLS	CS5225	IC8250	TP2501	LC025P	CA5525	GC4325	KCP25(B)	UE6020	WKP23S	NC3225	
DRILLS	CS5225S		T350M	TT8125		GC4225					
SPARE PARTS	CS5235	IC8350	TP3500	TT5100	CA530	GC4235	KCP30(B)	UE6035	WPP30S	NC3030	
INDEX				TT8135	CA5535				WKP33S	NC500H	
	CS5240		TGP45	TT7100			KCP40(B)				NC5330
	M	CS7125S	IC6015	TM2000	TT9215	CA6515	GC2015	KCM15(M)	MC7015	WAM10	NC9020
				TM4000	TT9225	CA6525	GC2025	KCM25(B)	US7020	WAM20	NC9025
									US735	WAM30	NC9030
	K	CS8205	IC5005	TK1001	TT7005	CA4505	GC3205	KCK05(B)	MC5005	WKK10S	NC6205
						CA4010	GC3210		UC5105		
		CS8215			TT7310						NC6210
		CS8115									
			IC5015	TK2001	TT7015	CA4515	GC3215	KCK15(B)	MC5015	WKK20S	NC6215
		CS8125		TGK1500		CA4115	GC3225		UC5115		

### TURNING Cermet

	MATERIAL	SANGEON	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
DRILLS											
SPARE PARTS	UNI	SS9115	IC20N	C15M	CT3000	TN60	CT525	KT125	NX2525		CC1500
INDEX		SS9125	IC520N					HT5	NX3035		CN1500

## TURNING PVD Comparison table

MATERIAL	SANGEON	ISCAR	SECO	TEAGUTEC	KYOCERA	SANDVIK	KENAMETAL	MITSUBISHI	WALTER	KORLOY
<b>P</b>	PS7110S	IC507	CP200		PR1005					
		IC808			PR915		KU10T			PC8110
	PS7220S		CP250		PR1115		KU25T			PC230
	PS7120				PR930					
		IC3028		TT5030		GC1025		VP15TF	WTA43	PC5300
		IC908			PR1025			VP20MF	WTA41	PC8115
		IC830			PR630	GC4125				
<b>M</b>	PS5125		CP500		PR660					PC3545
	PS7110S	IC808	CP200			GC1005		MP9005		
	PS7220S	IC907			PR915	GC1105	KC5010	VP10RT	WSM10S	PC8110
			CP250				KC5510		WSM20S	PC8115
	PS7120				PR930	GC1020				
		IC3028					KC5025	VP15TF	WSM30S	PC5300
		IC830		TT5030	PR1125	GC1025	KC5525	VP20MF	WSM40S	
<b>S</b>	PS5125		CP500	TT8020	PR660	GC2035				PC9030
										PC5400
	PS7110S	IC808	TS2000					VP05RT	WSM10	PC8105
		IC907			PR915	GC1105				
			CP500				KC5010	VP10RT	WSM20	PC8110
	PS7120									PC8115
	PS7220S	IC328	TS2500	TT5030	PR660	GC1025		VP15TF	WSM30	
					PR1325	GC2035	KC5025			PC5300
										PC5400

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