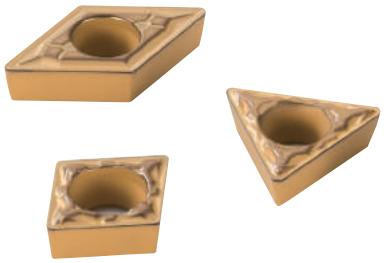
CVD Coated Carbide Grade for Steel

CA025P

NEW

Next Generation CVD Coating for Longer Tool Life

Improved Wear Resistance
Excellent Fracture Resistance
Excellent Adhesion Resistance and Chipping Resistance
Positive Inserts Added to the Lineup



CVD Coated Carbide Grade for Steel

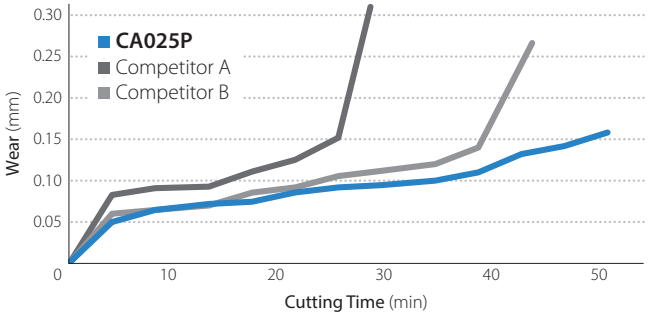
CA025P

Next Generation CVD Coating for Longer Tool Life

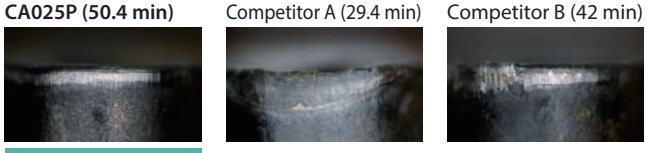
1 Improved Wear Resistance with New CVD Grade for Steel

Thickened Alumina with Good Thermal Resistance (Twice as thick as conventional coating)
Improved Plastic Deformation Resistance by Increased Temperature Strength

Wear Resistance Comparison (Internal Evaluation)



CA025P (50.4 min) | Competitor A (29.4 min) | Competitor B (42 min)



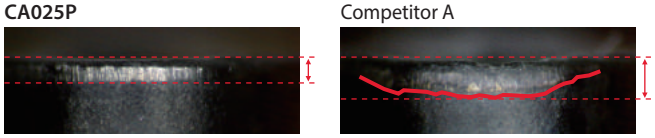
Good Surface Condition

Cutting Conditions : Vc = 300 m/min, ap = 1.5 mm, f = 0.3 mm/rev, Wet Workpiece : SCM435

Wear Comparison (Internal Evaluation) Cutting Time 25.2 min

CA025P Maintains Smooth and Flat Surface with Stable Tool Life

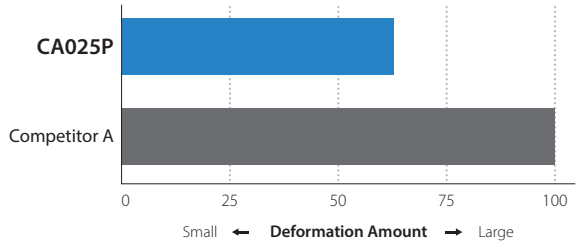
CA025P | Competitor A



Stable Wear on Surface | Unstable Wear Pattern

Cutting Conditions : Vc = 300 m/min, ap = 1.5 mm, f = 0.3 mm/rev, Wet Workpiece : SCM435

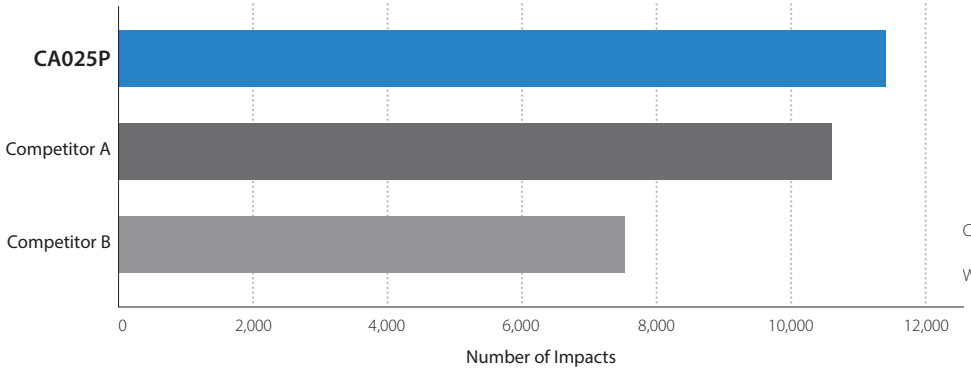
Plastic Deformation Comparison under High Temperature (Internal Evaluation)
Comparison with Competitor A



2 Excellent Fracture Resistance

New Substrate with High Stability Provides Excellent Chipping Resistance

Fracture Resistance Comparison (Internal Evaluation) Average of 5 times



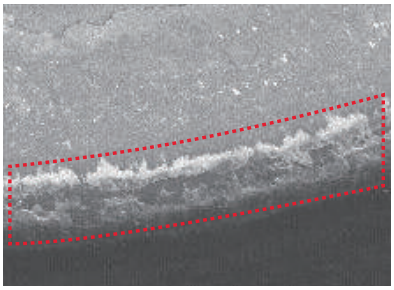
Cutting Conditions : Vc = 250 m/min,
ap = 1.5 mm, f = 0.35 mm/rev, Wet
Workpiece : SCM440 (with 4 Slots)

