TurnLine

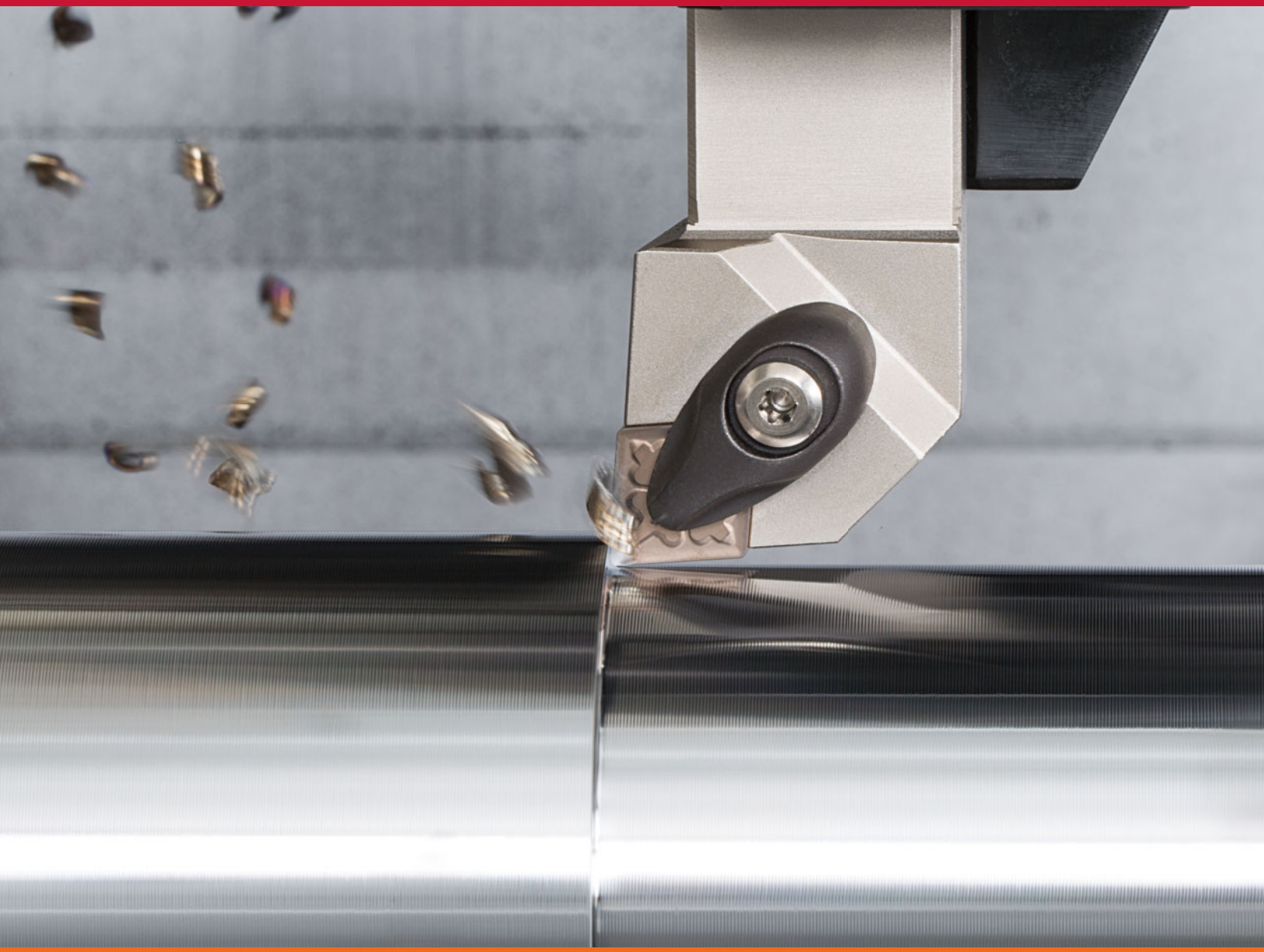
T9200 SERIES

Member IMC Group Tungaloy

www.tungaloy.com/us

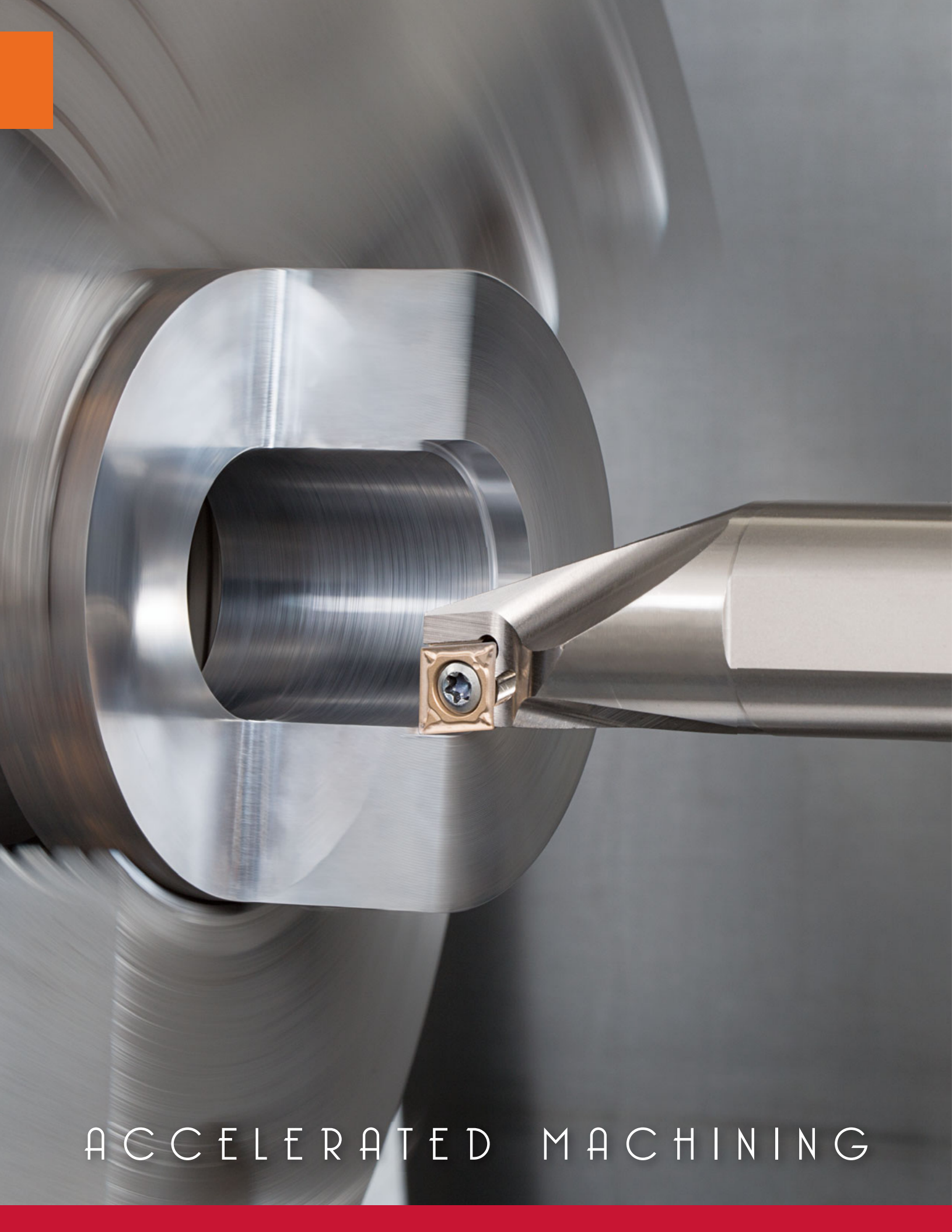
Tungaloy Report No. 513-US

T9200 series - A New Generation of CVD Grades for Steel Turning



INDUSTRY 4.0

FEED the SPEED!


ACCELERATED MACHINING

TurnLine

T9200 SERIES

TUNGALOY

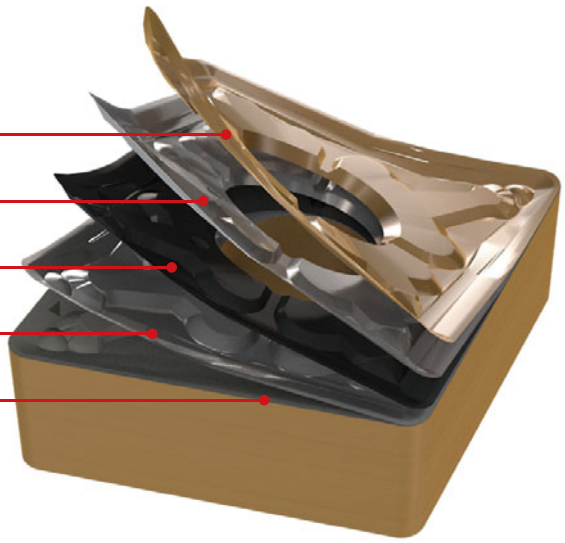
New generation of CVD grades. A complete series for steel turning with outstanding performance for accelerated machining.

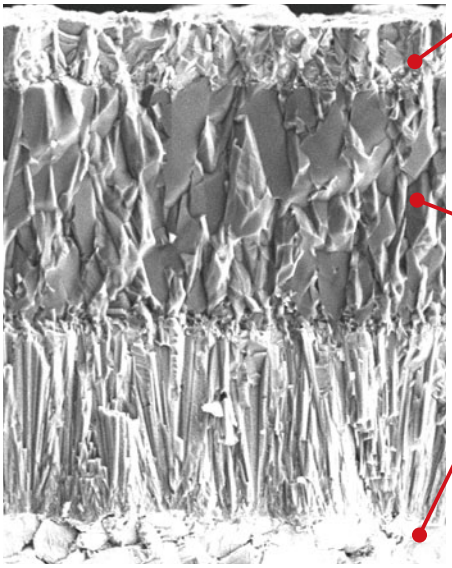
T9200 SERIES
TUNGALOY

The T9200 series now offers T9205 & T9235 and complements the range of new Tungaloy grades to further improve your machining efficiency

PREMIUMTEC
TUNGALOY

With a new surface treatment technology the T9200 series is even harder to break





Hard outer layer
A newly developed hard coating layer, with a high resistance to flank wear.

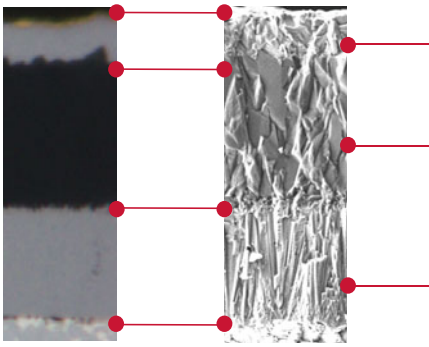
Thick Al_2O_3 layer with excellent resistance to high heat and crater wear, especially effective for high-speed machining.

New cemented carbide substrate
Exclusively designed for T9200 series drastically reduces defects in alloys, which greatly improves fracture resistance.

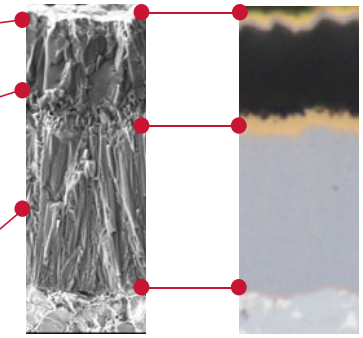
Excellent Crater Wear Resistance

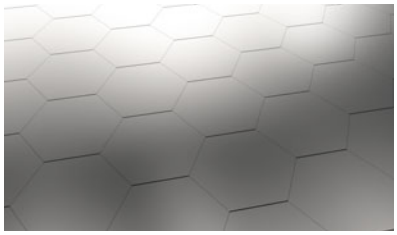
Al_2O_3 coating with strengthened wear resistance

T9200 SERIES

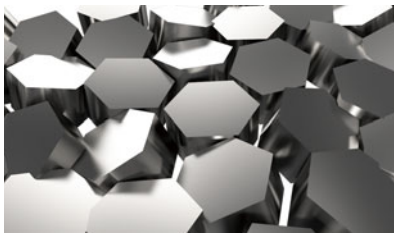


Existing





Highly homogeneous structure of Al_2O_3



Surface image of Al_2O_3

Excellent Flank Wear Resistance

T9200 series Provided Oustanding Resistance to Flank Wear.

