THE NEW VALUE FRONTIER

KYOCERA

THIEME
CNC-Werkzeugtechnik

PT600M MEGACOAT CERAMIC

For Hardened Material and Cast Iron Machining

- **Special PVD coating controls crater wear and achieves stable machining with superior oxidation resistance.**

- **Sudden fracture is controlled through miniaturization of the ceramic structure.**

MEGACOAT

Für gehärtete Materialien und Gußbearbeitung

- Die spezielle PVD Beschichtung verhindert Kerbverschleiß und ermöglicht stabile Bearbeitungen bei höherer Oxidationsbeständigkeit.
- Plötzlicher Werkzeugbruch wird durch die miniaturisierte Keramikstruktur verhindert.

Pour les matériaux durs et les fontes

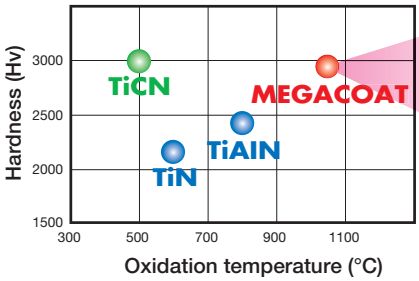
- Revêtement spécial qui diminue l'usure en cratère, donne une meilleure résistance à l'oxydation, ce qui permet d'améliorer les conditions de coupe.
- La rupture d'arête soudaine est contrôlée grâce à la miniaturisation de la structure céramique).

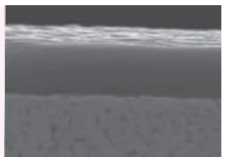
Per acciai temprati e lavorazione di ghisa

- Uno speciale rivestimento PVD riduce l'usura per craterizzazione consentendo una maggiore stabilità in lavorazione ed una superiore resistenza all'ossidazione.
- La miniaturizzazione della struttura della ceramica controlla le rotture improvvise del tagliente.

■MEGACOAT

Special PVD coating controls crater wear and achieves stable machining with superior oxidation resistance.





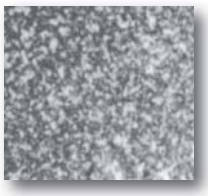
High oxidation resistance
(≧1000°C)
→Controlling oxidation wear

■Ceramic substrate characteristics

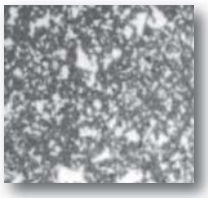
Static property comparison of PT600M and Conv. A

Grade	Hardness (GPa)	Fracture Toughness (MPam$^{1/2}$)	Transverse Strength (MPa)	Oxidation resistance* (mg/cm^2)
PT600M	20.0	4.1	1000	2.1
Conv. A	19.0	4.3	850	2.8

*Oxidation resistance: Evaluated for one hour at 1200°C



PT600M



Conv. A

PT600M achieves miniaturization of the structure

■Recommended cutting conditions | Empfohlene Schnittdaten Conditions de doupe recommandées | Parametri di taglio consigliati

·Hardened material | Gehärtetes Material | Matériaux durs | Acciaio temprato (rε=0.8mm)

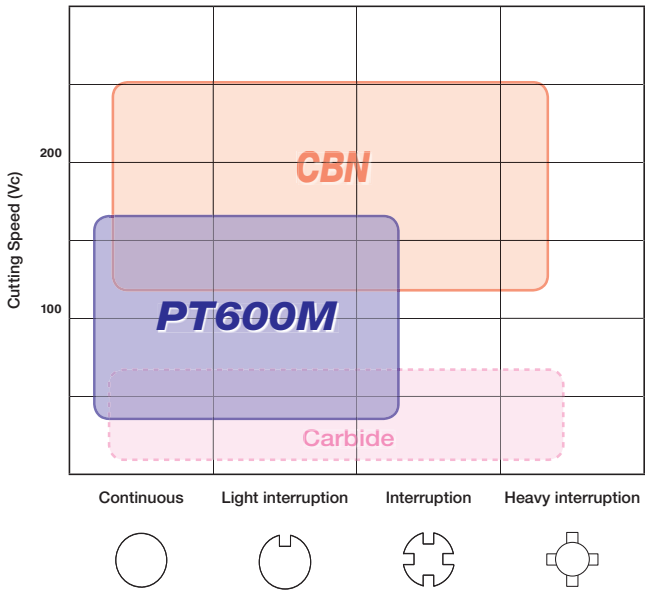
Hardness of workpiece material	Vc (m/min)	ap (mm)	f (mm/rev.)
40~50HRC	60-80-100	0.2-0.5-0.7	0.05-0.1-0.15
50~65HRC	30-40-60	0.2-0.5-0.7	0.05-0.1-0.15