3 Excellent Adhesion Resistance and Chipping Resistance

Specialized Post-coating Process Prevents Adhesion

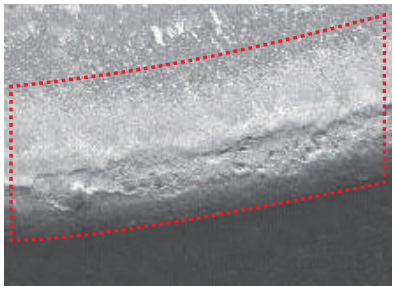
Adhesion on the Edge after Cutting (Internal Evaluation)

Specialized Post-coating



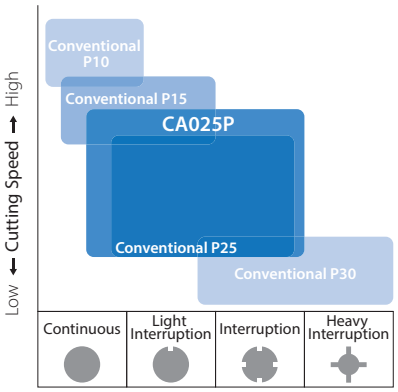
Less Adhesion

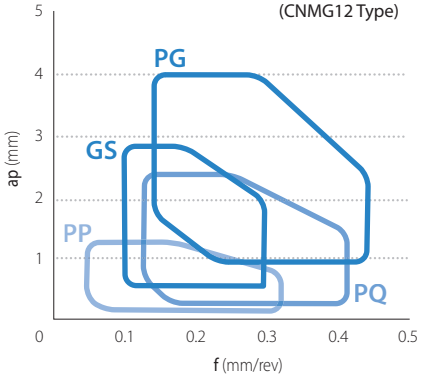
Not Specialized Post-coating



Wide Area of Adhesion
* Adhesion Area Appears White

Cutting Conditions : Vc = 270 m/min, ap = 1.0 mm, f = 0.1 mm/rev, Wet
Workpiece : SCM440 (with 4 Slots)





PG Chipbreaker (Medium-Roughing)
Interruption (Medium-Roughing) 1st Recommendation
Stable Machining and Good Chip Control in a Wide Range of Applications

GS Chipbreaker (Medium-Roughing)
Continuous (Medium-Roughing) 1st Recommendation
Hybrid Land Enables Stable Machining During Light Interruption

PQ Chipbreaker (Finishing-Medium)
Reduces Chip Clogging and Resistance at High Feed Rates

PP Chipbreaker (Finishing)
Improves Chip Clogging and Chip Crunching at High Feed Rates with Small ap

Recommended Cutting Conditions

Vc (m/min)

		Low Carbon Steel Low Carbon Alloy Steel	Medium Carbon Steel Medium Carbon Alloy Steel	High Carbon Alloy Steel
		150 HB or Below	250 HB or Below	300 HB or Below
CA025P	Negative	150 ~ **240** ~ 320		150 ~ **220** ~ 280
	Positive	120 ~ **190** ~ 260		110 ~ **170** ~ 230

Case Studies

Cold Forging Die SKD61

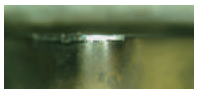
Vc = 230 m/min
ap = 2.0 mm~
f = 0.23 mm/rev
Wet
CNMG120408PG
CA025P

Tool Life

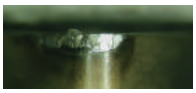
CA025P
PG Chipbreaker **25 pcs/edge**

Competitor B
(Molded Chipbreaker) **15 pcs/edge**

UP x1.6 Tool Life



CA025P



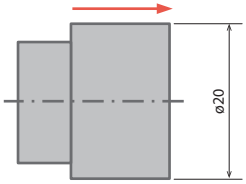
Competitor B

CA025P PG chipbreaker extended tool life by 1.6 times when compared to Competitor B. Good cutting edge provided continuous machining.

(User Evaluation)

Pipe SCM440

Vc = 160 m/min
ap = 1.2 mm
f = 0.2 mm/rev
Wet
DNMG150408PG
CA025P



Tool Life

CA025P
PG Chipbreaker **40 pcs/edge**

Competitor C
(Molded Chipbreaker) **20 pcs/edge**

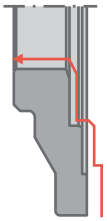
UP x2 Tool Life

CA025P PG chipbreaker maintained doubled the tool life of Competitor C. Less edge build-up and superior surface finish.

(User Evaluation)

Flange S45C

Vc = 250 m/min
ap = 1.0 mm
f = 0.1 ~ 0.35 mm/rev
Wet
WNMG080408PQ
CA025P



Tool Life

CA025P
PQ Chipbreaker **150 pcs/edge**

Competitor D
(Molded Chipbreaker) **100 pcs/edge**

UP x1.5 Tool Life

CA025P

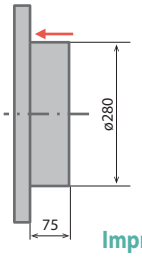
Competitor D

CA025P PQ chipbreaker extended tool life by 1.5 times that of Competitor D. Excellent cutting edge maintained continuous machining.