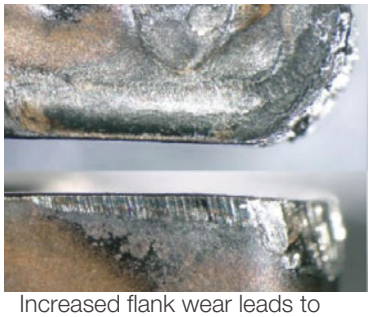
T9200 SERIES

Long tool life and stable tool life

Extended tool life
High speed and high feed
Stable machining

Reduced machine downtime
Cost reduction
High productivity

Existing



Increased flank wear leads to small chipping and welding

Fracture

PREMIUMTEC
TUNGALOY

The new surface coating treatment provides increased fracture resistance

PremiumTec ensures machining stability by preventing microcracks from propagating into the coating layer causing insert fracture.

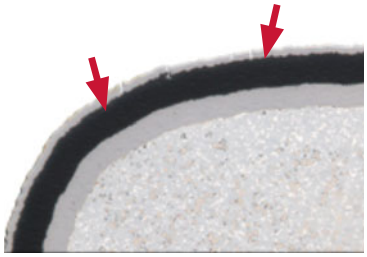
Advantage - Longer tool life

PremiumTec post-surface treatment technology improves tool life

T9200 SERIES

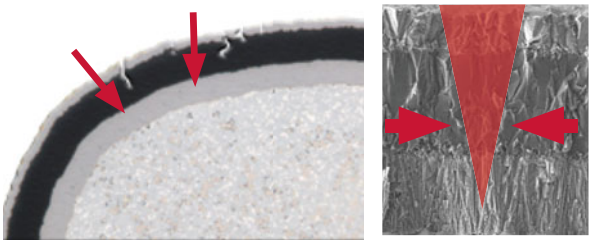
Suppress crack generation and progression

Insert cross section

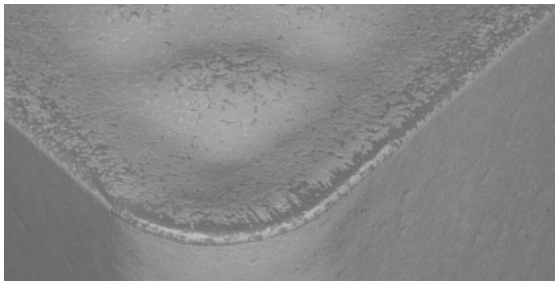


PREMIUMTEC
TUNGALOY

Suppress crack propagation



Still using



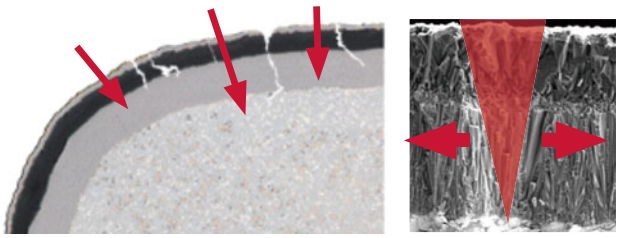
Results: stable machining!

Vs.

Existing

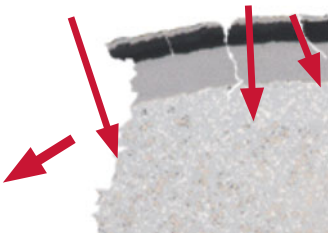
Crack occurs in coating files. Crack proceeds

Insert cross section

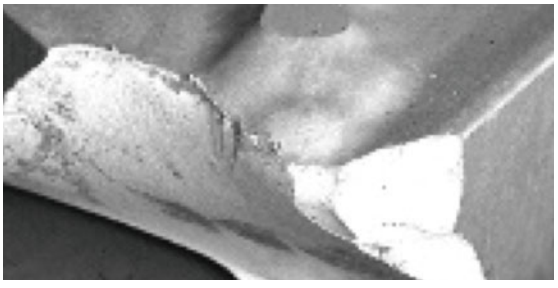


The crack gradually spreads

Fracture



Fracture



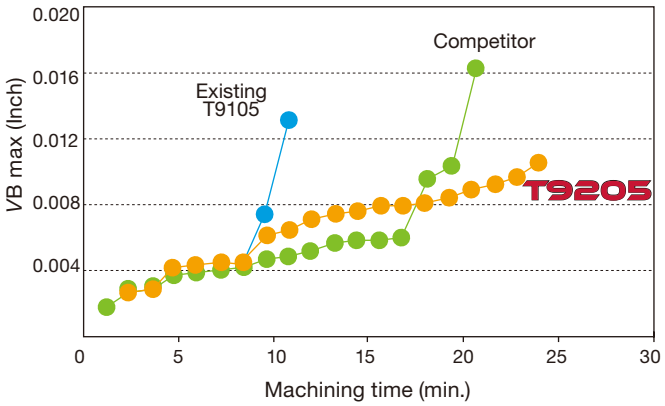
New

T9205

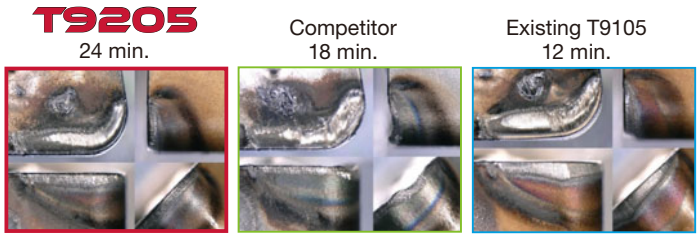
CUTTING PERFORMANCE

P 1045 (245HB)

T9205 provides longer tool life than competitors' grades thanks with due to its resistance to wear

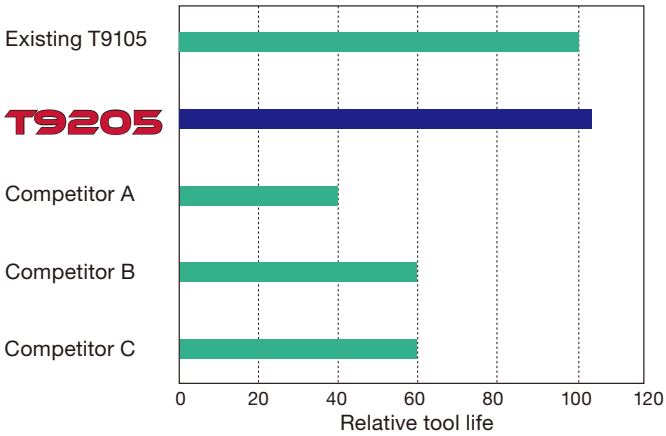


Inserts : CNMG 432 ...
Cutting speed : *Vc* = 984 sfm
Feed : *f* = 0.010 ipr
Depth of cut : *ap* = 0.079"
Applications : Continuous cutting
Coolant : Wet



P 1045

T9205 provides higher fracture resistance than competitors' grades



Inserts : CNMG 432 ...
Cutting speed : *Vc* = 492 sfm
Feed : *f* = 0.006 ipr
Depth of cut : *ap* = 0.079"
Applications : Interrupted cutting
Coolant : Wet

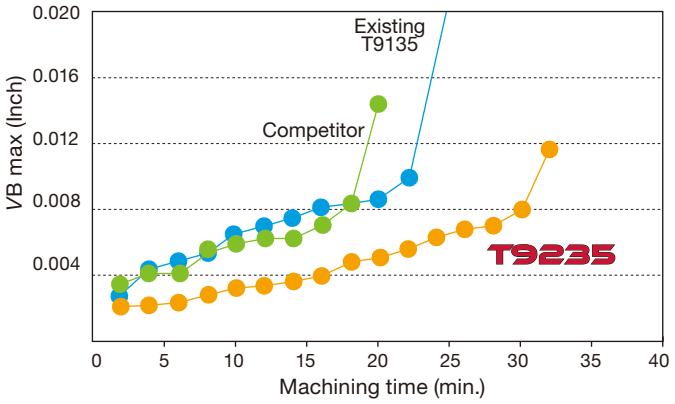
New

T9235

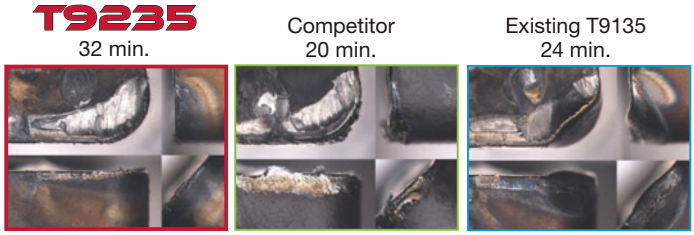
CUTTING PERFORMANCE

P 1045 (245HB)

T9235 provided longer tool life with stability over competitors' grades due to exceptional wear resistance

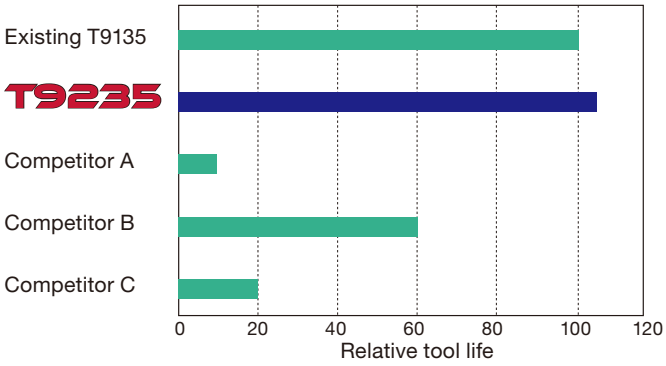


Inserts	: CNMG 432 ...
Cutting speed	: *Vc* = 820 sfm
Feed	: *f* = 0.012 ipr
Depth of cut	: *ap* = 0.079"
Applications	: Continuous cutting
Coolant	: Wet



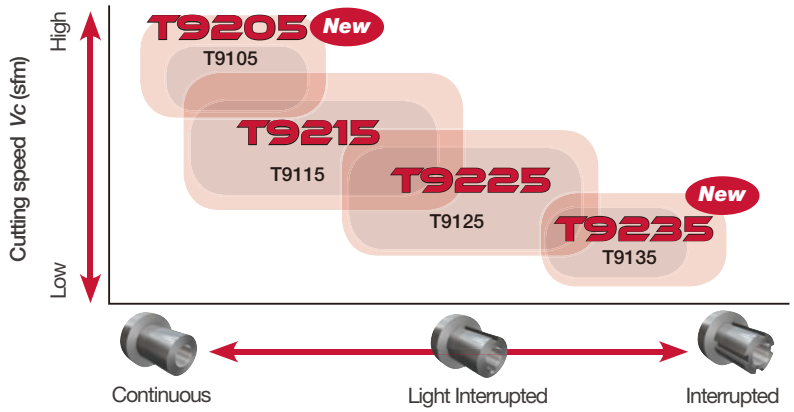
P S45C / C45

T9235 exhibits better fracture resistance over competitors' grades



Inserts	: CNMG 432 ...
Cutting speed	: *Vc* = 525 sfm
Feed	: *f* = 0.008 ipr
Depth of cut	: *ap* = 0.098"
Applications	: Interrupted cutting
Coolant	: Wet

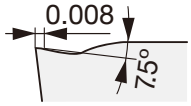
APPLICATION AREA



Application	Grade	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main Composition	Thickness (μm)
P	T9205	14.2	91.5	2.4	Ti compound + Al_2O_3	18
	T9215	14.0	90.5	2.6	Ti compound + Al_2O_3	18
	T9225	13.8	89.8	2.7	Ti compound + Al_2O_3	18
	T9235	13.6	89.0	2.7	Ti compound + Al_2O_3	18

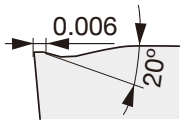
New chipbreaker geometries for steel turning

New TSF



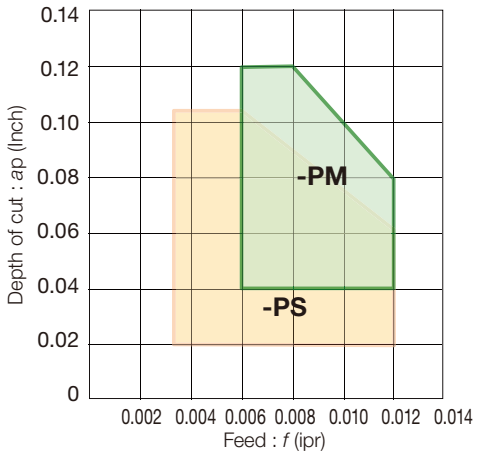
Optimal chipbreaker geometry ensures smooth chip control in a high feed range

