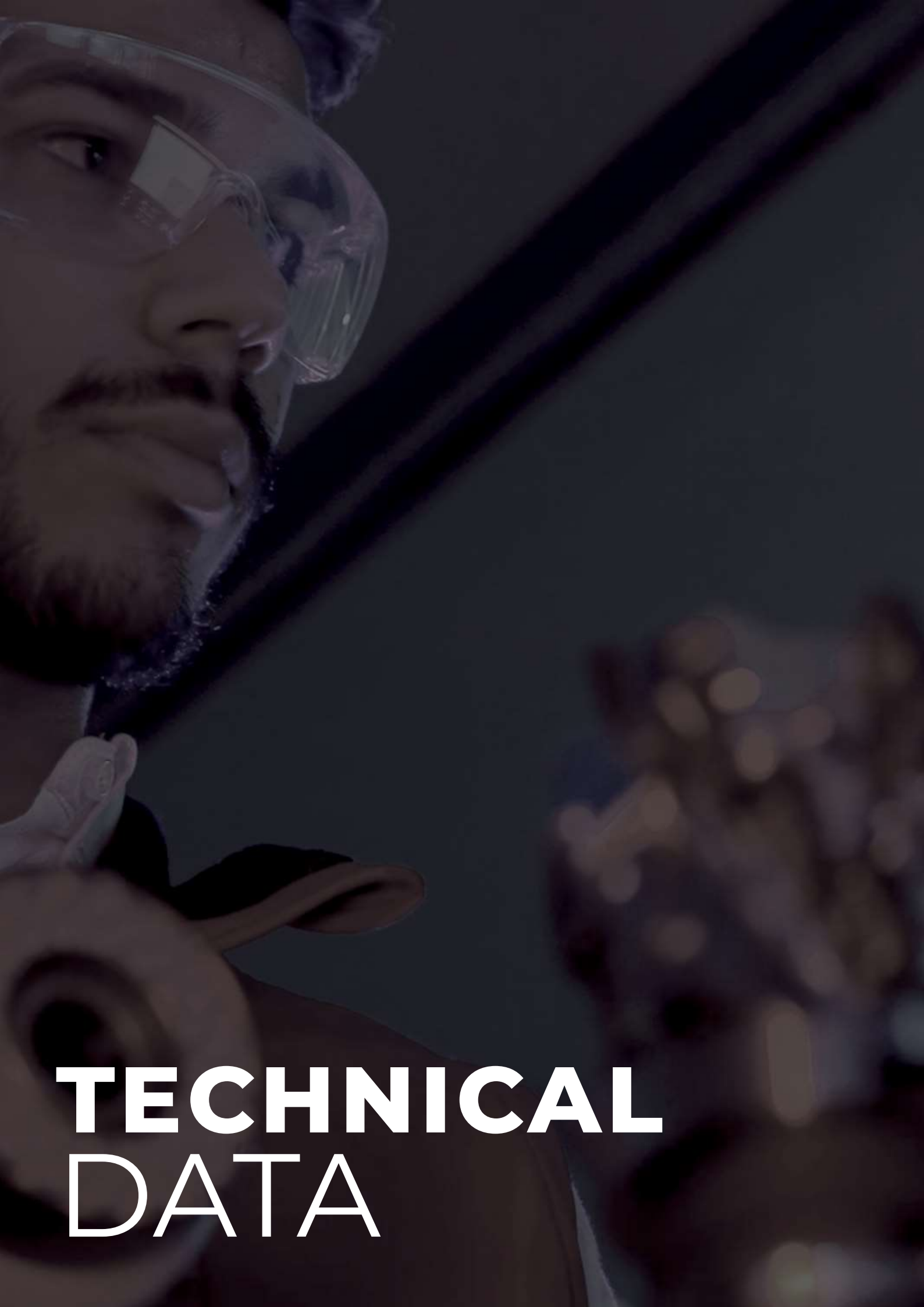




TECHNICAL DATA

1 TURNING GRADES

> See page C - 858

2 TURNING GRADES DESCRIPTION

> See page C - 860

3 WIPER CONCEPT

> See page C - 862

4 CUTTING SPEED

> See page C - 863

5 CHIP BREAKER SPECIFICATIONS

> See page C - 864

6 CHIP BREAKER COMPARATIVE CHART

> See page C - 868

7 GRADE COMPARATIVE CHART

> See page C - 870

	1 5 10 15 20 25 30 35 40 45 50												
P STEEL			PH7910										PVD
				PH7920									
			PHG105										CVD
				PHG115									
			NEW	PH2G115									
						PHG125							
						NEW	PH2G125						
							PHG140						
M STAINLESS SEEL			PHH910										PVD
			PH7910										
				PHH920									
				PH7920									
				PHS215									CVD
					PHS225								
							PHS240						
K CAST IRON			PH5705										CVD
				PH5320									
						PH5740							
		PBH920											PCBN
				PBY930									
				PBY940									

TURNING GRADES

Graus para torneamento | Calidades para torneado

		1	5	10	15	20	25	30	35	40	45	50	
N	ALUMINIUM & NON FERROUS		PH0910										UNCOTED
			PDP410										PCD
			PDP403										
S	HEAT Resistant / TITANIUM ALLOYS			PHH910									PVD
				PH7910									
						PHH920							
						PH7920							
			PBY603										PCBN
						PBH920							
H	HARDENED MATERIALS		PBY603										PCBN
			NEW	PBY620									
				PBY625									
				PBY930									
					PBY940								
						PBH920							

PVD GRADES

PHH...

An exceptionally durable PVD coating boasts superior thermal stability, ensuring outstanding wear resistance and performance.

1st choice for finishing operations on stainless steels and HRSA materials.



WEAR RESISTANCE

TOUGHNESS

PHH910

M05-M10
S05-S15

An hard micro grain substrate combined with a thin optimized nanostructure PVD coating with excellent heat dissipation

The solution for Stainless steel and HRSA from medium turning to finishing.
For continuous to semi-interrupted turning.
First choice for HRSA.

PHH920

M10-M25
S15-S30

A micro grain substrate combined with a thin optimized nanostructure PVD coating with excellent heat dissipation

Solution for general turning of stainless steels and HRSA.