(User Evaluation)

Flange SCM440 (Normalized)

Vc = 200 m/min
ap = 0.3 mm
f = 0.15 mm/rev
Wet
DNMG150404PP
CA025P



Tool Life

CA025P
PP Chipbreaker **30 pcs/edge**

Competitor E
(Molded Chipbreaker) **30 pcs/edge**

Improved Cutting Edge

CA025P

Competitor E

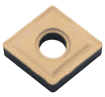
CA025P PP chipbreaker showed less wear on cutting edge after machining 30 pcs and maintained stable machining.

(User Evaluation)

Stock Items (Negative)

Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Wiper Edge	 Finishing	CNMG 120404WF	12.70	4.76	5.16	0.4	●
		120408WF				0.8	●
Wiper Edge	 Finishing	CNMG 120404WP	12.70	4.76	5.16	0.4	●
		120408WP				0.8	●
Wiper Edge	 Finishing-Medium	CNMG 120404WE	12.70	4.76	5.16	0.4	●
		120408WE				0.8	●
		120412WE				1.2	●
Wiper Edge	 Finishing-Medium	CNMG 120404WQ	12.70	4.76	5.16	0.4	●
		120408WQ				0.8	●
		120412WQ				1.2	●
Finishing		CNMG 120402PP	12.70	4.76	5.16	0.2	●
		120404PP				0.4	●
		120408PP				0.8	●
		120412PP				1.2	●
Finishing		CNMG 120402GP	12.70	4.76	5.16	0.2	●
		120404GP				0.4	●
		120408GP				0.8	●
Finishing-Medium		CNMG 120404PQ	12.70	4.76	5.16	0.4	●
		120408PQ				0.8	●
		120412PQ				1.2	●
Finishing-Medium		CNMG 090404HQ	9.525	4.76	3.81	0.4	●
		090408HQ				0.8	●
		CNMG 120404HQ	12.70	4.76	5.16	0.4	●
		120408HQ				0.8	●
		120412HQ				1.2	●
Finishing-Medium / Up Facing		CNMG 120404CQ	12.70	4.76	5.16	0.4	●
		120408CQ				0.8	●
		120412CQ				1.2	●
		CNMG 160608CQ	15.875	6.35	6.35	0.8	●
		160612CQ				1.2	●
Finishing-Medium / Up Facing		CNMG 120408CJ	12.70	4.76	5.16	0.8	●
		120412CJ				1.2	●
		CNMG 160612CJ	15.875	6.35	6.35	1.2	●
		160616CJ				1.6	●
Medium-Roughing (Continuous)		CNMG 090404GS	9.525	4.76	3.81	0.4	●
		090408GS				0.8	●
		CNMG 120404GS	12.70	4.76	5.16	0.4	●
		120408GS				0.8	●
		120412GS				1.2	●

● : Standard Stock

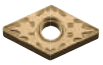
Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Medium-Roughing (Interruption)		CNMG 120404PG	12.70	4.76	5.16	0.4	●
		120408PG				0.8	●
		120412PG				1.2	●
		120416PG				1.6	●
Medium-Roughing		CNMG 120404PS	12.70	4.76	5.16	0.4	●
		120408PS				0.8	●
		120412PS				1.2	●
		120416PS				1.6	●
		CNMG 160612PS	15.875	6.35	6.35	1.2	●
		160616PS				1.6	●
Medium-Roughing / High Feed		CNMG 120408PT	12.70	4.76	5.16	0.8	●
		120412PT				1.2	●
		CNMG 160608PT	15.875	6.35	6.35	0.8	●
		160612PT				1.2	●
		160616PT				1.6	●
Medium-Roughing / High Feed		CNMG 120408GT	12.70	4.76	5.16	0.8	●
		120412GT				1.2	●
Roughing		CNMG 120404	12.70	4.76	5.16	0.4	●
		120408				0.8	●
		120412				1.2	●
		CNMG 160608	15.875	6.35	6.35	0.8	●
		160612				1.2	●
		CNMG 190612	19.05	6.35	7.94	1.2	●
		190616				1.6	●
Roughing		CNMG 120408PH	12.70	4.76	5.16	0.8	●
		120412PH				1.2	●
		120416PH				1.6	●
		CNMG 160608PH	15.875	6.35	6.35	0.8	●
		160612PH				1.2	●
		160616PH				1.6	●
		CNMG 190608PH	19.05	6.35	7.94	0.8	●
		190612PH				1.2	●
		190616PH				1.6	●
		190624PH				2.4	●
Single Sided Roughing / High Feed		CNMM 120408PX	12.70	4.76	5.16	0.8	●
		120412PX				1.2	●
		120416PX				1.6	●
		CNMM 160608PX	15.875	6.35	6.35	0.8	●
		160612PX				1.2	●
		160616PX				1.6	●
		CNMM 190608PX	19.05	6.35	7.94	0.8	●
		190612PX				1.2	●
		190616PX				1.6	●
		190624PX				2.4	●

● : Standard Stock

Stock Items (Negative)