New TM

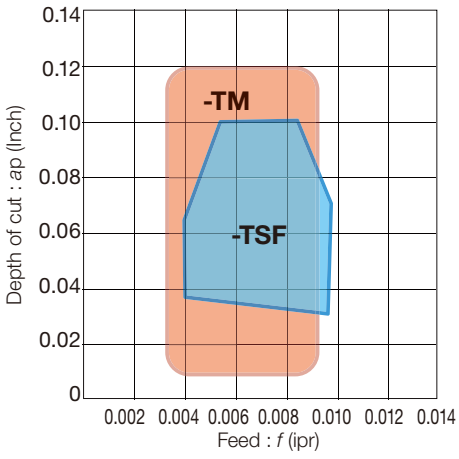


Optimal cutting edge and chipbreaker geometry provides effective chip evacuation at greater depths of cut

First Choice Chipbreakers



New chipbreakers (complementary)



SELECTION GUIDE NEGATIVE TYPE

- For finishing (*ap* = 0.012" - 0.059")

The 1st recommendation

High feed		T9215 FW
Crater wear	New	T9205 TSF
Crater wear		T9215 AS
Breakage	New	T9225 T9235 TSF

- For finish to medium cutting (*ap* = 0.039" - 0.157")

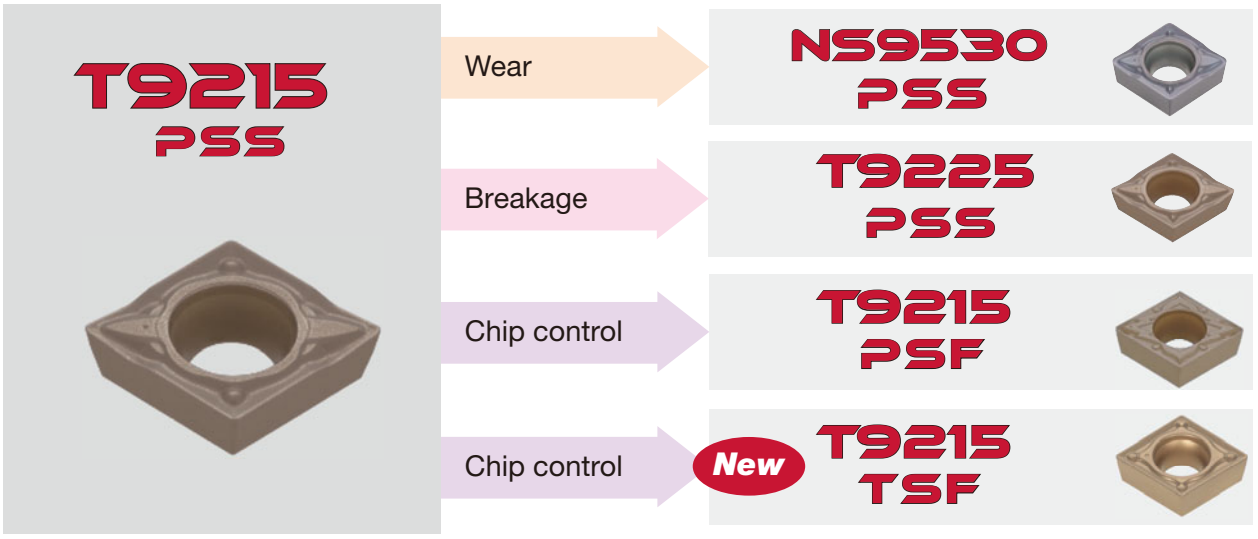
The 1st recommendation

High feed		T9215 SW
Crater wear	New	T9205 TM
Crater wear		T9215 AM
Breakage	New	T9225 T9235 TM
Chip control		T9215 ZM

POSITIVE TYPE

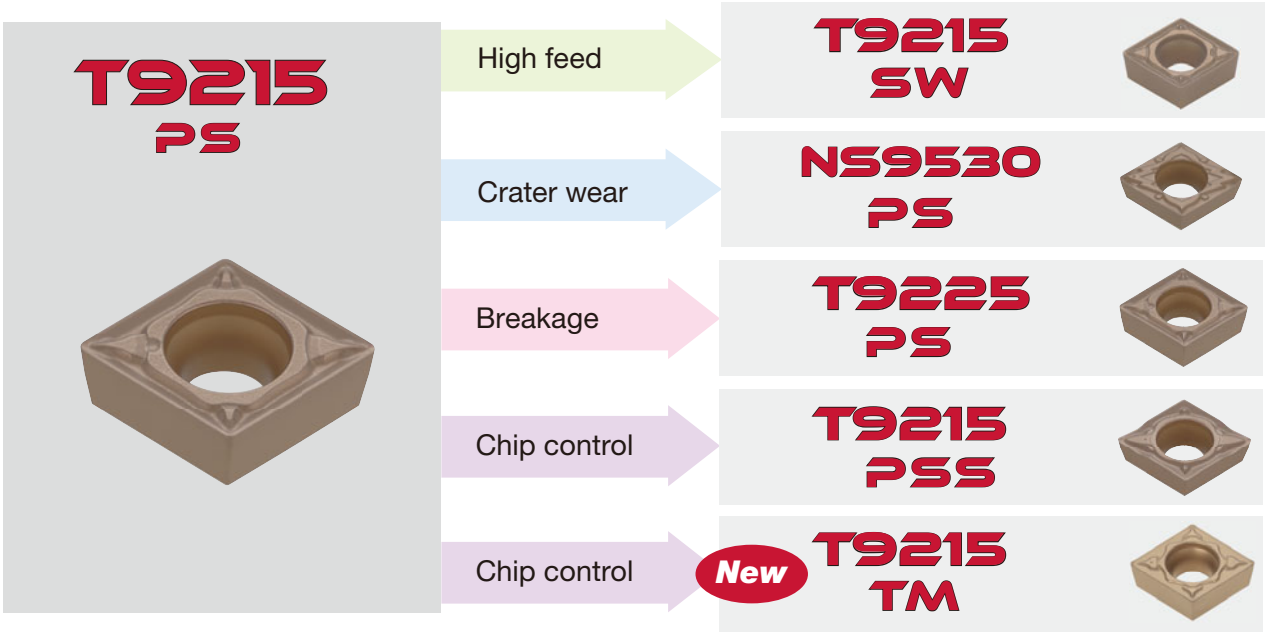
- For finishing (*ap* = 0.004" - 0.020")

The 1st recommendation



- For finishing to medium cutting (*ap* = 0.020" - 0.098")

The 1st recommendation



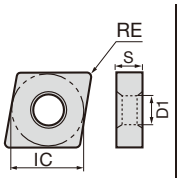
TurnLine - Insert NEGATIVE TYPE

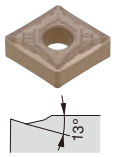
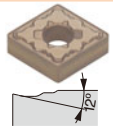
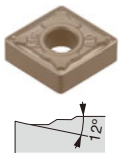
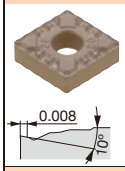
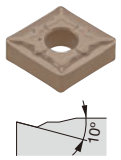
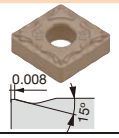
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣										
M	Stainless		●◐																
K	Cast iron		●◐			●◐	●◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	CNMG 331E TSF	CNMG090404E-TSF		●	●			▲	▲		0.016	0.375	0.188	0.150
		CNMG 332E TSF	CNMG090408E-TSF		●	●			▲	▲		0.031	0.375	0.188	0.150
		CNMG 431 TSF	CNMG120404-TSF	●	●	●		▲	▲	▲		0.016	0.500	0.188	0.203
		CNMG 432 TSF	CNMG120408-TSF	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 TSF	CNMG120412-TSF		●	●			▲	▲		0.047	0.500	0.188	0.203
Finishing (Wiper)	FW	CNMG 331E FW	CNMG090404E-FW	●	●	●		▲	▲	▲		0.016	0.375	0.188	0.150
		CNMG 332E FW	CNMG090408E-FW	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
		CNMG 431 FW	CNMG120404-FW		●				▲			0.016	0.500	0.188	0.203
		CNMG 432 FW	CNMG120408-FW	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
	AFW	CNMG 431 AFW	CNMG120404-AFW		●	●			▲	▲		0.016	0.500	0.188	0.203
		CNMG 432 AFW	CNMG120408-AFW	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		*Wiper insert													
Finishing	ZF	CNMG 331E ZF	CNMG090404E-ZF		●	●			▲	▲		0.016	0.375	0.188	0.150
		CNMG 431 ZF	CNMG120404-ZF		●	●			▲	▲		0.016	0.500	0.188	0.203
		CNMG 432 ZF	CNMG120408-ZF		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
	TS	CNMG 431 TS	CNMG120404-TS		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		CNMG 432 TS	CNMG120408-TS	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 TS	CNMG120412-TS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
	NS	CNMG 432 NS	CNMG120408-NS		●	●			▲	▲		0.031	0.500	0.188	0.203
															

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

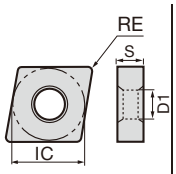
TurnLine - Insert NEGATIVE TYPE

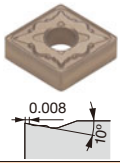
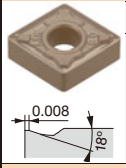
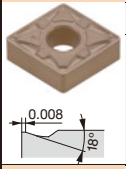
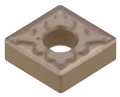
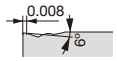
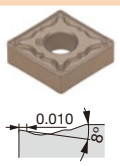
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	● ●ᑕ ᑕ✣ ✣ ● ●ᑕ ᑕ✣ ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting (Wiper)	**SW**	**CNMG 332E SW**	**CNMG090408E-SW**	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
		**CNMG 333E SW**	**CNMG090412E-SW**	●	●	●		▲	▲	▲		0.047	0.375	0.188	0.150
		CNMG 432 SW	**CNMG120408-SW**	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
		CNMG 433 SW	**CNMG120412-SW**	●	●	●		▲	▲	▲		0.047	0.500	0.188	0.203
		*Wiper insert													
	ASW	**CNMG 432 ASW**	**CNMG120408-ASW**	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
		**CNMG 433 ASW**	**CNMG120412-ASW**	●	●	●		▲	▲	▲		0.047	0.500	0.188	0.203
High feed, small depth of cut	**AS**	**CNMG 431 AS**	**CNMG120404-AS**	●	●	●		▲	▲	▲		0.016	0.500	0.188	0.203
		**CNMG 432 AS**	**CNMG120408-AS**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 AS	**CNMG120412-AS**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
Medium cutting	**TM**	**CNMG 321 TM**	**CNMG090304-TM**		●	●			▲	▲		0.016	0.375	0.125	0.150
		CNMG 322 TM	**CNMG090308-TM**		●	●	●		▲	▲	▲	0.031	0.375	0.125	0.150
		**CNMG 331E TM**	**CNMG090404E-TM**		●	●			▲	▲		0.016	0.375	0.188	0.150
		CNMG 332E TM	**CNMG090408E-TM**		●	●			▲	▲		0.031	0.375	0.188	0.150
		CNMG 333E TM	**CNMG090412E-TM**		●	●			▲	▲		0.047	0.375	0.188	0.150
		CNMG 431 TM	**CNMG120404-TM**	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		**CNMG 432 TM**	**CNMG120408-TM**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 TM	**CNMG120412-TM**	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		CNMG 434 TM	**CNMG120416-TM**		●	●	●		▲	▲	▲	0.063	0.500	0.188	0.203
		CNMG 543 TM	**CNMG160612-TM**	●	●	●	●	▲	▲	▲	▲	0.047	0.625	0.250	0.250
		CNMG 642 TM	**CNMG190608-TM**	●	●	●	●	▲	▲	▲	▲	0.031	0.750	0.250	0.312
		CNMG 643 TM	**CNMG190612-TM**	●	●	●	●	▲	▲	▲	▲	0.047	0.750	0.250	0.312
Finishing to medium	**AM**	**CNMG 432 AM**	**CNMG120408-AM**		●	●			▲	▲		0.031	0.500	0.188	0.203
		**CNMG 433 AM**	**CNMG120412-AM**		●	●			▲	▲		0.047	0.500	0.188	0.203
		CNMG 434 AM	**CNMG120416-AM**		●	●			▲	▲		0.063	0.500	0.188	0.203