PH7...

A thin PVD coating is recommended for finishing operations on steel and suitable for stainless steels and HRSA.

WEAR RESISTANCE

TOUGHNESS

PH7910

P05-P10
M05-M10
S05-S15

PH7920

P10-P35
M10-M25
S15-S30

UNCOATED

PH0910

Uncoated carbide micro-grain grade, characterized by excellent resistance to abrasive wear and toughness, making it suitable for a wide range of machining operations, from rough to finishing, specifically tailored for aluminum alloys.

PH0910

N01-N20

CVD GRADES

PHS...

CVD coating with excellent resistance to thermal and mechanical shock, providing exceptional performance for both continuous and interrupted turning.

1st Choice for stainless steel turning from semi-finishing to roughing.



WEAR RESISTANCE

TOUGHNESS

PHS215

M10-M25

Suitable for high to medium cutting speeds in stainless steel. Ideal for turning on good condition of cut (continuous cut).

PHS225

M15-M30

First choice for general application on turning of stainless steel.

PHS240

M25-M45

First choice for roughing to heavy roughing operations with interrupted cut at medium to low cutting speeds on stainless steel.

TURNING GRADES DESCRIPTION

Descrição de graus para torneamento | Descripción de calidades para torneado

PHG... | **NEW** PH2G...

PH2G grade series is an innovative combination of a highly dense and hard nanostructured coating base material, including new Al_2O_3 layer with improved wear resistance which provides superior performance during high-speed turning operations.

1st choice for steel turning operations.



WEAR RESISTANCE

TOUGHNESS

PHG105 P05-P10	PHG115 P10-P25	NEW PH2G115 P10-P25	PHG125 P20-P35	NEW PH2G125 P20-P35	PHG140 P25-P45
First option for continuous cut with hardness higher than 38HRC.	Suitable for high to medium cutting speeds on steels.	For finishing to roughing operations with high cutting speeds in continuous cutting applications.	Ideal for general application in all kind of steels.	Ideal for general applications in all kind of steels with high metal removal rates.	First choice for roughing to heavy roughing operations with interrupted cut at medium to low cutting speeds.

PH5...

CVD coating with excellent flank wear resistance, ensuring excellent performance during continuous and interrupted cutting processes on cast iron materials.

WEAR RESISTANCE

TOUGHNESS

PH5705 K05-K15	PH5320 P01-P15 K10-K30	PH5115 P10-P25	PH5125 P20-P35	PH5740 K20-K40
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PCBN

PCBN sets new benchmarks in continuous and intermittent cutting with its exceptional wear resistance. It provides unmatched performance in hot hardness, toughness, and chemical stability.

1st choice for operations on hard and/or abrasive highly abrasive materials.



PBY603 S01-S10 H01-H10	PBY620 H10-H20	PBY930 H20-H30	PBY940 H20-H30	PBH920 K01-K30 S20-S30
------------------------------	-------------------	-------------------	-------------------	------------------------------

Machining of hardened materials in high continuous cut up to 180m/min cutting speed.

Machining of hardened materials in light to heavy interrupted cuts.

High wear resistance and impact toughness. Excels in white iron and steel rolls machining.

For machining high chrome alloy steels and Ni-hard cast iron.

For machining all types of cast iron. First choice for machining ferrous powder metals.

PCD

Diamond particles sintered into a polycrystalline structure yield a robust, wear-resistant material with excellent thermal conductivity. 1st choice for operations on non-ferrous materials, such as high-silicon aluminium. Metal matrix composites (MMC) and carbon fiber reinforced plastics (CRFP).

PDP410 N01-N20

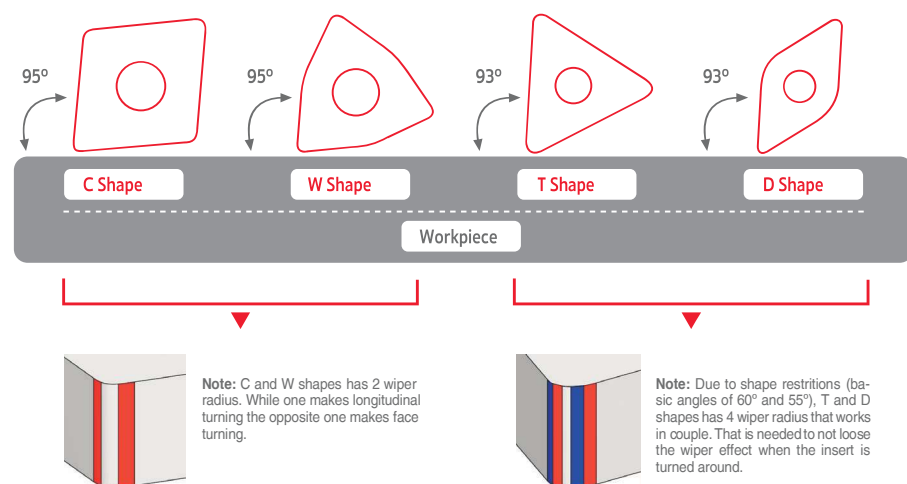
General purpose Fine surface finishing.
<14% silicon aluminium alloy

PDP403 N01-N10

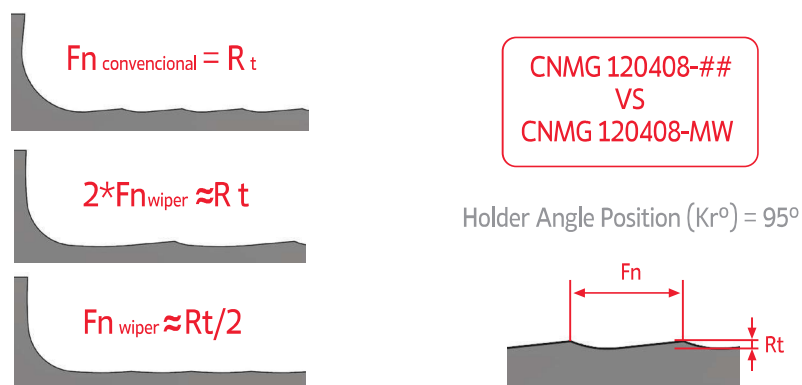
Highest abrasion resistance Bimodal grain structure
for increased diamond percentage content.
>14% silicon aluminium alloy