Shape		Description		Dimensions (mm)				CVD Coated Carbide
				I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Low Carbon Steel	 Finishing	CNMG	120404XP	12.70	4.76	5.16	0.4	●
			120408XP				0.8	●
Low Carbon Steel	 Medium	CNMG	120404XQ	12.70	4.76	5.16	0.4	●
			120408XQ				0.8	●
Low Carbon Steel	 Roughing	CNMG	120408XS	12.70	4.76	5.16	0.8	●
Wiper Edge	 Finishing	DNMX	150404WF	12.70	4.76	5.16	0.4	●
			150408WF				0.8	●
			150412WF				1.2	●
		DNMX	150604WF	12.70	6.35	5.16	0.4	●
			150608WF				0.8	●
			150612WF				1.2	●
Finishing		DNMG	150402PP	12.70	4.76	5.16	0.2	●
			150404PP				0.4	●
			150408PP				0.8	●
			150412PP				1.2	●
		DNMG	150602PP	12.70	6.35	5.16	0.2	●
			150604PP				0.4	●
			150608PP				0.8	●
			150612PP				1.2	●
Finishing		DNMG	110404GP	9.525	4.76	3.81	0.4	●
			110408GP				0.8	●
		DNMG	150402GP	12.70	4.76	5.16	0.2	●
			150404GP				0.4	●
			150408GP				0.8	●
Finishing-Medium		DNMG	150404PQ	12.70	4.76	5.16	0.4	●
			150408PQ				0.8	●
			150412PQ				1.2	●
		DNMG	150604PQ	12.70	6.35	5.16	0.4	●
			150608PQ				0.8	●
			150612PQ				1.2	●
Finishing-Medium		DNMG	110402HQ	9.525	4.76	3.81	0.2	●
			110404HQ				0.4	●
		DNMG	150404HQ	12.70	4.76	5.16	0.4	●
			150408HQ				0.8	●
			150412HQ				1.2	●
		DNMG	150604HQ	12.70	6.35	5.16	0.4	●
			150608HQ				0.8	●
			150612HQ				1.2	●

● : Standard Stock

Shape		Description		Dimensions (mm)				CVD Coated Carbide
				I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Finishing-Medium / Up Facing		DNMG	150404CQ	12.70	4.76	5.16	0.4	●
			150408CQ				0.8	●
			150412CQ				1.2	●
		DNMG	150604CQ	12.70	6.35	5.16	0.4	●
			150608CQ				0.8	●
			150612CQ				1.2	●
Finishing-Medium / Up Facing		DNMG	150408CJ	12.70	4.76	5.16	0.8	●
			150412CJ				1.2	●
		DNMG	150608CJ	12.70	6.35	5.16	0.8	●
			150612CJ				1.2	●
Medium-Roughing (Continuous)		DNMG	110404GS	9.525	4.76	3.81	0.4	●
			110408GS				0.8	●
		DNMG	150404GS	12.70	4.76	5.16	0.4	●
			150408GS				0.8	●
			150412GS				1.2	●
		DNMG	150604GS	12.70	6.35	5.16	0.4	●
			150608GS				0.8	●
Medium-Roughing (Interruption)		DNMG	150404PG	12.70	4.76	5.16	0.4	●
			150408PG				0.8	●
			150412PG				1.2	●
			150416PG				1.6	●
		DNMG	150604PG	12.70	6.35	5.16	0.4	●
			150608PG				0.8	●
			150612PG				1.2	●
			150616PG				1.6	●
Medium-Roughing		DNMG	150404PS	12.70	4.76	5.16	0.4	●
			150408PS				0.8	●
			150412PS				1.2	●
		DNMG	150604PS	12.70	6.35	5.16	0.4	●
			150608PS				0.8	●
			150612PS				1.2	●
			150616PS				1.6	●
Medium-Roughing / High Feed		DNMG	150408PT	12.70	4.76	5.16	0.8	●
			150412PT				1.2	●
		DNMG	150608PT	12.70	6.35	5.16	0.8	●
			150612PT				1.2	●
Medium-Roughing / High Feed		DNMG	150408GT	12.70	4.76	5.16	0.8	●
			150412GT				1.2	●
		DNMG	150608GT	12.70	6.35	5.16	0.8	●
			150612GT				1.2	●

● : Standard Stock

Stock Items (Negative)

Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Roughing		DNMG 150404	12.70	4.76	5.16	0.4	●
		150408				0.8	●
		DNMG 150608	12.70	6.35	5.16	0.8	●
		150612				1.2	●
Roughing		DNMG 150408PH	12.70	4.76	5.16	0.8	●
		150412PH				1.2	●
		150416PH				1.6	●
		DNMG 150608PH	12.70	6.35	5.16	0.8	●
		150612PH				1.2	●
		150616PH				1.6	●
Single Sided Roughing / High Feed		DNMM 150408PX	12.70	4.76	5.16	0.8	●
		150412PX				1.2	●
		150416PX				1.6	●
		DNMM 150608PX	12.70	6.35	5.16	0.8	●
		150612PX				1.2	●
		150616PX				1.6	●
Low Carbon Steel	 Finishing	DNMG 150404XP	12.70	4.76	5.16	0.4	●
		150408XP				0.8	●
Low Carbon Steel	 Medium	DNMG 150404XQ	12.70	4.76	5.16	0.4	●
		150408XQ				0.8	●
Low Carbon Steel	 Roughing	DNMG 150408XS	12.70	4.76	5.16	0.8	●
Medium-Roughing		RNMG 090300	9.525	3.18	3.81	—	●
		RNMG 120400	12.70	4.76	5.16	—	●
		RNMG 150600	15.875	6.35	6.35	—	●
Finishing-Medium		SNMG 120404PQ	12.70	4.76	5.16	0.4	●
		120408PQ				0.8	●
		120412PQ				1.2	●
Finishing-Medium		SNMG 120404HQ	12.70	4.76	5.16	0.4	●
		120408HQ				0.8	●
		120412HQ				1.2	●
Medium-Roughing (Interruption)		SNMG 120408PG	12.70	4.76	5.16	0.8	●
		120412PG				1.2	●
		120416PG				1.6	●