·Gray cast iron | Grauguß | Fontes | Ghisa grigia (rε=0.8mm)

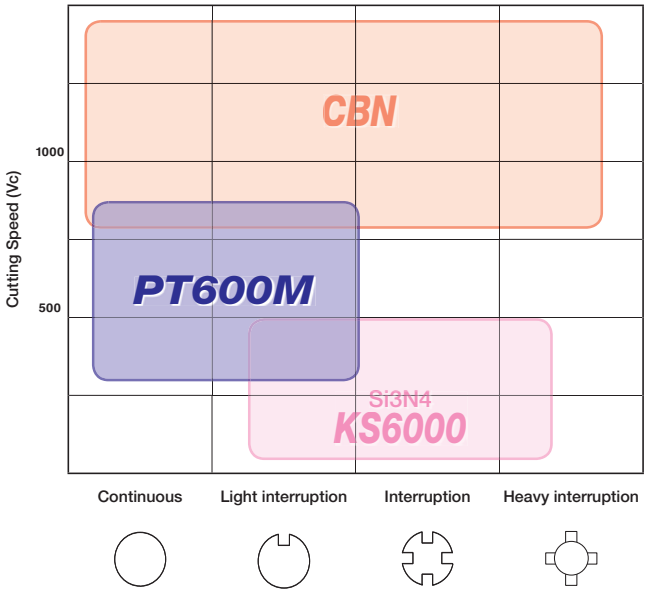
Workpiece material	Vc (m/min)	ap (mm)	f (mm/rev.)
GG25-GG30	300-450-600	0.3-0.5-1.0	0.1-0.2-0.3

■Application range |Anwendungsbereich | Gamme d´usinage | Campo di Applicazione

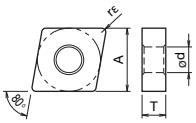
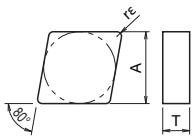
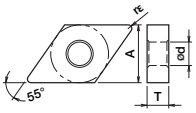
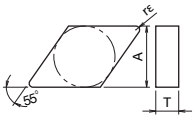
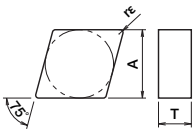
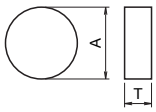
● Hardened material | Gehärtetes Material
Matériaux durs | Acciaio temprato

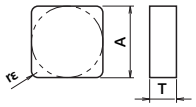
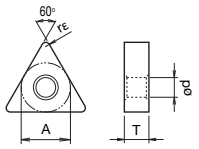
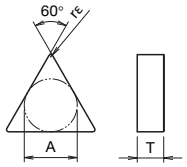
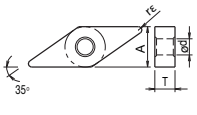


● Gray cast iron | Grauguß
Fontes | Ghisa grigia

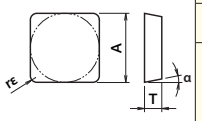
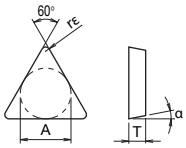
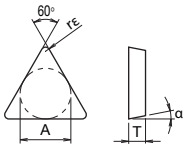