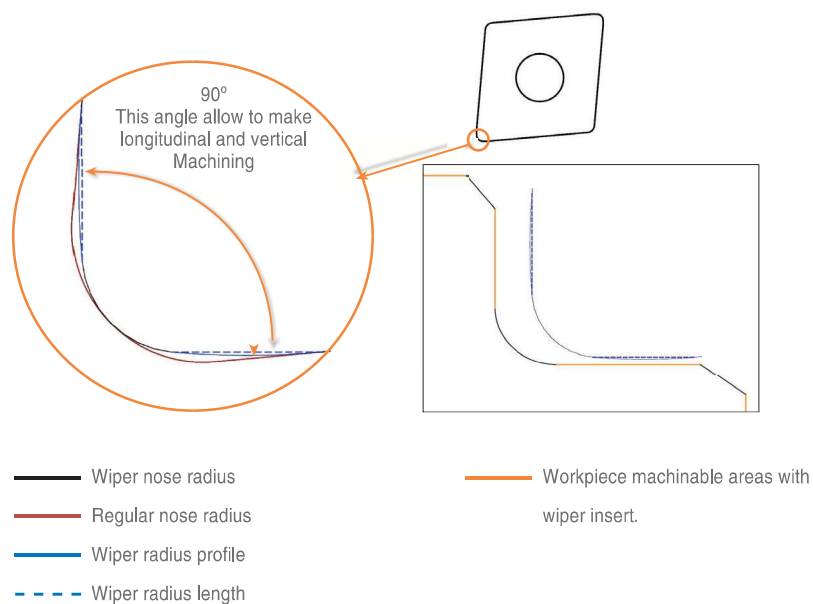
THE ANGLE POSITION (Kr°)



THE WIPER PURPOSE IS BASED ON PRODUCTIVITY:



EXAMPLE CNMG 120404-MW WITH ANGLE POSITION OF 95°



Note: wiper radius length must be parallel to machinable workpiece areas.

CUTTING SPEED (m/min)

Velocidade de corte (m/min) | Velocidad de corte (m/min)

ISO	Material	Grade fn (mm/r) HB (brinell)	CVD Coating														
			← Wear Resistance										Toughness →				
			PHG105			PHG115			NEW PH2G115			PHG125			NEW PH2G125		
			0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8
P	Unalloyed steel	125-170	280-380	210-300	200-250	250-350	180-270	170-220	285-400	205-310	195-250	200-295	170-240	150-215	230-335	195-275	170-245
	Low-alloy steel	180-350	220-280	200-260	170-210	190-250	170-230	140-180	215-285	195-260	160-205	170-230	140-210	120-190	195-260	160-240	135-215
	High-alloy steel	200-325	165-250	150-235	140-230	135-220	120-205	110-200	155-250	135-235	125-230	125-215	110-185	100-170	140-245	125-210	115-195
	Material	Grade fn (mm/r) HB (brinell)	CVD Coating						PVD Coating								
			← Wear Resistance						Toughness →								
			PHG140			PH5740			PH7910			PH7920					
			0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8	0.2	0.4	0.8			
	Unalloyed steel	125-170	135-230	120-210	115-200	125-220	110-200	105-190	140-245	130-225	115-220	130-230	120-220	110-210			
	Low-alloy steel	180-350	125-205	105-185	95-185	115-195	95-175	85-175	130-230	125-225	125-215	125-220	115-210	100-200			
	High-alloy steel	200-325	105-205	75-175	50-135	95-195	65-165	40-125	-	-	-	-	-	-			

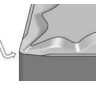
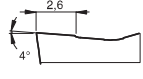
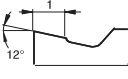
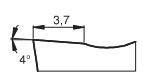
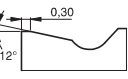
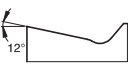
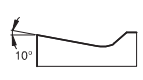
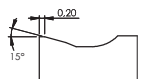
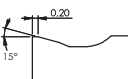
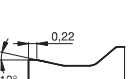
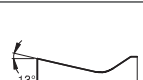
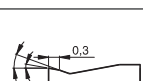
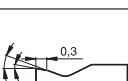
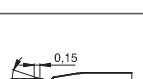
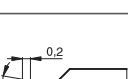
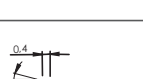
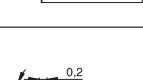
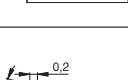
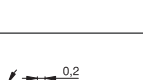
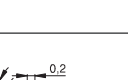
ISO	Material	Grade fn (mm/r) HB (brinell)	CVD Coating											
			← Wear Resistance						Toughness →					
			PHS215			PHS225			PHS240					
			0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6			
M	SS - Ferritic/martensitic	200-330	125-260	100-220	80-200	115-230	90-180	70-160	110-230	85-175	70-140			
	SS - Austenitic	180-330	120-255	95-215	75-195	110-225	85-175	65-155	105-225	80-170	65-135			
	SS - Austenitic-ferritic (Duplex)	230-260	110-245	85-205	65-185	100-215	75-165	55-145	95-215	70-160	55-125			
	Material	Grade fn (mm/r) HB (brinell)	PVD Coating											
			← Wear Resistance										Toughness →	
			PH7910			PHH910			PH7920			PHH920		
	0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6		
	SS - Ferritic/martensitic	200-330	120-220	110-210	105-205	130-230	120-220	115-215	110-210	100-200	95-195	120-220	110-210	105-205
	SS - Austenitic	180-330	115-215	105-205	95-195	125-225	115-215	105-205	105-205	95-195	85-185	115-215	105-205	95-195
	SS - Austenitic-ferritic (Duplex)	230-260	105-202	100-195	90-185	115-212	110-205	100-195	95-192	90-185	80-175	105-202	100-195	90-185