● : Standard Stock

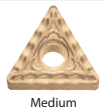
Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Medium-Roughing		SNMG 120408PS	12.70	4.76	5.16	0.8	●
		120412PS				1.2	●
		120416PS				1.6	●
Medium-Roughing / High Feed		SNMG 120408PT	12.70	4.76	5.16	0.8	●
		120412PT				1.2	●
Roughing		SNMG 090304	9.525	3.18	3.81	0.4	●
		090308				0.8	●
		SNMG 120408	12.70	4.76	5.16	0.8	●
		120412				1.2	●
		120416				1.6	●
Roughing		SNMG 120408PH	12.70	4.76	5.16	0.8	●
		120412PH				1.2	●
		120416PH				1.6	●
		SNMG 150612PH	15.875	6.35	6.35	1.2	●
		150616PH				1.6	●
		SNMG 190612PH	19.05	6.35	7.94	1.2	●
		190616PH				1.6	●
Single Sided Roughing / High Feed		SNMM 120408PX	12.70	4.76	5.16	0.8	●
		120412PX				1.2	●
		120416PX				1.6	●
		SNMM 150612PX	15.875	6.35	6.35	1.2	●
		150616PX				1.6	●
		SNMM 190612PX	19.05	6.35	7.94	1.2	●
		190616PX				1.6	●
		190624PX				2.4	●
Low Carbon Steel	 Finishing	SNMG 120408XP	12.70	4.76	5.16	0.8	●
Low Carbon Steel	 Medium	SNMG 120408XQ	12.70	4.76	5.16	0.8	●
Low Carbon Steel	 Roughing	SNMG 120408XS	12.70	4.76	5.16	0.8	●
Wiper Edge	 Finishing	TNMX 160404WF	9.525	4.76	3.81	0.4	●
		160408WF				0.8	●
		160412WF				1.2	●
Finishing		TNMG 160402PP	9.525	4.76	3.81	0.2	●
		160404PP				0.4	●
		160408PP				0.8	●
		160412PP				1.2	●

● : Standard Stock

Stock Items (Negative)

Shape		Description		Dimensions (mm)				CVD Coated Carbide
				I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Finishing		TNMG	160402GP	9.525	4.76	3.81	0.2	●
			160404GP				0.4	●
			160408GP				0.8	●
Finishing-Medium		TNMG	160404PQ	9.525	4.76	3.81	0.4	●
			160408PQ				0.8	●
			160412PQ				1.2	●
Finishing-Medium		TNMG	110404HQ	6.35	4.76	2.26	0.4	●
			110408HQ				0.8	●
		TNMG	160404HQ	9.525	4.76	3.81	0.4	●
			160408HQ				0.8	●
			160412HQ				1.2	●
Finishing-Medium / Up Facing		TNMG	160404CQ	9.525	4.76	3.81	0.4	●
			160408CQ				0.8	●
			160412CQ				1.2	●
		TNMG	220408CQ	12.70	4.76	5.16	0.8	●
			220412CQ				1.2	●
Medium-Roughing (Continuous)		TNMG	110404GS	6.35	4.76	2.26	0.4	●
			110408GS				0.8	●
		TNMG	160404GS	9.525	4.76	3.81	0.4	●
			160408GS				0.8	●
Medium-Roughing (Interruption)		TNMG	160404PG	9.525	4.76	3.81	0.4	●
			160408PG				0.8	●
			160412PG				1.2	●
Medium-Roughing		TNMG	160404PS	9.525	4.76	3.81	0.4	●
			160408PS				0.8	●
			160412PS				1.2	●
		TNMG	220404PS	12.70	4.76	5.16	0.4	●
			220408PS				0.8	●
			220412PS				1.2	●
			220416PS				1.6	●
Medium-Roughing / High Feed		TNMG	160408PT	9.525	4.76	3.81	0.8	●
			160412PT				1.2	●
Medium-Roughing / High Feed		TNMG	160408GT	9.525	4.76	3.81	0.8	●
			160412GT				1.2	●
Roughing		TNMG	160404	9.525	4.76	3.81	0.4	●
			160408				0.8	●
			160412				1.2	●
		TNMG	220408	12.70	4.76	5.16	0.8	●
			220412				1.2	●