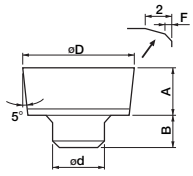
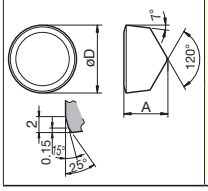
■Standard Items (Negative Type Inserts)

Shape	Description	Edge Preparation	Dimension(mm) A	T	ød	rε
	CNGA 120404S02025	S02025	12.70	4.76	5.16	0.4
	120408S02025					0.8
	120412S02025					1.2
	CNGA 120404T02025	T02025	12.70	4.76	5.16	0.4
	120408T02025					0.8
	120412T02025					1.2
	CNGN 120404T00520	T00520	12.70	4.76	-	0.4
	120404T02025	T02025				0.4
	120408T00520	T00520				0.8
	120408T02025	T02025				0.8
	120412T02025					1.2
	DNGA 150404S02025	S02025	12.70	4.76	5.16	0.4
	150408S02025					0.8
	DNGA 150404T02025	T02025	12.70	4.76	5.16	0.4
	150408T02025					0.8
	150412T02025					1.2
	DNGA 150604T02025	T02025	12.70	6.35	5.16	0.4
	150608T02025					0.8
	150612T02025					1.2
	DNGN 150408T02025	T02025	12.70	4.76	-	0.8
	DNGN 150704S02025	S02025	12.70	7.94	-	0.4
	150708S02025					0.8
	150712S02025					1.2
	ENGN 130708S02025	S02025	12.70	7.94	-	0.8
	130712S02025					1.2
	ENGN 130704T02025	T02025	12.70	7.94	-	0.4
	130708T02025					0.8
	130712T02025					1.2
	130716T02025					1.6
	130720T02025					2.0
	130730T02025					3.0
	RNGN 090400S02025	S02025	9.525	4.76	-	-
	120400S02025		12.70			-
	120700S02025			7.94	-	-
	150700S02025		15.875			-
	RNGN 090400T02025	T02025	9.525	4.76	-	-
	120400T02025		12.70			-
	120700T02025			7.94	-	-
	150700T02025		15.875			-
	RNGN 120700K15015	K15015	12.70	7.94	-	-

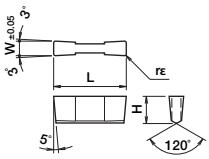
Shape	Description	Edge Preparation	Dimension(mm) A	T	ød	rε
	SNGA 120408S02025	S02025	12.70	4.76	5.16	0.8
	120412S02025					1.2
	SNGA 120408T02025	T02025	12.70	4.76	5.16	0.8
	120412T02025					1.2
	120416T02025					1.6
	SNGN 120408S02025	S02025	12.70	4.76	-	0.8
	120412S02025					1.2
	120416S02025					1.6
	SNGN 120404T02025	T02025	12.70	4.76	-	0.4
	120408T02025					0.8
	120412T02025					1.2
	120416T02025					1.6
	120420T02025					2.0
	SNGN 120704S02025	S02025	12.70	7.94	-	0.4
	120708S02025					0.8
	120712S02025					1.2
	120716S02025					1.6
	120720S02025					2.0
	SNGN 120704T02025	T02025	12.70	7.94	-	0.4
	120708T02025					0.8
	120712T02025					1.2
	120716T02025					1.6
	120720T02025					2.0
	SNGN 150712T02025	T02025	15.875	7.94	-	1.2
	150716T02025					1.6
	TNGA 160404S02025	S02025	9.525	4.76	3.81	0.4
	160408S02025					0.8
	160412S02025					1.2
	TNGA 160404T02025	T02025	9.525	4.76	3.81	0.4
	160408T02025					0.8
	160412T02025					1.2
	TNGN 110304T00520	T00520	6.35	3.18	-	0.4
	110308T00520					0.8
	110312T00520					1.2
	TNGN 160404S02025	S02025	9.525	4.76	-	0.4
	160408S02025					0.8
	160412S02025					1.2
	TNGN 160404T02025	T02025	9.525	4.76	-	0.4
	160408T02025					0.8
	160412T02025					1.2
	TNGN 160708S02025	S02025	9.525	7.94	-	0.8
	TNGN 160704T02025	T02025	9.525	7.94	-	0.4
	160708T02025					0.8
	160712T02025					1.2
	VNGA 160404S02025	S02025	9.525	4.76	3.81	0.4
	160408S02025					0.8
	VNGA 160404T02025	T02025	9.525	4.76	3.81	0.4
	160408T02025					0.8
	160412T02025					1.2