ISO	Material	Grade fn (mm/r) HB (brinell)	CVD Coating									
			← Wear Resistance							Toughness →		
			PH5705			PH5320			PH5740			
			0.2	0.4	0.6	0.2	0.4	0.6	0.2	0.4	0.6	
K	Marble cast iron	130-230	160-360	140-280	120-235	150-330	130-240	110-220	110-230	100-215	100-190	
	Grey cast iron	180-220	220-380	190-330	150-290	200-330	170-280	150-230	150-230	140-220	110-210	
	Nodular cast iron	160-380	150-280	135-265	120-220	140-250	125-230	110-220	125-220	115-205	105-185	

ISO	Material	Grade fn (mm/r) HB (brinell)	Uncoated	
			PH0910	
			0.15	0.8
N	Aluminium alloys	60-130	375-2400	40-240
	Cooper and cooper alloys	90-110	375-630	35-65

ISO	Material	Grade fn (mm/r) HB (brinell)	PVD Coating											
			← Wear Resistance									Toughness →		
			PH7910			PHH910			PH7920			PHH920		
			0.1	0.3	0.5	0.2	0.4	0.6	0.1	0.3	0.5	0.2	0.4	0.6
S	Heat Resistant super alloys (Iron base)	200-280	65-140	60-130	50-110	75-150	70-140	60-120	60-135	55-125	45-105	70-145	65-135	55-115
	Heat Resistant super alloys (Nickel base)	250-320	45-120	40-110	30-100	55-130	50-120	40-110	40-115	35-105	25-95	50-125	45-115	35-105
	Heat Resistant super alloys (Cobalt base)	200-320	45-115	40-105	30-90	55-125	50-115	40-100	40-110	35-100	25-85	50-120	45-110	35-95
	Titanium alloys (400<or<1050[MPa])	-	50-130	45-120	40-100	60-140	55-130	50-110	45-125	40-115	35-95	55-135	50-125	45-105

NEGATIVES | Negativas | Negativas

Insert Type	Application	Tolerance Class	Major field of Application	Geometry	Cutting Edge*		Cutting Conditions**		Available Shapes							
					at the nose radius	at the flank										
							Feed F _n (mm/rev)	Depth of cut DOC (mm)	KN __ 	CN __ 	DN __ 	RN __ 	SN __ 	TN __ 	VN __ 	WN __ 
Knux's	Finishing	U	P M K	01			0,20 to 0,35	1,00 to 6,00								
	Medium	U	P M K	02			0,40 to 0,70	1,50 to 6,00								
NEGATIVES - double side	Medium to Finishing	M	P M	01			0,12 to 0,50	1,00 to 6,50								
	Roughing to Medium	M	P M	02			0,14 to 0,50	0,70 to 5,00								
	Medium to Finishing	M	P M	03			0,15 to 0,50	0,80 to 6,00								
	Fine Finishing	M	M S NEW	GSF			0,08 to 0,15	0,10 to 2,50								
	Finishing	M	P	MF			0,05 to 0,60	0,10 to 2,50								
	Medium to Finishing	M	M N S	MS			0,08 to 0,80	0,20 to 4,50								
		M	M S	SF			0,10 to 0,55	0,60 to 3,00								
		M	P	LC			0,07 to 0,50	0,60 to 3,00								
		M	M S	GS			0,10 to 0,60	0,40 to 2,00								
	Medium Finishing	M	K	ST			0,10 to 0,50	0,15 to 10,50								
	Medium Finishing	M	P	MR			0,10 to 0,70	0,30 to 9,00								

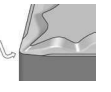
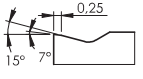
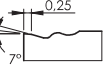
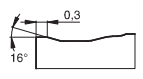
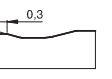
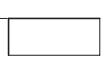
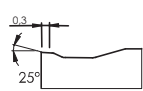
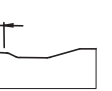
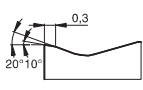
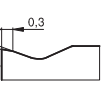
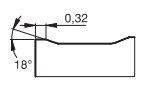
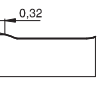
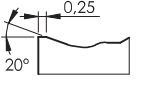
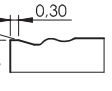
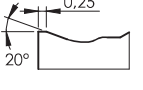
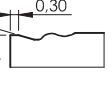
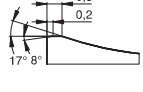
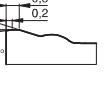
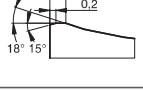
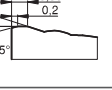
* T-Land varies according to the IC (IC reference used: 12,7mm)

** Cutting Conditions varies according to the Insert shape, IC and Nose Radius

CHIP BREAKER SPECIFICATIONS

Especificações de quebra-apanas | Especificaciones de rompevirutas

NEGATIVES | Negativas | Negativas

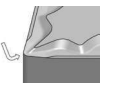
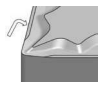
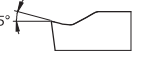
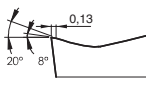
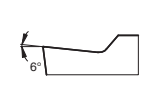
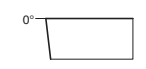
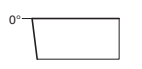
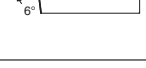
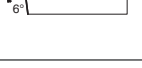
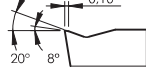
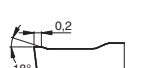
Insert Type	Application	Tolerance Class	Major field of Application	Geometry	Cutting Edge*		Cutting Conditions**		Available Shapes							
					at the nose radius	at the flank										
							Feed F _n (mm/rev)	Depth of cut DOC (mm)	KN __ 	CN __ 	DN __ 	RN __ 	SN __ 	TN __ 	VN __ 	WN __ 
NEGATIVES - double side	Medium	M	P	PM			0,10 to 0,60	0,30 to 9,00								
	Medium Wiper	M	P K	MW			0,15 to 0,90	0,30 to 6,00								
	Roughing	M	K	Flat			0,08 to 2,50	0,10 to 15,00								
	Roughing to Medium	M	P	MA			0,30 to 0,70	1,20 to 8,00								
		M	M S	SS			0,10 to 1,00	0,30 to 8,50								
	Roughing	M	P M K	HR			0,20 to 1,20	0,80 to 15,00								
		M	P M	RP			0,30 to 1,50	2,00 to 12,00								
NEGATIVES - Single side	Heavy to Roughing	M	P	GR			0,20 to 1,50	0,80 to 8,00								
		M	P M	HY			0,35 to 1,60	2,00 to 15,00								
		M	P K	HZ			0,35 to 1,60	2,40 to 17,00								