● : Standard Stock

Shape Handed Insert shows Right-hand		Description		Dimensions (mm)				CVD Coated Carbide
				I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Roughing		TNMG	160408PH	9.525	4.76	3.81	0.8	●
			160412PH				1.2	●
		TNMG	220408PH	12.70	4.76	5.16	0.8	●
			220412PH				1.2	●
			220416PH				1.6	●
Single Sided Roughing / High Feed		TNMM	160408PX	9.525	4.76	3.81	0.8	●
			160412PX				1.2	●
		TNMM	220408PX	12.70	4.76	5.16	0.8	●
			220412PX				1.2	●
			220416PX				1.6	●
Low Carbon Steel	 Finishing	TNMG	160404XP	9.525	4.76	3.81	0.4	●
			160408XP				0.8	●
Low Carbon Steel	 Medium	TNMG	160404XQ	9.525	4.76	3.81	0.4	●
			160408XQ				0.8	●
Low Carbon Steel	 Roughing	TNMG	160408XS	9.525	4.76	3.81	0.8	●
Medium-Roughing		TNMG	160404 R/L-ST	9.525	4.76	3.81	0.4	●
			160408 R/L-ST				0.8	●
Finishing		VNMG	160402PP	9.525	4.76	3.81	0.2	●
			160404PP				0.4	●
			160408PP				0.8	●
			160412PP				1.2	●
Finishing		VNMG	160402GP	9.525	4.76	3.81	0.2	●
			160404GP				0.4	●
			160408GP				0.8	●
Finishing-Medium		VNMG	160404 R/L-VC	9.525	4.76	3.81	0.4	●
			160408 R/L-VC				0.8	●
			160412 R/L-VC				1.2	●
Finishing-Medium		VNMG	160404VF	9.525	4.76	3.81	0.4	●
			160408VF				0.8	●
			160412VF				1.2	●
Finishing-Medium		VNMG	160404PQ	9.525	4.76	3.81	0.4	●
			160408PQ				0.8	●
			160412PQ				1.2	●
Finishing-Medium		VNMG	160404HQ	9.525	4.76	3.81	0.4	●
			160408HQ				0.8	●
			160412HQ				1.2	●
Roughing		VNMG	160404	9.525	4.76	3.81	0.4	●
			160408				0.8	●

● : Standard Stock

Stock Items (Negative)

Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Wiper Edge	 Finishing	WNMG 080404WF	12.70	4.76	5.16	0.4	●
		080408WF				0.8	●
Wiper Edge	 Finishing	WNMG 080404WP	12.70	4.76	5.16	0.4	●
		080408WP				0.8	●
Wiper Edge	 Finishing-Medium	WNMG 080404WE	12.70	4.76	5.16	0.4	●
		080408WE				0.8	●
		080412WE				1.2	●
Wiper Edge	 Finishing-Medium	WNMG 080404WQ	12.70	4.76	5.16	0.4	●
		080408WQ				0.8	●
		080412WQ				1.2	●
Finishing		WNMG 080402PP	12.70	4.76	5.16	0.2	●
		080404PP				0.4	●
		080408PP				0.8	●
		080412PP				1.2	●
Finishing-Medium		WNMG 080404PQ	12.70	4.76	5.16	0.4	●
		080408PQ				0.8	●
		080412PQ				1.2	●
Finishing-Medium		WNMG 06T304HQ	9.525	3.97	3.81	0.4	●
		06T308HQ				0.8	●
		WNMG 060404HQ	9.525	4.76	3.81	0.4	●
		060408HQ				0.8	●
		WNMG 080404HQ	12.70	4.76	5.16	0.4	●
		080408HQ				0.8	●
		080412HQ				1.2	●
Finishing-Medium / Up Facing		WNMG 080404CQ	12.70	4.76	5.16	0.4	●
		080408CQ				0.8	●
		080412CQ				1.2	●
Finishing-Medium / Up Facing		WNMG 080408CJ	12.70	4.76	5.16	0.8	●
		080412CJ				1.2	●
Medium-Roughing (Continuous)		WNMG 060404GS	9.525	4.76	3.81	0.4	●
		060408GS				0.8	●
		WNMG 080404GS	12.70	4.76	5.16	0.4	●
		080408GS				0.8	●
		080412GS				1.2	●
Medium-Roughing (Interruption)		WNMG 080404PG	12.70	4.76	5.16	0.4	●
		080408PG				0.8	●
		080412PG				1.2	●
		080416PG				1.6	●

● : Standard Stock

Shape		Description	Dimensions (mm)				CVD Coated Carbide
			I.C.	Thickness	Hole	Corner-R (RE)	CA025P
Medium-Roughing		WNMG 080404PS	12.70	4.76	5.16	0.4	●
		080408PS				0.8	●
		080412PS				1.2	●
		080416PS				1.6	●
Medium-Roughing / High Feed		WNMG 080408PT	12.70	4.76	5.16	0.8	●
		080412PT				1.2	●
Medium-Roughing / High Feed		WNMG 080408GT	12.70	4.76	5.16	0.8	●
		080412GT				1.2	●
Roughing		WNMG 080404	12.70	4.76	5.16	0.4	●
		080408				0.8	●
		080412				1.2	●
Roughing		WNMG 080408PH	12.70	4.76	5.16	0.8	●
		080412PH				1.2	●
Low Carbon Steel	 Finishing	WNMG 080404XP	12.70	4.76	5.16	0.4	●
		080408XP				0.8	●
Low Carbon Steel	 Medium	WNMG 080404XQ	12.70	4.76	5.16	0.4	●
		080408XQ				0.8	●
Low Carbon Steel	 Roughing	WNMG 080408XS	12.70	4.76	5.16	0.8	●