■Standard Items (Positive Type Inserts)

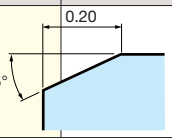
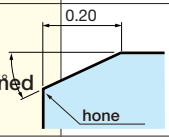
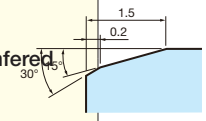
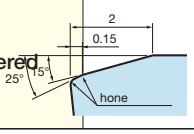
Shape	Description		Edge Preparation	Dimension(mm)			
				A	T	rε	α
	SPGN	090308T00820	T00820	9.525	3.18	0.8	11°
	SPGN	120308S00820	S00820	12.70	3.18	0.8	
	SPGN	120308T00820	T00820	12.70	3.18	0.8	
		120312T00820				1.2	
		120316T00820				1.6	
	TBGN	060104S00820	S00820	3.97	1.59	0.4	5°
		060108S00820				0.8	
	TBGN	060104T00820	T00820	3.97	1.59	0.4	
		060108T00820				0.8	
	TPGN	090204T00820	T00820	5.56	2.38	0.4	11°
		090208T00820				0.8	
	TPGN	110304S00820	S00820	6.35	3.18	0.4	
		110308S00820				0.8	
	TPGN	110304T00820	T00820	6.35	3.18	0.4	
		110308T00820				0.8	
	TPGN	160304S00820	S00820	9.525	3.18	0.4	
		160308S00820				0.8	
		160312S00820				1.2	
	TPGN	160304T00820	T00820	9.525	3.18	0.4	
		160308T00820				0.8	
		160312T00820				1.2	

Shape	Description		Edge Preparation	Dimension(mm)				
				øD	ød	A	B	F
	RBG	12K20003	K20003	12	6	6	3	0.2
		16K20003		16	8	8	5	0.2
		20K20003		20	10	10	5	0.3
	RCGX	090700P20015	P20015	9.525	-	8	-	-
		120700P20015		12.70	-	8	-	-

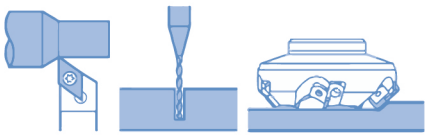
■Standard Items (Grooving Insert)

Shape	Description		Edge Preparation	Dimension(mm)			
				W	rε	L	H
	GH	4020-05	T01020	4.0	0.5	20	7.5
		5020-05	T01020	5.0			
		6020-05	T01020	6.0			
		7020-05	T01020	7.0			

■Edge preparation

Symbol	Classification		Example		Shape
	Gray cast iron	Hardened material			
T Chamfered 		☆	T00520	0.05mm×20°Chamfered	e.g.) T02025
			T00820	0.08mm×20°Chamfered	
			T01020	0.10mm×20°Chamfered	
			T02025	0.20mm×25°Chamfered	
S Chamfered and honed 		★	S00820	0.08mm×20°Chamfered and honed	e.g.) S02025
			S02025	0.20mm×25°Chamfered and honed	
K Double Chamfered 		★	K15015	1.50mm×15°Chamfered	e.g.)K20003
			K20003	2.00mm×3°Chamfered	
P Double Chamfered and honed 			P20015	2.00mm×15°Chamfered and honed	e.g.)P20015

★:1st. Choice ☆:2nd. Choice



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