* T-Land varies according to the IC (IC reference used: 12,7mm)

** Cutting Conditions varies according to the Insert shape, IC and Nose Radius

CHIP BREAKER SPECIFICATIONS

POSITIVES | Positivas | Positivas

Insert Type	Application	Tolerance Class	Major field of Application	Geometry	Cutting Edge*		Cutting Conditions**		Available Shapes							
					at the nose radius	at the flank										
							Feed F _n (mm/rev)	Depth of cut D _{OC} (mm)	CC __ 80° 	DC __ 55° 	RC __ 	SC __ 90° 	TC __ 60° 	VC __ 35° 	VB __ 35° 	
POSITIVES - Clearance angle 5° and 7°																
Fine Finishing	Fine Finishing	M	M S NEW	FF			0,04 to 0,45	0,08 to 2,00								
			P M S		FS			0,01 to 0,25	0,10 to 3,00							
	Finishing	M	K	Flat			0,04 to 0,80	0,05 to 6,30								
			P		FP			0,03 to 0,45	0,06 to 2,40							
			P M S		BO			0,05 to 0,30	0,30 to 1,50							
		M	M S	FM			0,03 to 0,45	0,06 to 2,40								
			K		FK			0,03 to 0,30	0,06 to 2,40							
			P M K S	FW			0,05 to 0,50	0,30 to 3,50								
		M	M S		LM			0,08 to 0,35	0,20 to 3,00							
			P M K S		MW			0,10 to 0,50	0,50 to 4,00							
	Medium to Finishing	M	M S	GS			0,05 to 4,00	0,40 to 5,00								
			N		LN			0,05 to 1,60	0,05 to 7,00							
	Medium	M	P	MP			0,06 to 0,60	0,19 to 3,60								

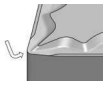
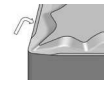
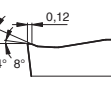
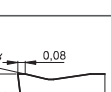
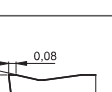
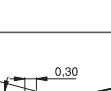
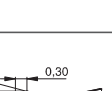
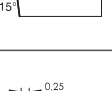
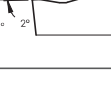
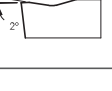
* T-Land varies according to the IC (IC reference used: 12,7mm)

** Cutting Conditions varies according to the Insert shape, IC and Nose Radius

CHIP BREAKER SPECIFICATIONS

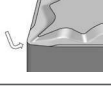
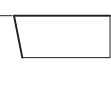
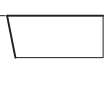
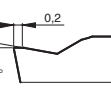
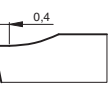
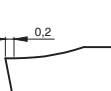
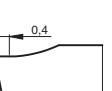
Especificações de quebra-apanas | Especificaciones de rompevirutas

POSITIVES | Positivas | Positivas

Insert Type	Application	Tolerance Class	Major field of Application	Geometry	Cutting Edge*		Cutting Conditions**		Available Shapes						
					at the nose radius	at the flank			CC __ 80°	DC __ 55°	RC __	SC __ 90°	TC __ 60°	VC __ 35°	VB __ 35°
							Feed Fn (mm/rev)	Deph of cut DOC (mm)							
POSITIVES - Clearance angle 5° and 7°	Medium	M	M	MM			0,06 to 0,60	0,19 to 3,60							
			S												
		M	K	MK			0,06 to 0,60	0,19 to 3,60							
	Roughing to Medium	M	P	CP			0,04 to 0,17	0,50 to 2,40							
			M												
			S												
		M	P	ST			0,05 to 3,20	0,80 to 12,80							
			M												
			K												
		M	P	RF			0,25 to 2,50	2,50 to 10,00							
			M												
		M	P	RM			0,80 to 2,50	3,20 to 13,00							
			M												

* T-Land varies according to the IC (IC reference used: 12,7mm)

** Cutting Conditions varies according to the Insert shape, IC and Nose Radius

Insert Type	Application	Tolerance Class	Major field of Application	Geometry	Cutting Edge*		Cutting Conditions**		Available Shapes	
					at the nose radius	at the flank			CC __ 80°	DC __ 55°
							Feed Fn (mm/rev)	Deph of cut DOC (mm)		
POSITIVES - Clearance angle 11°	Medium to Finishing	U	P	Flat			0,05 to 2,20	1,00 to 10,00		
			M							
			K							
	Finishing to Fine Finishing	M	P	12			0,03 to 0,55	0,10 to 3,00		
			M							
	Medium	M	P	13			0,03 to 0,55	0,20 to 7,00		

* T-Land varies according to the IC (IC reference used: 12,7mm)