● : Standard Stock

Stock Items (Positive) NEW

Shape		Description	Dimensions (mm) I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	CVD Coated Carbide CA025P
Wiper Edge	 Finishing	CCMT 060202WP	6.35	2.38	2.8	0.2	7°	●
		CCMT 060204WP				0.4		●
		CCMT 060208WP				0.8		●
		CCMT 09T302WP	9.525	3.97	4.4	0.2	7°	●
		CCMT 09T304WP				0.4		●
		CCMT 09T308WP				0.8		●
Finishing		CCMT 060202PP	6.35	2.38	2.8	0.2	7°	●
		CCMT 060204PP				0.4		●
		CCMT 09T302PP	9.525	3.97	4.4	0.2	7°	●
		CCMT 09T304PP				0.4		●
		CCMT 09T308PP				0.8		●
Finishing-Medium		CCMT 060202GK	6.35	2.38	2.8	0.2	7°	●
		CCMT 060204GK				0.4		●
		CCMT 09T302GK	9.525	3.97	4.4	0.2	7°	●
		CCMT 09T304GK				0.4		●
		CCMT 120404GK	12.70	4.76	5.5	0.4	7°	●
		CCMT 120408GK				0.8		●
		CCMT 120412GK				1.2		●
Finishing-Medium		CCMT 060202HQ	6.35	2.38	2.8	0.2	7°	●
		CCMT 060204HQ				0.4		●
		CCMT 09T302HQ	9.525	3.97	4.4	0.2	7°	●
		CCMT 09T304HQ				0.4		●
		CCMT 09T308HQ				0.8		●
Medium		CCMT 09T308	9.525	3.97	4.4	0.8	7°	●
Finishing		CPMT 080202PP	7.94	2.38	3.3	0.2	11°	●
		CPMT 080204PP				0.4		●
		CPMT 090302PP	9.525	3.18	4.4	0.2	11°	●
		CPMT 090304PP				0.4		●
		CPMT 090308PP				0.8		●
Finishing		CPMT 080204GP	7.94	2.38	3.3	0.4	11°	●
		CPMT 090304GP	9.525	3.18	4.4	0.4	11°	●
		CPMT 090308GP				0.8		●
Finishing-Medium		CPMH 080204HQ	7.94	2.38	3.5	0.4	11°	●
		CPMH 080208HQ				0.8		●
		CPMH 090304HQ	9.525	3.18	4.5	0.4	11°	●
		CPMH 090308HQ				0.8		●
Medium		CPMH 080204	7.94	2.38	3.5	0.4	11°	●
		CPMH 080208				0.8		●
		CPMH 090304	9.525	3.18	4.5	0.4	11°	●
		CPMH 090308				0.8		●
Low Carbon Steel	 Finishing	CPMT 080204XP	7.94	2.38	3.3	0.4	11°	●
		CPMT 090304XP	9.525	3.18	4.4	0.4	11°	●
		CPMT 090308XP				0.8		●
Low Carbon Steel	 Finishing-Medium	CPMT 090304XQ	9.525	3.18	4.4	0.4	11°	●
		090308XQ				0.8		●

● : Standard Stock

Shape		Description	Dimensions (mm) I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	CVD Coated Carbide CA025P
Wiper Edge	 Finishing	DCMX 070202WP	6.35	2.38	2.8	0.2	7°	●
		DCMX 070204WP				0.4		●
		DCMX 070208WP				0.8		●
		DCMX 11T302WP	9.525	3.97	4.4	0.2	7°	●
		DCMX 11T304WP				0.4		●
		DCMX 11T308WP				0.8		●
Finishing		DCMT 070202PP	6.35	2.38	2.8	0.2	7°	●
		DCMT 070204PP				0.4		●
		DCMT 11T302PP	9.525	3.97	4.4	0.2	7°	●
		DCMT 11T304PP				0.4		●
		DCMT 11T308PP				0.8		●
Finishing		DCMT 070202GP	6.35	2.38	2.8	0.2	7°	●
		DCMT 070204GP				0.4		●
		DCMT 11T304GP	9.525	3.97	4.4	0.4	7°	●
		DCMT 11T308GP				0.8		●
Finishing-Medium		DCMT 070202GK	6.35	2.38	2.8	0.2	7°	●
		DCMT 070204GK				0.4		●
		DCMT 070208GK				0.8		●
		DCMT 11T302GK	9.525	3.97	4.4	0.2	7°	●
		DCMT 11T304GK				0.4		●
		DCMT 11T308GK				0.8		●
Finishing-Medium		DCMT 070202HQ	6.35	2.38	2.8	0.2	7°	●
		DCMT 070204HQ				0.4		●
		DCMT 070208HQ				0.8		●
		DCMT 11T302HQ	9.525	3.97	4.4	0.2	7°	●
		DCMT 11T304HQ				0.4		●
		DCMT 11T308HQ				0.8		●
Low Carbon Steel	 Finishing	DCMT 070204XP	6.35	2.38	2.8	0.4	7°	●
		DCMT 11T302XP	9.525	3.97	4.4	0.2	7°	●
		DCMT 11T304XP				0.4		●
		DCMT 11T308XP				0.8		●
Low Carbon Steel	 Finishing-Medium	DCMT 11T304XQ	9.525	3.97	4.4	0.4	7°	●
		11T308XQ				0.8		●
Medium		RCMX 1003M0	10.0	3.18	3.6	—	7°	●
		RCMX 1204M0	12.0	4.76	4.2	—		●
Finishing-Medium		SCMT 09T304HQ	9.525	3.97	4.4	0.4	7°	●
		09T308HQ				0.8		●
Medium		SPMR 090304	9.525	3.18	—	0.4	11°	●
		090308				0.8		●
		SPMR 120304	12.7	3.18	—	0.4	11°	●
		120308				0.8		●
Finishing		TBMT 060102DP	3.97	1.59	2.3	0.2	5°	●
		060104DP				0.4		●