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

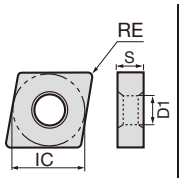
TurnLine - Insert NEGATIVE TYPE

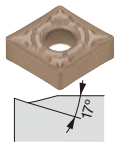
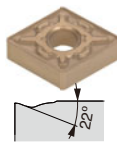
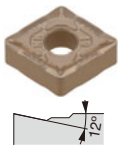
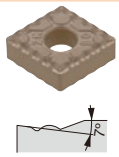
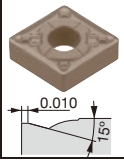
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣														
M	Stainless		●◐																				
K	Cast iron		●◐			●◐	●◐																
N	Non-ferrous																						
S	Superalloys																						
H	Hard materials																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finish to Medium cutting	**TQ**	**CNMG 431 TQ**	**CNMG120404-TQ**		●	●						0.016	0.500	0.188	0.203
		**CNMG 432 TQ**	**CNMG120408-TQ**		●	●						0.031	0.500	0.188	0.203
Medium cutting	**TA**	**CNMG 432 TA**	**CNMG120408-TA**		●	●						0.031	0.500	0.188	0.203
		**CNMG 433 TA**	**CNMG120412-TA**		●	●						0.047	0.500	0.188	0.203
Finish to Medium cutting	**NM**	**CNMG 432 NM**	**CNMG120408-NM**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		**CNMG 433 NM**	**CNMG120412-NM**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
	ZM	**CNMG 332E ZM**	**CNMG090408E-ZM**		●	●			▲	▲		0.031	0.375	0.188	0.150
		**CNMG 432 ZM**	**CNMG120408-ZM**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 ZM	**CNMG120412-ZM**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		CNMG 434 ZM	**CNMG120416-ZM**		●	●			▲	▲		0.063	0.500	0.188	0.203
Medium cutting	**DM**	**CNMG 431 DM**	**CNMG120404-DM**		●	●			▲	▲		0.016	0.500	0.188	0.203
		**CNMG 432 DM**	**CNMG120408-DM**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 DM	**CNMG120412-DM**	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203

● : Line-up
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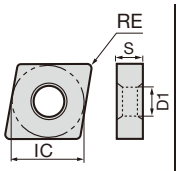
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣												
M	Stainless		●ᑕ																		
K	Cast iron		●ᑕ			●ᑕ	●ᑕ														
N	Non-ferrous																				
S	Superalloys																				
H	Hard materials																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**All-round**	**CNMG 321**	**CNMG090304**		●	●			▲	▲		0.016	0.375	0.125	0.150
		CNMG 32**2**	CNMG090308	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.125	0.150
		CNMG 431	**CNMG120404**	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		CNMG 43**2**	CNMG120408	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 43**3**	CNMG120412	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		CNMG 43**4**	CNMG120416	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.188	0.203
		CNMG 542	**CNMG160608**	●	●	●	●	▲	▲	▲	▲	0.031	0.625	0.250	0.250
		CNMG 54**3**	CNMG160612	●	●	●	●	▲	▲	▲	▲	0.047	0.625	0.250	0.250
		CNMG 54**4**	CNMG160616	●	●	●	●	▲	▲	▲	▲	0.063	0.625	0.250	0.250
		CNMG 642	**CNMG190608**		●	●	●		▲	▲	▲	0.031	0.750	0.250	0.312
		CNMG 64**3**	CNMG190612	●	●	●	●	▲	▲	▲	▲	0.047	0.750	0.250	0.312
		CNMG 64**4**	CNMG190616		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
Finishing to medium cutting	**27**	**CNMG 431-27**	**CNMG120404-27**		●	●			▲	▲		0.016	0.500	0.188	0.203
		CNMG 43**2-27**	CNMG120408-27		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 43**3-27**	CNMG120412-27			●				▲		0.047	0.500	0.188	0.203
	28	**CNMG 431-28**	**CNMG120404-28**			●				▲		0.016	0.500	0.188	0.203
Medium cutting	**33**	**CNMG 434 33**	**CNMG120416-33**		●				▲			0.063	0.500	0.188	0.203
		CNMG 543-33	**CNMG160612-33**		●				▲			0.047	0.625	0.250	0.250
		CNMG 643-33	**CNMG190612-33**		●				▲			0.047	0.750	0.250	0.312
	37	**CNMG 431-37**	**CNMG120404-37**		●				▲			0.016	0.500	0.188	0.203
		CNMG 43**2-37**	CNMG120408-37		●				▲			0.031	0.500	0.188	0.203
		CNMG 43**3-37**	CNMG120412-37		●				▲			0.047	0.500	0.188	0.203

● : Line-up
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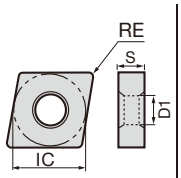
TurnLine - Insert NEGATIVE TYPE

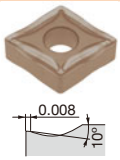
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣											
M	Stainless		●ᑕ																	
K	Cast iron		●ᑕ			●ᑕ	●ᑕ													
N	Non-ferrous																			
S	Superalloys																			
H	Hard materials																			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**38**	**CNMG 432-38**	**CNMG120408-38**		●				▲			0.031	0.500	0.188	0.203
															
Medium to heavy cutting	**TH**	**CNMG 432 TH**	**CNMG120408-TH**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 TH	**CNMG120412-TH**	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		CNMG 434 TH	**CNMG120416-TH**	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.188	0.203
		CNMG 543 TH	**CNMG160612-TH**	●	●	●	●	▲	▲	▲	▲	0.047	0.625	0.250	0.250
		CNMG 544 TH	**CNMG160616-TH**	●	●	●	●	▲	▲	▲	▲	0.063	0.625	0.250	0.250
		CNMG 643 TH	**CNMG190612-TH**	●	●	●	●	▲	▲	▲	▲	0.047	0.750	0.250	0.312
		CNMG 644 TH	**CNMG190616-TH**	●	●	●	●	▲	▲	▲	▲	0.063	0.750	0.250	0.312
	THS	**CNMG 432 THS**	**CNMG120408-THS**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		CNMG 433 THS	**CNMG120412-THS**	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		CNMG 434 THS	**CNMG120416-THS**	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.188	0.203
		CNMG 543 THS	**CNMG160612-THS**	●	●	●	●	▲	▲	▲	▲	0.047	0.625	0.250	0.250
		CNMG 544 THS	**CNMG160616-THS**	●	●	●	●	▲	▲	▲	▲	0.063	0.625	0.250	0.250
		CNMG 643 THS	**CNMG190612-THS**		●	●	●		▲	▲	▲	0.047	0.750	0.250	0.312
		CNMG 644 THS	**CNMG190616-THS**		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		CNMG 646 THS	**CNMG190624-THS**		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		CNMG 866 THS	**CNMG250924-THS**		●	●	●		▲	▲	▲	0.094	1.000	0.375	0.359
Medium to heavy cutting (Single sided)	**57**	**CNMM 431-57**	**CNMM120404-57**			●				▲		0.016	0.500	0.188	0.203
		CNMM 432-57	**CNMM120408-57**		●	●			▲	▲		0.031	0.500	0.188	0.203
		CNMM 433-57	**CNMM120412-57**			●				▲		0.047	0.500	0.188	0.203
		CNMM 643-57	**CNMM190612-57**			●				▲		0.047	0.750	0.250	0.312
		CNMM 644-57	**CNMM190616-57**			●				▲		0.063	0.750	0.250	0.312

● : Line-up
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TurnLine - Insert NEGATIVE TYPE

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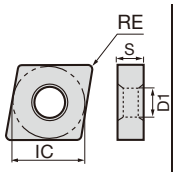
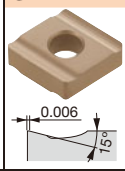
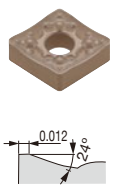
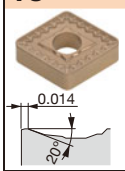
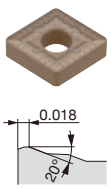
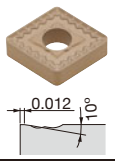
CN

Rhombic, 80° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣												
M	Stainless		●ᑕ																		
K	Cast iron		●ᑕ			●ᑕ	●ᑕ														
N	Non-ferrous																				
S	Superalloys																				
H	Hard materials																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**S**	**CNMG 431 L-S**	**CNMG120404L-S**			●	●			▲	▲	0.016	0.500	0.188	0.203
		CNMG 431 R-S	CNMG120404R-S			●	●			▲	▲	0.016	0.500	0.188	0.203
		CNMG 432 L-S	CNMG120408L-S			●	●			▲	▲	0.031	0.500	0.188	0.203
		CNMG 432 R-S	CNMG120408R-S			●	●			▲	▲	0.031	0.500	0.188	0.203
Medium to heavy cutting (Single sided)	**TRS**	**CNMM 432 TRS**	**CNMM120408-TRS**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		CNMM 433 TRS	CNMM120412-TRS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		CNMM 543 TRS	**CNMM160612-TRS**		●	●	●		▲	▲	▲	0.047	0.625	0.250	0.250
		CNMM 544 TRS	CNMM160616-TRS		●	●	●		▲	▲	▲	0.063	0.625	0.250	0.250
		CNMM 644 TRS	**CNMM190616-TRS**		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		CNMM 646 TRS	CNMM190624-TRS		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		CNMM 866 TRS	**CNMM250924-TRS**		●	●	●		▲	▲	▲	0.094	1.000	0.375	0.359
Heavy cutting (Single sided)	**TU**	**CNMM 643 TU**	**CNMM190612-TU**			●	●			▲	▲	0.047	0.750	0.250	0.312
		CNMM 644 TU	CNMM190616-TU			●	●			▲	▲	0.063	0.750	0.250	0.312
		CNMM 646 TU	CNMM190624-TU		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		CNMM 876 TU	**CNMM250924-TU**			●	●			▲	▲	0.094	1.000	0.375	0.359
	TUS	**CNMM 642 TUS**	**CNMM190608-TUS**		●	●			▲	▲		0.031	0.750	0.250	0.312
		CNMM 643 TUS	CNMM190612-TUS		●	●	●		▲	▲	▲	0.047	0.750	0.250	0.312
		CNMM 644 TUS	CNMM190616-TUS		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		CNMM 646 TUS	CNMM190624-TUS		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		CNMM 648 TUS	CNMM190632-TUS		●	●			▲	▲		0.125	0.750	0.250	0.312
		CNMM 864 TUS	**CNMM250916-TUS**		●	●	●		▲	▲	▲	0.063	1.000	0.375	0.359
		CNMM 866 TUS	CNMM250924-TUS		●	●	●		▲	▲	▲	0.094	1.000	0.375	0.359
		CNMM 868 TUS	CNMM250932-TUS		●	●			▲	▲		0.125	1.000	0.375	0.359
Medium to heavy cutting (Single sided)	**65**	**CNMM 433-65**	**CNMM120412-65**			●				▲		0.047	0.500	0.188	0.203
															

● : Line-up
● : New product
▲ : To be discontinued

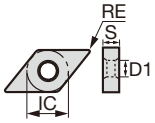
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	● ◐ ◐✣ ✣ ● ◐ ◐✣ ✣
M	Stainless	◐ ◐
K	Cast iron	◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	DNMG 331E TSF	DNMG110404E-TSF		●	●			▲	▲		0.016	0.375	0.188	0.150
		DNMG 332E TSF	DNMG110408E-TSF		●	●			▲	▲		0.031	0.375	0.188	0.150
		DNMG 333E TSF	DNMG110412E-TSF		●	●			▲	▲		0.047	0.375	0.188	0.150
		DNMG 431 TSF	DNMG150404-TSF	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		DNMG 432 TSF	DNMG150408-TSF	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 TSF	DNMG150412-TSF	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG150604-TSF	DNMG150604-TSF		●	●			▲	▲		0.016	0.500	0.250	0.203
		DNMG 442 TSF	DNMG150608-TSF	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 TSF	DNMG150612-TSF	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.250	0.203
Finishing (Wiper)	FW	DNMG 331E FW	DNMG110404E-FW		●				▲			0.016	0.375	0.188	0.150
		DNMG 332E FW	DNMG110408E-FW		●				▲			0.031	0.375	0.188	0.150
		DNMG 431 FW	DNMG150404-FW		●				▲			0.016	0.500	0.188	0.203
		DNMG 432 FW	DNMG150408-FW		●				▲			0.031	0.500	0.188	0.203
		DNMG 441 FW	DNMG150604-FW		●				▲			0.016	0.500	0.250	0.203
		DNMG 442 FW	DNMG150608-FW		●				▲			0.031	0.500	0.250	0.203
		*Wiper insert													
Finishing	ZF	DNMG 331E ZF	DNMG110404E-ZF		●	●			▲	▲		0.016	0.375	0.188	0.150
		DNMG 431 ZF	DNMG150404-ZF		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		DNMG 432 ZF	DNMG150408-ZF		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 ZF	DNMG150412-ZF		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 441 ZF	DNMG150604-ZF		●	●			▲	▲		0.016	0.500	0.250	0.203
		DNMG 442 ZF	DNMG150608-ZF		●	●	●		▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 ZF	DNMG150612-ZF		●	●			▲	▲		0.047	0.500	0.250	0.203
	11	DNMG 432-11	DNMG150408-11		●				▲			0.031	0.500	0.188	0.203