** Cutting Conditions varies according to the Insert shape, IC and Nose Radius

CHIP BREAKER COMPARATIVE CHART

TURNING

NEGATIVES | Negativas | Negativas

Application		Palbit	Sandvik	Kennametal	Iscar	Seco	Tungaloy	Mitsubishi	Sumitomo	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Mat.	Operations													
P	Finishing	MF	QF	FS, LF	SF, PP TF		01 TF	PK FH	FA		DP	FA	VF, HU	
	Medium to Finishing	MF, LC	PF, QF, LC MF, R/L-K	FF, FN	F3P, NF, SF	FF2, FF1	TS, TSF, ZF 11, NS, AS, TQ, NM, CB, C	SA, FY, C, SH, MP	SU, FL, SE, SX	NF3, NS6	PQ, VFCJ PQ, GP, PP, HQ, GS, CQ	FG, VF, EA FC, MC, ML, MP	VL	CF, TF
	Medium Wiper	MW*	WL, WF, WMX WM, WR	FW, MW, RW	WF, WG	W-MF2, W-MF3	AFW, FW, ASW, SW	SW	LUW, SEW, GUW	NF, NM	WP, WQ	WS, WT		TFQ, TMQ
	Medium to Roughing	PM, MR, GR, MA	PM, QM, XM, XRM	P, MN	M3P, M3M, PP, TF, GN	MR7, MR6, M5, M6	TM, AM, DM, ZM All-round	MA, MH, MP	GU GE, UX	NMT, NM4	HS, PT, GT, CS, PS	PC, MT MC, MG-	VM	TMF, TMM M50
	Roughing	HR, RP", GR, MA	HM, PR MR	RN, RP MR	NR MR	MR6, R5	TH, THS	RP, GH HZ, HL	MU, ME HG	NM5, NM6 NM9	PH All-round	RT	GR, HR	TM, TRM
	Heavy Roughing	RP", HY", HZ"	PR, MR, HR, QR	RM RH	R3P, NM	R4, RR6	TU, TRS, TUS	HM, HX HV	HG, HP HU, HW HF	NR6, NRF NRR	PX	HT, HD RX, RH HY, HZ	GH, VT	TRR, TR, R28, R58 R88
M	Fine Finishing	GSF												
	Finishing	SF, GS	MF, SM, XF, LC, R/L-K	FP	TF, VL	FF2, FF1, MF1	SF, SA, SS	GM, MS, SH, LM	EX, EG, SU, EF	NF4 NMS	GU, MQ	EA, SF, SU, FG	VP2	CF, F30 M34 F32, TF
	Medium	MS, SF, GS	MM, QM, SM XM, XRM	MP, P	M3M, PP	MF2, FF2, MF5	SM S	MM, MA ES	GU HM	NM4	TK MU	EM, ET	VP3, HS	TMF, M42 M30, M52
	Roughing	SS, RP, HZ"	MR HM, PR	UP, RP	MR, MH	M5, M6, R8, RS, R6	TH, SH, TU	GH, RM, HZ	EM, MU	NR4, NRT, NRS	MS	"GR, VM, VH, GH"		TM, M60, TRM, TRR R80
K	Medium to Finishing	ST	KF, XF	FN	GN	M4, M5	CF	LK, MA	UZ		C	FG	B25	CF
	Medium	ST, HR, FLAT	KM, QM, XM, XRM	RP, UN		FLAT	CM All-round	MK GK	GZ	NM5	ZS All-round	MT MG	FLAT	M50
	Roughing to Heavy Roughing	HR, FLAT, HZ"	KR Without chip breaker	Without chip breaker		MR7, M5	CH Without chip breaker	RK Without chip breaker	Without chip breaker	Without chip breaker	GC Without chip breaker	RT	GR	TMR, TR R28, R58, R88
N	Medium	MS	MF, QM	MS, MP MG	PP	-	P		AX		AH, A3	ML	HA	F32
S	Finishing	GS, SF, MS	SF, SM 01	FS, LS MS		MF1, M1	HRF	FJ, LS	EF EX	NFT NF4	MQ	SF	VP1	
	Medium	SF, SS, DOMX	MM, QM SMR	UP, P, NGP RP	PP	MR3, MR4	HRM, HMM, SA	MS RS GJ	EG MU	NMS NM4, NRS, NR4	TK MS MU	SU	VP2, VP3	M34, M52

* = Wiper

" = Single face insert

Spare Parts

Technical Data

CHIP BREAKER COMPARATIVE CHART

Tabela comparativa de quebra-aparas | Tabla de comparación de rompevirutas

POSITIVES - CLEARANCE ANGLE 5°, 7° AND 11° | Positivas - Alívio 5°, 7° e 11° | Positivas - Alivio 5°, 7° y 11°

Application		Palbit	Sandvik	Kennametal	Iscar	Seco	Tungaloy	Mitsubishi	Sumitomo	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Mat.	Operations													
P	Fine Finishing	FS	UM	UF	SF	F1, MF2	01	FV, SMG	FC, FW	PF2	CF, CK	FA	HFP	F32
	Finishing	FS, FP	R/L-K, PF, XF, UF	11, GM, LF	PF, SM, 14 17, 19, XL	FF1, F2, M3, MF2	PSF, PF, SS PS, PSS, TS	FP, FV, SV, LP	FR, FZ, LU, FK, SS, SC SU, SK, SF	PF5, PF4, PS5	CQ, GK, GP HQ, XP, XQ	FG, GF	VF, VL, F	SF, SMF, SMQ
	Finishing Wiper	FW*	WF	FW	WF	W-F1	TSW, W08	SW	LUW, SDW	PF				
	Finishing to Medium	MP	PM	MF, MP, GM, MR	DT, HQ	MF2	PM, 23, 24 RS	MP, MV	SU, UM, UJ	PM5	VF, MF	MT, PC	HMP, C25, M .CMX	SM
	Finishing to Medium Wiper	MW*	WM	MW	WG			MW		PM		WT		
M	Fine Finishing	FS, FF	UM	LF, GM	SM	F1, MF2, FF1	PSF	FJ	FC	PF2	GQ, GF	FG	HFP	
	Finishing	FS, FM, LM	MF, UF, R/L-K	MF	PF, 14	F2, M3	SS, PSS	FM, FV, SV	SU	PF4	MQ	FA	VF, F	SF, SMF, SMQ
	Finishing Wiper	FW*	WF	FW	WF	W-F1		SW		PF				
	Finishing to Medium	MM, LM	MM, XM	MF, MP	SM	MF2, M5	PM	MM, MV	UM	PM5	XQ, VF	MT, PC	HMP, C25, M	F23, F43, SM
	Finishing to Medium Wiper	MW*	WM	MW	WG			MW		PM		WT		
K	Finishing	FK	KF	11	PF	M3		FV	SK		GK	FA	HMP	SF
	Finishing Wiper	FW*	WF	FW	PF	W-F1		SW	LUW	PF		MT, PC		
	Finishing to Medium	MK, FLAT	KM, KR	MF, MP, FLAT	PM5, 19, FLAT	M5	CM, FLAT	MV, MK, FLAT	UM, FLAT	PM5, PS5	FLAT	FALT	C25, HMP, FLAT	25P, 27, 29
	Finishing to Medium Wiper	MW*	WM	MW		W-F2		MW		PM		WT		
N	Medium	LN	AL	HP, GT	AF, AS	AL	AL, PP	AZ, R/L-F	AG, AX, AY	PF2, PM2	AH, A3	FL	AK, AR	23P, 25P, 27
S	Fine Finishing	FS, FF	UM	LF	SM	F1, MF2	PSF, PF, SS PS, PSS, TS	FJ	FC	PF2	GQ		HFP	SF
	Finishing	FM, LM	MF, UF, R/L-K	GM	PF, 14	F1	PSS, PS	FV	FX, FY	PF4	MQ	FA	HFP	F23, F43, SM
	Finishing Wiper	FW*	WF	FW	WF					PF				
	Finishing to Medium	MM, LM	MM, XM	MF	SM		PM	MV	SI	PM5	MQ	FG	HMP	SM, 25P 29
	Finishing to Medium Wiper	MW*	WM	MW	WG					PM				
	Medium to Roughing	GS												