● : Standard Stock

Stock Items (Positive) NEW

Shape		Description	Dimensions (mm) I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	CVD Coated Carbide CA025P
Wiper Edge	 Finishing	TCMX 090204WP	5.56	2.38	2.5	0.4	7°	●
		TCMX 110204WP	6.35	2.38	2.8	0.4	7°	●
Finishing-Medium		TCMT 110204HQ	6.35	2.38	2.8	0.4	7°	●
		110208HQ				0.8		●
Wiper Edge	 Finishing	TPMX 090202WP	5.56	2.38	2.8	0.2	11°	●
		090204WP				0.4		●
		090208WP				0.8		●
		TPMX 110302WP	6.35	3.18	3.3	0.2	11°	●
		110304WP				0.4		●
		110308WP				0.8		●
Finishing		TPMT 090202PP	5.56	2.38	2.8	0.2	11°	●
		090204PP				0.4		●
		TPMT 110302PP	6.35	3.18	3.3	0.2	11°	●
		110304PP				0.4		●
		110308PP				0.8		●
Finishing		TPMT 090204GP	5.56	2.38	2.8	0.4	11°	●
		TPMT 110304GP	6.35	3.18	3.3	0.4	11°	●
		110308GP				0.8		●
		TPMT 160304GP	9.525	3.18	4.4	0.4	11°	●
Finishing-Medium		TPMT 090202HQ	5.56	2.38	2.8	0.2	11°	●
		090204HQ				0.4		●
		TPMT 110302HQ	6.35	3.18	3.3	0.2	11°	●
		110304HQ				0.4		●
		110308HQ				0.8		●
		TPMT 160304HQ	9.525	3.18	4.4	0.4	11°	●
		160308HQ				0.8		●
Low Carbon Steel	 Finishing	TPMT 090204XP	5.56	2.38	2.8	0.4	11°	●
		TPMT 110304XP	6.35	3.18	3.3	0.4	11°	●
		110308XP				0.8		●
		TPMT 160304XP	9.525	3.18	4.4	0.4	11°	●
		160308XP				0.8		●
Low Carbon Steel	 Finishing-Medium	TPMT 110304XQ	6.35	3.18	3.3	0.4	11°	●
		110308XQ				0.8		●
		TPMT 160304XQ	9.525	3.18	4.4	0.4	11°	●
		160308XQ				0.8		●
Finishing		TPMR 160304GP	9.525	3.18	–	0.4	11°	●
Finishing-Medium		TPMR 110304HQ	6.35	3.18	–	0.4	11°	●
		110308HQ				0.8		●
		TPMR 160304HQ	9.525	3.18	–	0.4	11°	●
		160308HQ				0.8		●
Medium		TPMR 110304	6.35	3.18	–	0.4	11°	●
		110308				0.8		●
		TPMR 160304	9.525	3.18	–	0.4	11°	●
		160308				0.8		●

● : Standard Stock

Shape Handed Insert shows Left-hand		Description	Dimensions (mm) I.C.	Thickness	Hole	Corner-R (RE)	Relief Angel	CVD Coated Carbide CA025P
Finishing		VBMT 110302PP	6.35	3.18	2.8	0.2	5°	●
		110304PP				0.4		●
		110308PP				0.8		●
		VBMT 160404PP	9.525	4.76	4.4	0.4	5°	●
		160408PP				0.8		●
		160412PP				1.2		●
Finishing		VBMT 110304GP	6.35	3.18	2.8	0.4	5°	●
		VBMT 160404GP	9.525	4.76	4.4	0.4	5°	●
		160408GP				0.8		●
Finishing		VBMT 110302VF	6.35	3.18	2.8	0.2	5°	●
		110304VF				0.4		●
		110308VF				0.8		●
		VBMT 160402VF	9.525	4.76	4.4	0.2	5°	●
		160404VF				0.4		●
		160408VF				0.8		●
		160412VF				1.2		●
Finishing-Medium		VBMT 110304HQ	6.35	3.18	2.8	0.4	5°	●
		110308HQ				0.8		●
		VBMT 160404HQ	9.525	4.76	4.4	0.4	5°	●
		160408HQ				0.8		●
		160412HQ				1.2		●
Finishing		VCMT 080202PP	4.76	2.38	2.3	0.2	7°	●
		080204PP				0.4		●
		VCMT 160404PP	9.525	4.76	4.4	0.4	7°	●
		160408PP				0.8		●
Finishing		VCMT 080202VF	4.76	2.38	2.3	0.2	7°	●
		080204VF				0.4		●
Finishing-Medium		VCMT 080202HQ	4.76	2.38	2.3	0.2	7°	●
		080204HQ				0.4		●
Finishing		WBMT 060102L-DP	3.97	1.59	2.3	0.2	5°	L
		060104L-DP				0.4		L
		WBMT 080202L-DP	4.76	2.38	2.3	0.2	5°	L
		080204L-DP				0.4		L
Finishing		WPMT 110204GP	6.35	2.38	2.8	0.4	11°	●
		WPMT 160304GP	9.525	3.18	4.4	0.4	11°	●
Finishing-Medium		WPMT 110202HQ	6.35	2.38	2.8	0.2	11°	●
		110204HQ				0.4		●
		WPMT 160304HQ	9.525	3.18	4.4	0.4	11°	●
		160308HQ				0.8		●

● : Standard Stock
L : L-hand Only

ADVANCING PRODUCTIVITY

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