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
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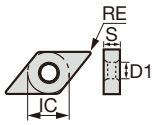
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣												
M	Stainless		●◐																		
K	Cast iron		●◐			●◐	●◐														
N	Non-ferrous																				
S	Superalloys																				
H	Hard materials																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TS	DNMG 431 TS	DNMG150404-TS		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		DNMG 432 TS	DNMG150408-TS	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 TS	DNMG150412-TS	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 442 TS	DNMG150608-TS		●	●			▲	▲		0.031	0.500	0.250	0.203
		DNMG 443 TS	DNMG150612-TS		●	●			▲	▲		0.047	0.500	0.250	0.203
Finishing to medium cutting (Wiper)	SW	DNMG 332E SW	DNMG110408E-SW		●				▲			0.031	0.375	0.188	0.150
		DNMG 333E SW	DNMG110412E-SW		●				▲			0.047	0.375	0.188	0.150
		DNMG 432 SW	DNMG150408-SW		●				▲			0.031	0.500	0.188	0.203
		DNMG 433 SW	DNMG150412-SW		●				▲			0.047	0.500	0.188	0.203
		DNMG 442 SW	DNMG150608-SW		●				▲			0.031	0.500	0.250	0.203
		DNMG 443 SW	DNMG150612-SW		●				▲			0.047	0.500	0.250	0.203
		*Wiper insert													
High feed, small depth of cut	AS	DNMG 431 AS	DNMG150404-AS		●		●		▲		▲	0.016	0.500	0.188	0.203
		DNMG 432 AS	DNMG150408-AS		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 AS	DNMG150412-AS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 441 AS	DNMG150604-AS		●				▲			0.016	0.500	0.250	0.203
		DNMG 442 AS	DNMG150608-AS		●	●			▲	▲		0.031	0.500	0.250	0.203
		DNMG 443 AS	DNMG150612-AS		●				▲			0.047	0.500	0.250	0.203
Boring (Double sided)	CB	DNMG 332 CB	DNMG110408-CB		●				▲			0.031	0.375	0.188	0.150
Finishing	NS	DNMG 431 NS	DNMG150404-NS			●				▲		0.016	0.500	0.188	0.203
		DNMG 432 NS	DNMG150408-NS	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
Finishing to medium cutting	AM	DNMG 432 AM	DNMG150408-AM		●	●			▲	▲		0.031	0.500	0.188	0.203
		DNMG 433 AM	DNMG150412-AM		●	●			▲	▲		0.047	0.500	0.188	0.203
		DNMG 434 AM	DNMG150416-AM		●	●			▲	▲		0.063	0.500	0.188	0.203
		DNMG 442 AM	DNMG150608-AM		●	●			▲	▲		0.031	0.500	0.250	0.203
		DNMG 443 AM	DNMG150612-AM		●	●			▲	▲		0.047	0.500	0.250	0.203
		DNMG 444 AM	DNMG150616-AM		●	●			▲	▲		0.063	0.500	0.250	0.203

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TurnLine - Insert NEGATIVE TYPE

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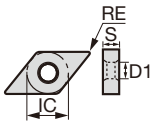
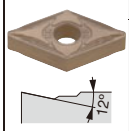
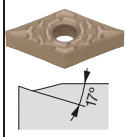
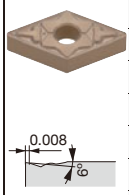
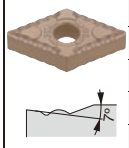
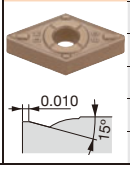
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣
M	Stainless		●◐						
K	Cast iron		●◐			●◐	●◐		
N	Non-ferrous								
S	Superalloys								
H	Hard materials								



Application	Chipbreaker	Designation Inch	Designation Metric	Coated								RE (In)	IC (In)	S (In)	D1 (In)
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135				
Finishing to medium cutting	NM	DNMG 432 NM	DNMG150408-NM		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 NM	DNMG150412-NM		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
															
	TQ	DNMG 431 TQ	DNMG150404-TQ		●	●						0.016	0.500	0.188	0.203
		DNMG 432 TQ	DNMG150408-TQ		●	●						0.031	0.500	0.188	0.203
															
Medium cutting	TM	DNMG 331E TM	DNMG110404E-TM		●	●			▲	▲		0.016	0.375	0.188	0.150
		DNMG 332E TM	DNMG110408E-TM		●	●			▲	▲		0.031	0.375	0.188	0.150
		DNMG 333E TM	DNMG110412E-TM		●	●			▲	▲		0.047	0.375	0.188	0.150
		DNMG 331 TM	DNMG110404-TM		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		DNMG 332 TM	DNMG110408-TM		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		DNMG 431 TM	DNMG150404-TM	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		DNMG 432 TM	DNMG150408-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 TM	DNMG150412-TM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 434 TM	DNMG150416-TM		●	●			▲	▲		0.063	0.500	0.188	0.203
		DNMG 441 TM	DNMG150604-TM	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.250	0.203
		DNMG 442 TM	DNMG150608-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 TM	DNMG150612-TM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.250	0.203
		DNMG 444 TM	DNMG150616-TM	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.250	0.203
															
Finishing to medium cutting	ZM	DNMG 332E ZM	DNMG110408E-ZM		●	●			▲	▲		0.031	0.375	0.188	0.150
		DNMG 432 ZM	DNMG150408-ZM		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 ZM	DNMG150412-ZM		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 442 ZM	DNMG150608-ZM		●	●	●		▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 ZM	DNMG150612-ZM		●	●			▲	▲		0.047	0.500	0.250	0.203
															
Medium cutting	DM	DNMG 432 DM	DNMG150408-DM		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 DM	DNMG150412-DM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 441 DM	DNMG150604-DM		●				▲			0.016	0.500	0.250	0.203
		DNMG 442 DM	DNMG150608-DM		●	●	●		▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 DM	DNMG150612-DM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.250	0.203
		DNMG 444 DM	DNMG150616-DM	●				▲				0.063	0.500	0.250	0.203
															

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TurnLine - Insert NEGATIVE TYPE

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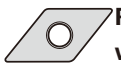
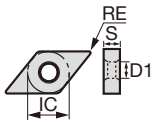
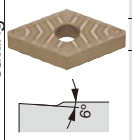
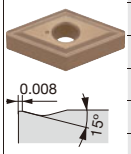
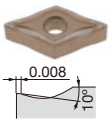
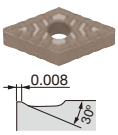
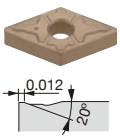
DN



Rhombic, 55° with hole

P	Steel	●	●ɔ	ɔ✣	✣	●	●ɔ	ɔ✣	✣										
M	Stainless		●ɔ																
K	Cast iron		●ɔ				●ɔ	●ɔ											
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**27**	**DNMG 431-27**	**DNMG150404-27**			●				▲		0.016	0.500	0.188	0.203
		DNMG 432-27	DNMG150408-27		●	●			▲	▲		0.031	0.500	0.188	0.203
		DNMG 433-27	DNMG150412-27			●				▲		0.047	0.500	0.188	0.203
Medium cutting	**All-round**	**DNMG 331**	**DNMG110404**		●	●			▲	▲		0.016	0.375	0.188	0.150
		DNMG 332	DNMG110408	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		DNMG 431	**DNMG150404**		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		DNMG 432	DNMG150408	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433	DNMG150412	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 434	DNMG150416		●	●			▲	▲		0.063	0.500	0.188	0.203
		DNMG 441	**DNMG150604**		●	●			▲	▲		0.016	0.500	0.250	0.203
		DNMG 442	DNMG150608	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443	DNMG150612	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.250	0.203
		DNMG 444	DNMG150616		●	●			▲	▲		0.063	0.500	0.250	0.203
	38	**DNMG 433 38**	**DNMG150412-38**		●				▲			0.047	0.500	0.188	0.203
															
	37	**DNMG 442-37**	**DNMG150608-37**		●				▲			0.031	0.500	0.250	0.203
															
Medium to heavy cutting	**TH**	**DNMG 432 TH**	**DNMG150408-TH**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 TH	DNMG150412-TH		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 434 TH	DNMG150416-TH		●	●			▲	▲		0.063	0.500	0.188	0.203
		**DNMG 442 TH**	**DNMG150608-TH**		●	●	●		▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 TH	DNMG150612-TH		●	●	●		▲	▲	▲	0.047	0.500	0.250	0.203
		DNMG 444 TH	DNMG150616-TH		●	●	●		▲	▲	▲	0.063	0.500	0.250	0.203

● : Line-up
● : New product
▲ : To be discontinued

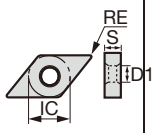
TurnLine - Insert NEGATIVE TYPE

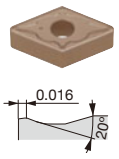
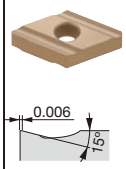
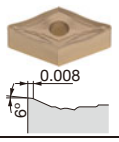
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣										
M	Stainless		●ᑕ																
K	Cast iron		●ᑕ				●ᑕ	●ᑕ											
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium to heavy cutting	**THS**	**DNMG 432 THS**	**DNMG150408-THS**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		DNMG 433 THS	DNMG150412-THS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		DNMG 434 THS	DNMG150416-THS		●	●			▲	▲		0.063	0.500	0.188	0.203
		DNMG 442 THS	**DNMG150608-THS**		●	●	●		▲	▲	▲	0.031	0.500	0.250	0.203
		DNMG 443 THS	DNMG150612-THS		●	●	●		▲	▲	▲	0.047	0.500	0.250	0.203
		DNMG 444 THS	DNMG150616-THS		●	●			▲	▲		0.063	0.500	0.250	0.203
Medium cutting	**S**	**DNMG 431 L-S**	**DNMG150404L-S**			●	●			▲	▲	0.016	0.500	0.188	0.203
		DNMG 431 R-S	DNMG150404R-S			●	●			▲	▲	0.016	0.500	0.188	0.203
		DNMG 432 L-S	**DNMG150408L-S**			●	●			▲	▲	0.031	0.500	0.188	0.203
		DNMG 432 R-S	DNMG150408R-S			●	●			▲	▲	0.031	0.500	0.188	0.203
		DNMG 441 L-S	**DNMG150604L-S**			●	●			▲	▲	0.016	0.500	0.250	0.203
		DNMG 441 R-S	DNMG150604R-S			●	●			▲	▲	0.016	0.500	0.250	0.203
		DNMG 442 L-S	**DNMG150608L-S**			●	●			▲	▲	0.031	0.500	0.250	0.203
		DNMG 442 R-S	DNMG150608R-S			●	●			▲	▲	0.031	0.500	0.250	0.203
Medium to heavy cutting (Single sided)	**57**	**DNMM 442-57**	**DNMM150608-57**			●				▲		0.031	0.500	0.250	0.203
		DNMM 443-57	DNMM150612-57			●				▲		0.047	0.500	0.250	0.203

● : Line-up
● : New product
▲ : To be discontinued

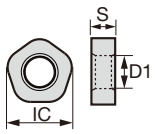
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

PO

Pentagon, 108° with hole

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium to heavy cutting	MNW	POMG 543 MNW	POMG110612-MNW		●	●				▲		0.047	0.625	0.250	0.047
		POMG 643 MNW	POMG130612-MNW		●	●				▲		0.047	0.750	0.250	0.047