GRADES COMPARATIVE CHART

CVD COATED GRADES | Graus revestidos a CVD | Calidades con recubrimiento CVD

ISO		Palbit	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Material														
STEEL	P05	PHG105	GC4305	KCP05B KC9105	IC9150 IS8080 IC428	TP0500 TP1500	UE6105 MC6005	ACP810P AC700G	T9105 T9005	WPP01	CA510 CA5505	TT1300 TT8105	NC3010	
	P10	PHG105 PHG115 PH2G115	GC4215 GC4315 GC4415	KCP10B KCP10 KCP25 KCP25C KC9110	IC9150 IC9015 IC8150 IC8250	TP1500 TP1501 TP2500	UE6105 MC6015 MC6115 UE6110 MY5015	AC810P AC8015P AC700G AC820P AC2000	T6215 T9105 T9005 T9115 T9215	WPP05 WPP10S WPP10G	CAS510 CA115P CA5505 CA515 CA5515	TT1300 TT7310 TT7400 TT8115 TT8115B	NC3215	CTC1110 CTC1115 CTC3110 TCC410
	P20	PHG115 PH2G115 PHG125 PH2G125	GC4215 GC4315 GC4415 GC4225 GC4325 GC4425	KCP25B KCP25 KCP25C KC9125	IC9015 IC8250 IC9050 IC9250 IC8350	TP1501 TP2500 TP2501	MC6015 MC6115 UE6110 MC6025 MC6125 UE6020 MY5015	AC8015P AC8025P AC820P AC2000 AC830P	T6215 T6225 T9115 T9215 T9125 T9225	WPP10S WPP10G WPP20S WPP20G	CA115P CA515 CA5515 CA525 CA5525 CA6525 CR9025	TT3500 TT5100 TT7400 KT7300 TT7800 TT8115B	NC3220 NC3220 NC3120	CTC1110 CTC1115 CTC1125 CTC1130 CTC1425
	P30	PHG125 PH2G125	GC4225 GC4325 GC4425 GC4335	KCP25B KCP25C KCP30 KCP40 KCP8050	IC8250 IC8350 IC9250 IC9350	TP2500 TP2501 TP3500 TP3000	MC6025 MC6125 UE6020 UE6035 UH6400	AC8025P AC830P AC630M	T6225 T9125 T9225 T9135 T9035	WPP20S WPP20G WPP30S WPP30G	CA525 CA5525 CA6525 CA530 CA5335 CR9025	TT3500 TT5100 TT7400 TT8125B KT7300	NC3215 NC3225 NC3120	CTC1125 CTC1130 CTC1135 CTC1425
	P40	PH5740 PHG140	GC4235 GC4335	KCP30B KCP40B KC9140 KC9040 KC9240 KC9245	IC8350 IC9350	TP3500 TP3000	MC6030 UE6035 UH6400	AC630M	T9135 T9035	WPP30S	CA530 CA5535	TT5100 TT7100 TT8135 KT7300 TT7800	NC500H NC5330	CTC1135 CTC1435 CTC2135
	P40	PH5740 PHG140	GC4235 GC4335	KCP30B KCP40B KC9140 KC9040 KC9240 KC9245	IC8350 IC9350	TP3500 TP3000	MC6030 UE6035 UH6400	AC630M	T9135 T9035	WPP30S	CA530 CA5535	TT5100 TT7100 TT8135 KT7300 TT7800	NC500H NC5330	CTC1135 CTC1435 CTC2135
STAINLESS STEEL	M10	PHS215	GC2015	KCM15	IC9250 IC6015 IC8250	TM2000	MC7015 US7020	AC610M AC620M	T6120 T9115 T9215	WMP10S WAM20	CA6515		NC9020	CTC1110 CTC1115
	M20	PHS215 PHS225	GC2015 GC2220	KCM15 KCM25 KC9225	IC9250 IC6015 IC6025 IC9025 IC656	TM2000 TM4000	MC7015 US7020 MC7025	AC610M AC620M AC6030M AC630M	T6020 T6120 T6130 T9125 T9215	WMP10S WMP20S	CA6515 CA6525	TT5100 TT9225	NC9020	CTC1115 CTC1125 CTC1130 CTC1135
	M30	PHS225 PHS240	GC2025 GC2220	KCM25 KCM35 KC9230	IC9350 IC6025 IC635	TM4000	MC7025 MC7035 US735	AC6030M AC6040M AC630M	T6030 T6130	WMP20S WMP30	CA6525	TT5100 TT7100 TT9225 TT9235	NC9025	CTC1125 CTC1135 CTC1425 CTC1435 CTC2135
	M40	PHS240	GC2025	KCM35 KC9240 KC9245	IC6025 IC9350	TM4000	MC7035 US735	AC6030M AC6040M AC630M		WMP30		TT7100 TT9235	NC9025	CTC2135
	M50	PHS228	GC2035	KC9245	IC9350								NC9035	
	M50	PHS228	GC2035	KC9245	IC9350								NC9035	
CAST IRON	K05	PH5705	GC3205 GC3210	KCK05 KC9315	IC5005 IC9007	TK1500 TK1001 TK1000 TK1501	MC5005 UC5105	AC405K AC4010K	T5105	WAK10 WVK10	CA310 CA4505 CA4010	TT7005		
	K10	PH5705 PH5320	GC3205 GC3210 GC3215	KCK15B KCK15B KC920 KC9315 KC9325	IC5005 IC5010 IC9150 IC428 IC4028	TK1001 TK1000 TK1501 TK2000 TK2001 TK2501	MC5015 UC5105 UC5115 MY5015	AC405K AC4010K AC4015K AC420K AC700G	T5105 T5115	WVK10 WAK20 WVK20	CA310 CA315 CA320 CA4515 CA4110 CA4115	TT7005 TT7015 TT3100 TT7310 TT8115	NC6205 NC6210 NC6215	CTC1110 CTC1115 CTC3110 TCC410 CTC3215
	K20	PH5320	GC3215	KCK20 KC9110 KC9325	IC5010 IC8150 IC9150 IC9015 IC418	TK2001 TK2000 TK2501	MC5015 UC5115 UE6110 MY5015	AC4015K AC420K AC700G AC820P	T5115 T5125	WVK20 WAK30	CA315 CA320 CA4515 CA4115 CA4120	TT7310 TT7015 TT8115	NC6215	CTC1115 CTC1125 CTC1130 CTC1425 CTC3215
	K30	PH5740		KC9125 KC9325	IC9015 IC418		UE6110	AC820P	T5125					TSC30