● : Line-up
● : New product
▲ : To be discontinued

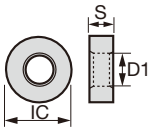
TurnLine - Insert NEGATIVE TYPE

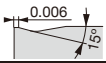
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

RN

Round, with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣										
M	Stainless		●ᑕ																
K	Cast iron		●ᑕ			●ᑕ	●ᑕ												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Heavy cutting	61	RNMG 32-61	RNMG090300-61		●	●			▲	▲		-	0.375	0.125	0.150
		RNMG 43-61	RNMG120400-61	●	●	●	●	▲	▲	▲	▲	-	0.500	0.188	0.203
		RNMG 54-61	RNMG150600-61		●	●			▲	▲		-	0.625	0.250	0.250
		RNMG 64-61	RNMG190600-61		●	●	●		▲	▲	▲	-	0.750	0.250	0.312
		RNMG 86-61	RNMG250900-61		●	●			▲	▲		-	1.000	0.375	0.359

● : Line-up
● : New product
▲ : To be discontinued

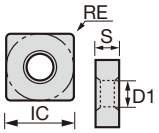
TurnLine - Insert NEGATIVE TYPE

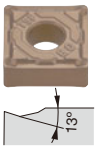
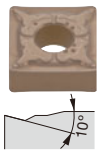
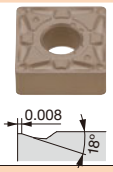
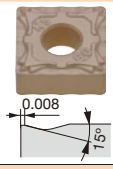
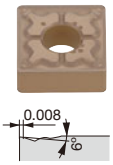
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣										
M	Stainless		●◐																
K	Cast iron		●◐			●◐	●◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	SNMG 431 TSF	SNMG120404-TSF		●	●			▲	▲		0.016	0.500	0.188	0.203
		SNMG 432 TSF	SNMG120408-TSF		●	●			▲	▲		0.031	0.500	0.188	0.203
		SNMG 433 TSF	SNMG120412-TSF		●	●			▲	▲		0.047	0.500	0.188	0.203
	TS	SNMG 431 TS	SNMG120404-TS		●	●			▲	▲		0.016	0.500	0.188	0.203
		SNMG 432 TS	SNMG120408-TS	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433 TS	SNMG120412-TS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
High feed, small depth of cut	AS	SNMG 432 AS	SNMG120408-AS	●	●			▲	▲			0.031	0.500	0.188	0.203
															
Finishing	NS	SNMG 432 NS	SNMG120408-NS		●	●			▲	▲		0.031	0.500	0.188	0.203
															
Medium cutting	TM	SNMG 321 TM	SNMG090304-TM		●	●	●		▲	▲	▲	0.016	0.375	0.125	0.150
		SNMG 322 TM	SNMG090308-TM		●	●	●		▲	▲	▲	0.031	0.375	0.125	0.150
		SNMG 431 TM	SNMG120404-TM		●	●			▲	▲		0.016	0.500	0.188	0.203
		SNMG 432 TM	SNMG120408-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433 TM	SNMG120412-TM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		SNMG 434 TM	SNMG120416-TM		●	●	●		▲	▲	▲	0.063	0.500	0.188	0.203
		SNMG 542 TM	SNMG150608-TM		●				▲			0.031	0.625	0.250	0.250
		SNMG 543 TM	SNMG150612-TM		●				▲			0.047	0.625	0.250	0.250
		SNMG 642 TM	SNMG190608-TM		●				▲			0.031	0.750	0.250	0.312
		SNMG 643 TM	SNMG190612-TM		●				▲			0.047	0.750	0.250	0.312

● : Line-up
● : New product
▲ : To be discontinued

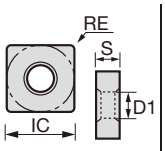
TurnLine - Insert NEGATIVE TYPE

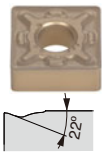
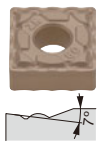
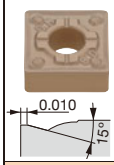
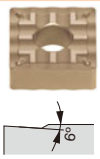
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣										
M	Stainless		●◐																
K	Cast iron		●◐			●◐	●◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**TA**	**SNMG 432 TA**	**SNMG120408-TA**		●	●						0.031	0.500	0.188	0.203
		SNMG 433 TA	SNMG120412-TA		●	●						0.047	0.500	0.188	0.203
Finishing to medium cutting	**ZM**	**SNMG 432 ZM**	**SNMG120408-ZM**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433 ZM	SNMG120412-ZM		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
Medium cutting	**DM**	**SNMG 432 DM**	**SNMG120408-DM**		●	●			▲	▲		0.031	0.500	0.188	0.203
		SNMG 433 DM	SNMG120412-DM		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
	All-round	**SNMG 321**	**SNMG090304**		●	●			▲	▲		0.016	0.375	0.125	0.150
		SNMG 322	SNMG090308		●	●	●		▲	▲	▲	0.031	0.375	0.125	0.150
		SNMG 431	**SNMG120404**		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		SNMG 432	SNMG120408	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433	SNMG120412	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		SNMG 434	SNMG120416	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.188	0.203
		SNMG 435	SNMG120420		●	●	●		▲	▲	▲	0.078	0.500	0.188	0.203
		SNMG 543	**SNMG150612**		●	●	●		▲	▲	▲	0.047	0.625	0.250	0.250
		SNMG 544	SNMG150616		●	●			▲	▲		0.063	0.625	0.250	0.250
		SNMG 643	**SNMG190612**		●	●	●		▲	▲	▲	0.047	0.750	0.250	0.312
		SNMG 644	SNMG190616		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		SNMG 856	**SNMG250724**		●	●	●		▲	▲	▲	0.094	1.000	0.313	0.359
Finishing to medium cutting	**27**	**SNMG 432-27**	**SNMG120408-27**			●				▲		0.031	0.500	0.188	0.203
		SNMG 433-27	SNMG120412-27			●				▲		0.047	0.500	0.188	0.203

● : Line-up
● : New product
▲ : To be discontinued

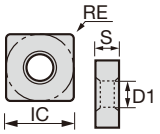
TurnLine - Insert NEGATIVE TYPE

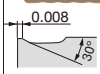
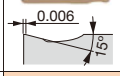
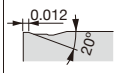
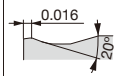
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	● ●ᑕ ᑕ✣ ✣ ● ●ᑕ ᑕ✣ ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	33	SNMG 432-33	SNMG120408-33		●	●			▲	▲		0.031	0.500	0.188	0.203
		SNMG 433-33	SNMG120412-33			●				▲		0.047	0.500	0.188	0.203
		SNMG 543-33	SNMG150612-33		●	●			▲	▲		0.047	0.625	0.250	0.250
		SNMG 644-33	SNMG190616-33			●	●			▲	▲	0.063	0.750	0.250	0.312
															
	37	SNMG 432-37	SNMG120408-37		●				▲			0.031	0.500	0.188	0.203
		SNMG 433-37	SNMG120412-37		●				▲			0.047	0.500	0.188	0.203
															
	S	SNMG 431 L-S	SNMG120404L-S			●	●			▲	▲	0.016	0.500	0.188	0.203
		SNMG 431 R-S	SNMG120404R-S			●	●			▲	▲	0.016	0.500	0.188	0.203
		SNMG 432 L-S	SNMG120408L-S			●	●			▲	▲	0.031	0.500	0.188	0.203
		SNMG 432 R-S	SNMG120408R-S			●	●			▲	▲	0.031	0.500	0.188	0.203
															
Medium to heavy cutting	TH	SNMG 432 TH	SNMG120408-TH		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433 TH	SNMG120412-TH		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		SNMG 543 TH	SNMG150612-TH	●	●	●		▲	▲	▲		0.047	0.625	0.250	0.250
		SNMG 544 TH	SNMG150616-TH	●	●	●		▲	▲	▲		0.063	0.625	0.250	0.250
		SNMG 643 TH	SNMG190612-TH	●	●	●	●	▲	▲	▲	▲	0.047	0.750	0.250	0.312
		SNMG 644 TH	SNMG190616-TH	●	●	●	●	▲	▲	▲	▲	0.063	0.750	0.250	0.312
	THS	SNMG 432 THS	SNMG120408-THS		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		SNMG 433 THS	SNMG120412-THS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		SNMG 543 THS	SNMG150612-THS		●	●			▲	▲		0.047	0.625	0.250	0.250
		SNMG 544 THS	SNMG150616-THS		●	●			▲	▲		0.063	0.625	0.250	0.250
		SNMG 642 THS	SNMG190608-THS		●	●	●		▲	▲	▲	0.031	0.750	0.250	0.312
		SNMG 643 THS	SNMG190612-THS		●	●	●		▲	▲	▲	0.047	0.750	0.250	0.312
		SNMG 644 THS	SNMG190616-THS		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		SNMG 646 THS	SNMG190624-THS		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		SNMG 854 THS	SNMG250716-THS		●	●	●		▲	▲	▲	0.063	1.000	0.313	0.359
		SNMG 856 THS	SNMG250724-THS		●	●	●		▲	▲	▲	0.094	1.000	0.313	0.359

● : Line-up
● : New product
▲ : To be discontinued

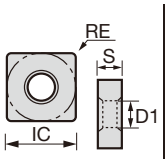
TurnLine - Insert NEGATIVE TYPE

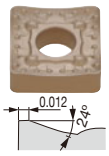
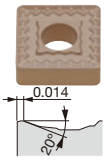
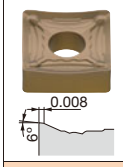
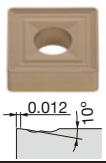
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣										
M	Stainless		●◐																
K	Cast iron		●◐			●◐	●◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium to heavy cutting (Single sided)	**TRS**	**SNMM 543 TRS**	**SNMM150612-TRS**		●	●	●		▲	▲	▲	0.047	0.625	0.250	0.250
		**SNMM 544 TRS**	**SNMM150616-TRS**		●	●	●		▲	▲	▲	0.063	0.625	0.250	0.250
		SNMM 644 TRS	**SNMM190616-TRS**		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		SNMM 646 TRS	**SNMM190624-TRS**		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		SNMM 866 TRS	**SNMM250924-TRS**		●	●	●		▲	▲	▲	0.094	1.000	0.375	0.359
Heavy cutting (Single sided)	**TU**	**SNMM 644 TU**	**SNMM190616-TU**				●				▲	0.063	0.750	0.250	0.312
		**SNMM 646 TU**	**SNMM190624-TU**			●	●			▲	▲	0.094	0.750	0.250	0.312
		SNMM 856 TU	**SNMM250724-TU**			●	●			▲	▲	0.094	1.000	0.313	0.359
		SNMM 866 TU	**SNMM250924-TU**		●	●			▲	▲		0.094	1.000	0.375	0.359
	TUS	**SNMM 643 TUS**	**SNMM190612-TUS**		●	●	●		▲	▲	▲	0.047	0.750	0.250	0.312
		**SNMM 644 TUS**	**SNMM190616-TUS**		●	●	●		▲	▲	▲	0.063	0.750	0.250	0.312
		SNMM 646 TUS	**SNMM190624-TUS**		●	●	●		▲	▲	▲	0.094	0.750	0.250	0.312
		SNMM 856 TUS	**SNMM250724-TUS**		●	●	●		▲	▲	▲	0.094	1.000	0.313	0.359
		SNMM 858 TUS	**SNMM250732-TUS**		●	●			▲	▲		0.125	1.000	0.313	0.359
		SNMM 866 TUS	**SNMM250924-TUS**		●	●	●		▲	▲	▲	0.094	1.000	0.375	0.359
		SNMM 868 TUS	**SNMM250932-TUS**		●	●			▲	▲		0.125	1.000	0.375	0.359
Medium to heavy cutting (Single sided)	**57**	**SNMM 432-57**	**SNMM120408-57**		●	●			▲	▲		0.031	0.500	0.188	0.203
		**SNMM 544-57**	**SNMM150616-57**			●				▲		0.063	0.625	0.250	0.250
		SNMM 643-57	**SNMM190612-57**			●				▲		0.047	0.750	0.250	0.312
	65	**SNMM 643-65**	**SNMM190612-65**			●				▲		0.047	0.750	0.250	0.312
		**SNMM 1066-65**	**SNMM310924-65**			●				▲		0.094	1.250	0.375	0.346