UNCOATED GRADES | Graus não revestidos | Calidades sin recubrimiento

ISO		Palbit	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Material														
N	N01	PH0910	H10		IC20				KS05F	WK1	KW10	K10		
	N10		H10 H13A	KU10 K313 K68	IC20 IC08 IC28	890 HX KX	HTi10		TH10	WK1	KW10 KWK15	K10	H01	
	N20		H10 H13A	KU10 K313 K68	IC08 IC28	HX KX 883		H1	KS15F	WK1	KW10 KWK15		H01	

GRADES COMPARATIVE CHART

PVD COATED GRADES | Graus Revestidos a PVD | Calidades con recubrimiento PVD

ISO		Palbit	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Material														
P	P01	PH7910									PR915 PR1005	PV3030	PC8110	
	P10	PH7910	GC1525 GC1025	KC5010 KC5510 KU10T	IC250 IC350 IC507 IC570 IC807 IC907 IC908	CP200 TS2001	VP10MF		AH710		PR915 PR1005 PR930 PR1025 PR1115 PR1225 PR1425	PV3010 PV3030 TT7080 TT1040	PC230	
	P20	PH7920	GC1525 GC1025 GC1125	KC5025 KC5525 KC7215 KC7315 KU25T	IC228 IC250 IC308 IC328 IC350 IC354 IC507 IC528 IC570 IC807 IC808 IC907 IC908 IC928 IC1008 IC1028 IC3028	CP250 TS2500	VP10RT VP20RT VP15TF VP20MF	AC520U	AH710 AH725 AH120 SH730 GH730 GH130		PR930 PR1025 PR1115 PR1225	TT7220 TT9020 TT7080 TT9080 TT7070	PC5300 PC8115	SR226 GM127
	P30	PH7920	GC1025 GC1125	KC7015 KC7020 KU25T KC7235	IC228 IC250 IC328 IC330 IC354 IC528 IC1008 IC1028 IC3028	CP500	VP10RT VP20RT VP20MF	AC530U	AH725 AH120 SH730 GH730 GH130 AH740 J740			TT9030 TT7030 TT7080 TT9030 TT9080	PC8115	GM40 CTP1235 CTP2235 SR226 GM127
M	M01	PH7910 PHH910	GC1005		IC520	TS2000 CP200	VP10MF			WSM10S	PR915	TT5080		
	M10	PH7910 PHH910	GC1005 GC1025 GC1115 GC1125 GC1105	KC5010 KC5510 KC6005 KC6015	IC330 IC354 IC507 IC520 IC570 IC807 IC907 IC3028	CP200 TS2000	VP10MF		AH710	WSM20S	PR915 PR1025 PR1225 PR1425	TT5030 PV3010 PV3030 TT9030	PC8110 PC9030	
	M20	PH7920 PHH920	GC1005 GC1025 GC1125 GC1105	KC5025 KC5525 KC7020 KC7025	IC250 IC330 IC354 IC808 IC908 IC1008 IC1028 IC3028	CP250 TS2500 CP500	VP10RT VP20RT VP15TF VP20MF	AC520U	AH710 AH725 AH120 SH730 GH730 GH130 GH330 AH60	WSM30S	PR1025 PR1125 PR1225 PR915 PR930	TT5030 PV3030 TT9020 TT9030	PC9030 PC8115	CTP2120 CTP1235 SR226 GM127
	M30	PH7920 PHH920	GC1125 GC2035	KC7030 KC7225	IC228 IC250 IC328 IC330 IC1008 IC1028 IC3028	CP500	VP10RT VP20RT VP15TF VP20MF MP7035	AC520U AC530U	GH330 AH725 AH120 AH730 GH730 GH130 J740 AH645		PR1125	TT9030 TT9080 TT8030	PC9030	CTP2240 CTP1235 CTP2235 SR226 GM127
STEEL														

ISO		Palbit	Sandvik	Kennametal	Iscar	Seco	Mitsubishi	Sumitomo	Tungaloy	Walter	Kyocera	Taegutec	Korloy	Ceratizit
Material														
S	S01	PH7910 PHH910			IC507 IC907		MP9005 VP05RT		AH905 AH905 SH730	WDSM10S	PR915		PC8110	
	S10	PH7910 PHH910	GC1105 GC1115 GC1005 GC1025	KC5010 KC5410 KC5510	IC507 IC903 IC300 IC808	CP200 CP250 TS2000 TS2500 CP250	MP9015 VP10RT MP9015	AC510U	AH110 AH120	WSM20S	PR915	TT5030 TT5030	PC8110 PC8115 PC8105	CM40 SR226 CM45
	S20	PH7920 PHH920	GC1025 GC1125	KC5025 KC5525	IC908 IC928 IC3028 IC806	TS2500 CP500	MT9015 VP20RT	AC510U AC520U	AH120 AH720	WSM30S	PR1125	TT8020 TT8030	PC8815 PC5300	CTP2440 GM127
	S30	PH7920 PHH920	GC1125				VP15TF	AC520U	AH725		PR1125	TT8020	PC5400	CTP2135

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