● : Line-up
● : New product
▲ : To be discontinued

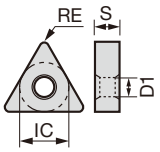
TurnLine - Insert NEGATIVE TYPE

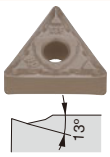
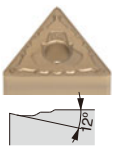
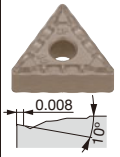
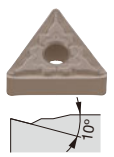
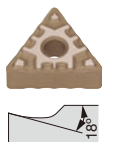
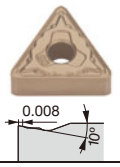
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣														
M	Stainless		●◐																				
K	Cast iron		●◐			●◐	●◐																
N	Non-ferrous																						
S	Superalloys																						
H	Hard materials																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	TNMG 231E TSF	TNMG110404E-TSF		●	●			▲	▲		0.016	0.250	0.188	0.089
		TNMG 232E TSF	TNMG110408E-TSF		●	●			▲	▲		0.031	0.250	0.188	0.089
		TNMG 331 TSF	TNMG160404-TSF		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 TSF	TNMG160408-TSF	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 TSF	TNMG160412-TSF		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
Finishing (Wiper)	FW	TNMG 231E FW	TNMG110404E-FW		●				▲			0.016	0.250	0.188	0.089
		TNMG 232E FW	TNMG110408E-FW		●				▲			0.031	0.250	0.188	0.089
		TNMG 331 FW	TNMG160404-FW		●				▲			0.016	0.375	0.188	0.150
		TNMG 332 FW	TNMG160408-FW		●				▲			0.031	0.375	0.188	0.150
		*Wiper insert													
Finishing	ZF	TNMG 331 ZF	TNMG160404-ZF		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 ZF	TNMG160408-ZF		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 ZF	TNMG160412-ZF			●				▲		0.047	0.375	0.188	0.150
	TS	TNMG 331 TS	TNMG160404-TS		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 TS	TNMG160408-TS	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 TS	TNMG160412-TS	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
Finishing of mild steels	17	TNMG 331-17	TNMG160404-17			●				▲		0.016	0.375	0.188	0.150
		TNMG 332-17	TNMG160408-17			●				▲		0.031	0.375	0.188	0.150
Finishing to medium cutting (Wiper)	SW	TNMG 232E SW	TNMG110408E-SW		●				▲			0.031	0.250	0.188	0.089
		TNMG 233E SW	TNMG110412E-SW		●				▲			0.047	0.250	0.188	0.089
		TNMG 332 SW	TNMG160408-SW		●				▲			0.031	0.375	0.188	0.150
		TNMG 333 SW	TNMG160412-SW		●				▲			0.047	0.375	0.188	0.150
		*Wiper insert													

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

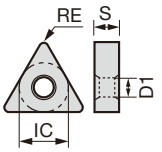
TurnLine - Insert NEGATIVE TYPE

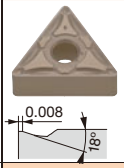
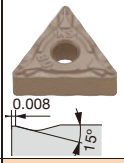
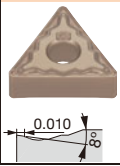
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣														
M	Stainless		●ᑕ																				
K	Cast iron		●ᑕ			●ᑕ	●ᑕ																
N	Non-ferrous																						
S	Superalloys																						
H	Hard materials																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
High feed, small depth of cut	**AS**	**TNMG 331 AS**	**TNMG160404-AS**			●	●			▲	▲	0.016	0.375	0.188	0.150
		**TNMG 332 AS**	**TNMG160408-AS**	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 AS	**TNMG160412-AS**	●	●	●		▲	▲	▲		0.047	0.375	0.188	0.150
Boring (Double sided)	**CB**	**TNMG 221 CB**	**TNMG110304-CB**		●				▲			0.016	0.250	0.125	0.089
		**TNMG 222 CB**	**TNMG110308-CB**		●				▲			0.031	0.250	0.125	0.089
Finishing	**NS**	**TNMG 331 NS**	**TNMG160404-NS**		●	●			▲	▲		0.016	0.375	0.188	0.150
		**TNMG 332 NS**	**TNMG160408-NS**	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
Medium cutting	**TM**	**TNMG 221 TM**	**TNMG110304-TM**		●	●	●		▲	▲	▲	0.016	0.250	0.125	0.089
		TNMG 222 TM	**TNMG110308-TM**		●	●	●		▲	▲	▲	0.031	0.250	0.125	0.089
		TNMG 231E TM	**TNMG110404E-TM**		●	●			▲	▲		0.016	0.250	0.188	0.089
		TNMG 232E TM	**TNMG110408E-TM**		●	●			▲	▲		0.031	0.250	0.188	0.089
		TNMG 233E TM	**TNMG110412E-TM**		●	●			▲	▲		0.047	0.250	0.188	0.089
		TNMG 331 TM	**TNMG160404-TM**		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 TM	**TNMG160408-TM**	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 TM	**TNMG160412-TM**	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
		TNMG 431 TM	**TNMG220404-TM**		●	●			▲	▲		0.016	0.500	0.188	0.203
		TNMG 432 TM	**TNMG220408-TM**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		TNMG 433 TM	**TNMG220412-TM**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		TNMG 434 TM	**TNMG220416-TM**		●	●			▲	▲		0.063	0.500	0.188	0.203
Finishing to medium cutting	**AM**	**TNMG 332 AM**	**TNMG160408-AM**		●	●			▲	▲		0.031	0.375	0.188	0.150
		**TNMG 333 AM**	**TNMG160412-AM**		●	●			▲	▲		0.047	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

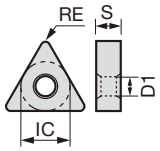
TurnLine - Insert NEGATIVE TYPE

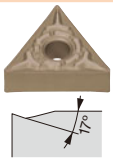
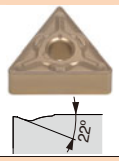
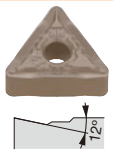
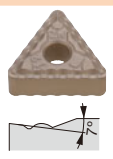
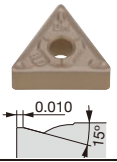
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣												
M	Stainless		●◐																		
K	Cast iron		●◐			●◐	●◐														
N	Non-ferrous																				
S	Superalloys																				
H	Hard materials																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**TQ**	**TNMG 331 TQ**	**TNMG160404-TQ**		●	●						0.016	0.375	0.188	0.150
		TNMG 332 TQ	TNMG160408-TQ		●	●						0.031	0.375	0.188	0.150
Medium cutting	**TA**	**TNMG 331 TA**	**TNMG160404-TA**		●	●						0.016	0.375	0.188	0.150
		TNMG 332 TA	TNMG160408-TA		●	●						0.031	0.375	0.188	0.150
		TNMG 333 TA	TNMG160412-TA		●	●						0.047	0.375	0.188	0.150
Finishing to medium cutting	**NM**	**TNMG 332 NM**	**TNMG160408-NM**			●				▲		0.031	0.375	0.188	0.150
		TNMG 333 NM	TNMG160412-NM		●	●			▲	▲		0.047	0.375	0.188	0.150
	ZM	**TNMG 331 ZM**	**TNMG160404-ZM**		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 ZM	TNMG160408-ZM		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 ZM	TNMG160412-ZM		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
		TNMG 433 ZM	TNMG220412-ZM			●				▲		0.047	0.500	0.188	0.203
Medium cutting	**DM**	**TNMG 332 DM**	**TNMG160408-DM**	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333 DM	TNMG160412-DM		●	●			▲	▲		0.047	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

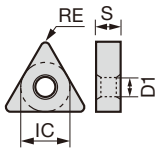
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣
M	Stainless		●◐						
K	Cast iron		●◐			●◐	●◐		
N	Non-ferrous								
S	Superalloys								
H	Hard materials								



Application	Chipbreaker	Designation Inch	Designation Metric	Coated								RE (In)	IC (In)	S (In)	D1 (In)
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135				
Medium cutting	All-round	TNMG 221	TNMG110304		●	●			▲	▲		0.016	0.250	0.125	0.089
		TNMG 222	TNMG110308		●	●			▲	▲		0.031	0.250	0.125	0.089
		TNMG 331	TNMG160404	●	●	●	●	▲	▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 332	TNMG160408	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		TNMG 333	TNMG160412	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
		TNMG 334	TNMG160416		●	●	●		▲	▲	▲	0.063	0.375	0.188	0.150
		TNMG 335	TNMG160420		●	●	●		▲	▲	▲	0.078	0.375	0.188	0.150
		TNMG 432	TNMG220408	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		TNMG 433	TNMG220412	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		TNMG 434	TNMG220416		●	●			▲	▲		0.063	0.500	0.188	0.203
		TNMG 542	TNMG270608			●				▲		0.031	0.625	0.250	0.250
		TNMG 543	TNMG270612			●				▲		0.047	0.625	0.250	0.250
Finishing to medium cutting	27	TNMG 331-27	TNMG160404-27		●	●			▲	▲		0.016	0.375	0.188	0.150
		TNMG 332-27	TNMG160408-27		●	●			▲	▲		0.031	0.375	0.188	0.150
		TNMG 333-27	TNMG160412-27		●	●			▲	▲		0.047	0.375	0.188	0.150
		TNMG 431-27	TNMG220404-27			●				▲		0.016	0.500	0.188	0.203
		TNMG 432-27	TNMG220408-27			●				▲		0.031	0.500	0.188	0.203
		TNMG 433-27	TNMG220412-27			●				▲		0.047	0.500	0.188	0.203
Medium cutting	33	TNMG 334-33	TNMG160416-33			●				▲		0.063	0.375	0.188	0.150
		TNMG 431-33	TNMG220404-33			●				▲		0.016	0.500	0.188	0.203
		TNMG 433-33	TNMG220412-33				●				▲	0.047	0.500	0.188	0.203
		TNMG 434-33	TNMG220416-33			●				▲		0.063	0.500	0.188	0.203
	37	TNMG 331-37	TNMG160404-37		●				▲			0.016	0.375	0.188	0.150
		TNMG 332-37	TNMG160408-37		●				▲			0.031	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

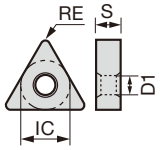
TurnLine - Insert NEGATIVE TYPE

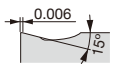
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣														
M	Stainless		●ᑕ																				
K	Cast iron		●ᑕ			●ᑕ	●ᑕ																
N	Non-ferrous																						
S	Superalloys																						
H	Hard materials																						



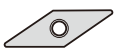
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**S**	**TNMG 331 R-S**	**TNMG160404R-S**		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		TNMG 331 **L-S**	TNMG160404**L-S**			●	●			▲	▲	0.016	0.375	0.188	0.150
		TNMG 332 R-S	TNMG160408**R-S**			●	●			▲	▲	0.031	0.375	0.188	0.150
		TNMG 332 **L-S**	TNMG160408**L-S**			●	●			▲	▲	0.031	0.375	0.188	0.150
		TNMG 431 R-S	**TNMG220404R-S**			●	●			▲	▲	0.016	0.500	0.188	0.203
		TNMG 431 **L-S**	TNMG220404**L-S**			●	●			▲	▲	0.016	0.500	0.188	0.203
		TNMG 432 R-S	TNMG220408**R-S**			●	●			▲	▲	0.031	0.500	0.188	0.203
		TNMG 432 **L-S**	TNMG220408**L-S**			●	●			▲	▲	0.031	0.500	0.188	0.203
Medium to heavy cutting	**TH**	**TNMG 432 TH**	**TNMG220408-TH**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		TNMG 43**3 TH**	TNMG220412**-TH**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
	THS	**TNMG 432 THS**	**TNMG220408-THS**		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		TNMG 43**3 THS**	TNMG220412**-THS**		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
Medium to heavy cutting (Single sided)	**57**	**TNMM 332-57**	**TNMM160408-57**			●				▲		0.031	0.375	0.188	0.150
		**TNMM 432-57**	**TNMM220408-57**			●				▲		0.031	0.500	0.188	0.203
		TNMM 43**3-57**	TNMM220412**-57**			●				▲		0.047	0.500	0.188	0.203

● : Line-up
● : New product
▲ : To be discontinued

TurnLine - Insert NEGATIVE TYPE

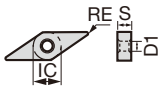
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN



Rhombic, 35° with hole

P	Steel	●	◐	◐✣	✣	●	◐	◐✣	✣										
M	Stainless		◐				◐												
K	Cast iron		◐			◐	◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



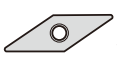
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	VNMG 2.330.5E TSF	VNMG120402E-TSF		●	●			▲	▲		0.0078	0.281	0.188	0.150
		VNMG 2.331E TSF	VNMG120404E-TSF		●	●			▲	▲		0.016	0.281	0.188	0.150
		VNMG 2.332E TSF	VNMG120408E-TSF		●	●			▲	▲		0.031	0.281	0.188	0.150
		VNMG 331 TSF	VNMG160404-TSF	●	●	●	●	▲	▲	▲	▲	0.016	0.375	0.188	0.150
		VNMG 332 TSF	VNMG160408-TSF	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 TSF	VNMG160412-TSF	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
	ZF	VNMG 331 ZF	VNMG160404-ZF		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		VNMG 332 ZF	VNMG160408-ZF		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 ZF	VNMG160412-ZF		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
	TS	VNMG 331 TS	VNMG160404-TS		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		VNMG 332 TS	VNMG160408-TS		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 TS	VNMG160412-TS		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
Medium cutting	TM	VNMG 2.331E TM	VNMG120404E-TM		●	●			▲	▲		0.016	0.281	0.188	0.150
		VNMG 2.332E TM	VNMG120408E-TM		●	●			▲	▲		0.031	0.281	0.188	0.150
		VNMG 331 TM	VNMG160404-TM	●	●	●	●	▲	▲	▲	▲	0.016	0.375	0.188	0.150
		VNMG 332 TM	VNMG160408-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 TM	VNMG160412-TM	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
Finishing to medium cutting	ZM	VNMG 332 ZM	VNMG160408-ZM		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 ZM	VNMG160412-ZM		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

TurnLine - Insert NEGATIVE TYPE

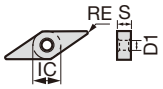
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

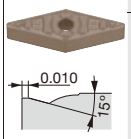
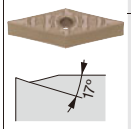
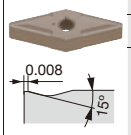
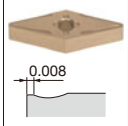
VN



Rhombic, 35° with hole

P	Steel	●	●ᑕ	ᑕ✣	✣	●	●ᑕ	ᑕ✣	✣										
M	Stainless		●ᑕ																
K	Cast iron		●ᑕ				●ᑕ	●ᑕ											
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**DM**	**VNMG 332 DM**	**VNMG160408-DM**	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333 DM	VNMG160412-DM		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
Finishing to medium cutting	**TQ**	**VNMG 331 TQ**	**VNMG160404-TQ**		●	●						0.016	0.375	0.188	0.150
		VNMG 332 TQ	VNMG160408-TQ		●	●						0.031	0.375	0.188	0.150
Medium cutting	**All-round**	**VNMG 331**	**VNMG160404**	●	●	●	●	▲	▲	▲	▲	0.016	0.375	0.188	0.150
		VNMG 332	VNMG160408	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		VNMG 333	VNMG160412		●	●			▲	▲		0.047	0.375	0.188	0.150
	33	**VNMG 331-33**	**VNMG160404-33**			●				▲		0.016	0.375	0.188	0.150
		VNMG 332-33	VNMG160408-33		●	●			▲	▲		0.031	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

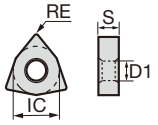
TurnLine - Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

P	Steel	● ◐ ◐✣ ✣ ● ◐ ◐✣ ✣
M	Stainless	◐ ◐
K	Cast iron	◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	TSF	WNMG 331E TSF	WNMG060404E-TSF		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 332E TSF	WNMG060408E-TSF		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 333E TSF	WNMG060412E-TSF		●	●			▲	▲		0.047	0.375	0.188	0.150
		WNMG 331 TSF	WNMG060404-TSF		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 332 TSF	WNMG060408-TSF		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 431 TSF	WNMG080404-TSF		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		WNMG 432 TSF	WNMG080408-TSF		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 TSF	WNMG080412-TSF	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
Finishing to medium cutting (Wiper)	FW	WNMG 331E FW	WNMG060404E-FW	●	●	●		▲	▲	▲		0.016	0.375	0.188	0.150
		WNMG 332E FW	WNMG060408E-FW	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
		WNMG 431 FW	WNMG080404-FW		●	●			▲	▲		0.016	0.500	0.188	0.203
		WNMG 432 FW	WNMG080408-FW	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
		*Wiper insert													
	AFW	WNMG 331 AFW	WNMG060404-AFW		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 332 AFW	WNMG060408-AFW	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		WNMG 431 AFW	WNMG080404-AFW		●	●			▲	▲		0.016	0.500	0.188	0.203
		WNMG 432 AFW	WNMG080408-AFW	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
Finishing	ZF	WNMG 331E ZF	WNMG060404E-ZF		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 331 ZF	WNMG060404-ZF		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 332 ZF	WNMG060408-ZF		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 431 ZF	WNMG080404-ZF		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		WNMG 432 ZF	WNMG080408-ZF		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 ZF	WNMG080412-ZF		●				▲			0.047	0.500	0.188	0.203
	TS	WNMG 431 TS	WNMG080404-TS		●	●	●		▲	▲	▲	0.016	0.500	0.188	0.203
		WNMG 432 TS	WNMG080408-TS		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 TS	WNMG080412-TS		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

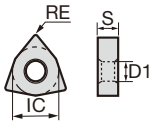
TurnLine - Insert NEGATIVE TYPE

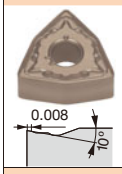
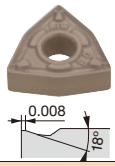
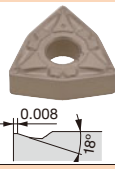
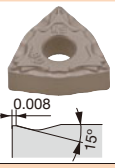
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

WN

Trigon, 80° with hole

P	Steel	● ●ᑕ ᑕ✠ ✠ ● ●ᑕ ᑕ✠ ✠
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE	IC	S	D1
Finishing to medium cutting (Wiper)	**SW**	**WNMG 332E SW**	**WNMG060408E-SW**	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
		WNMG 33**3E SW**	WNMG060412E-SW	●	●	●		▲	▲	▲		0.047	0.375	0.188	0.150
		WNMG 432 SW	**WNMG080408-SW**	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
		WNMG 43**3 SW**	WNMG080412-SW		●	●			▲	▲		0.047	0.500	0.188	0.203
		*Wiper insert													
	ASW	**WNMG 332 ASW**	**WNMG060408-ASW**	●	●	●		▲	▲	▲		0.031	0.375	0.188	0.150
		WNMG 33**3 ASW**	WNMG060412-ASW	●	●	●	●	▲	▲	▲	▲	0.047	0.375	0.188	0.150
		WNMG 432 ASW	**WNMG080408-ASW**	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 43**3 ASW**	WNMG080412-ASW	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
High feed, small depth of cut	**AS**	**WNMG 431 AS**	**WNMG080404-AS**	●				▲				0.016	0.500	0.188	0.203
		WNMG 43**2 AS**	WNMG080408-AS	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 43**3 AS**	WNMG080412-AS	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
Finishing	**NS**	**WNMG 431 NS**	**WNMG080404-NS**		●	●			▲	▲		0.016	0.500	0.188	0.203
		WNMG 43**2 NS**	WNMG080408-NS		●	●			▲	▲		0.031	0.500	0.188	0.203
Boring (Double sided)	**CB**	**WNMG 331 CB**	**WNMG060404-CB**			●				▲		0.016	0.375	0.188	0.150
		WNMG 33**2 CB**	WNMG060408-CB			●				▲		0.031	0.375	0.188	0.150
Medium cutting	**TM**	**WNMG 331E TM**	**WNMG060404E-TM**		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 33**2E TM**	WNMG060408E-TM		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 33**3E TM**	WNMG060412E-TM		●	●			▲	▲		0.047	0.375	0.188	0.150
		WNMG 33**1 TM**	WNMG060404-TM		●	●	●		▲	▲	▲	0.016	0.375	0.188	0.150
		WNMG 33**2 TM**	WNMG060408-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.375	0.188	0.150
		WNMG 431 TM	**WNMG080404-TM**	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		WNMG 43**2 TM**	WNMG080408-TM	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 43**3 TM**	WNMG080412-TM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		WNMG 43**4 TM**	WNMG080416-TM	●	●	●		▲	▲	▲		0.063	0.500	0.188	0.203

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

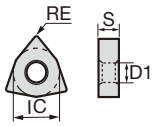
TurnLine - Insert NEGATIVE TYPE

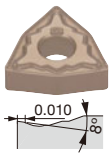
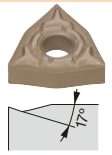
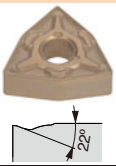
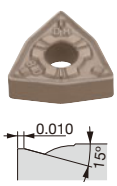
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

P	Steel	●	◐	◐	✣	●	◐	◐	✣												
M	Stainless		◐																		
K	Cast iron		◐			◐	◐														
N	Non-ferrous																				
S	Superalloys																				
H	Hard materials																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	AM	WNMG 432 AM	WNMG080408-AM		●	●			▲	▲		0.031	0.500	0.188	0.203
		WNMG 433 AM	WNMG080412-AM		●	●			▲	▲		0.047	0.500	0.188	0.203
		WNMG 434 AM	WNMG080416-AM		●	●			▲	▲		0.063	0.500	0.188	0.203
	TQ	WNMG 431 TQ	WNMG080404-TQ		●	●						0.016	0.500	0.188	0.203
		WNMG 432 TQ	WNMG080408-TQ		●	●						0.031	0.500	0.188	0.203
Medium cutting	TA	WNMG 432 TA	WNMG080408-TA		●	●						0.031	0.500	0.188	0.203
		WNMG 433 TA	WNMG080412-TA		●	●						0.047	0.500	0.188	0.203
Finishing to medium cutting	NM	WNMG 333E NM	WNMG060412E-NM			●				▲		0.047	0.375	0.188	0.150
		WNMG 432 NM	WNMG080408-NM	●	●	●		▲	▲	▲		0.031	0.500	0.188	0.203
		WNMG 433 NM	WNMG080412-NM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
	ZM	WNMG 332E ZM	WNMG060408E-ZM		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 332 ZM	WNMG060408-ZM		●	●	●		▲	▲	▲	0.031	0.375	0.188	0.150
		WNMG 333 ZM	WNMG060412-ZM		●	●	●		▲	▲	▲	0.047	0.375	0.188	0.150
		WNMG 432 ZM	WNMG080408-ZM		●	●	●		▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 ZM	WNMG080412-ZM		●	●	●		▲	▲	▲	0.047	0.500	0.188	0.203
		WNMG 434 ZM	WNMG080416-ZM		●	●			▲	▲		0.063	0.500	0.188	0.203
Medium cutting	DM	WNMG 432 DM	WNMG080408-DM	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 DM	WNMG080412-DM	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203

● : Line-up
● : New product
▲ : To be discontinued

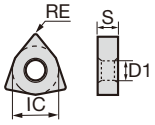
TurnLine - Insert NEGATIVE TYPE

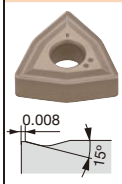
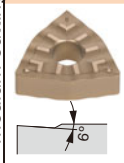
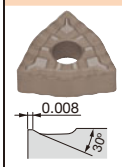
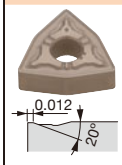
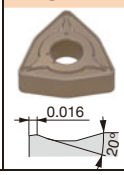
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

P	Steel	● ◐ ◐✣ ✣ ● ◐ ◐✣ ✣
M	Stainless	◐ ◐
K	Cast iron	◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



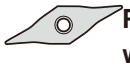
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	All-round	WNMG 331	WNMG060404		●	●			▲	▲		0.016	0.375	0.188	0.150
		WNMG 332	WNMG060408		●	●			▲	▲		0.031	0.375	0.188	0.150
		WNMG 431	WNMG080404	●	●	●	●	▲	▲	▲	▲	0.016	0.500	0.188	0.203
		WNMG 432	WNMG080408	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433	WNMG080412	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		WNMG 434	WNMG080416	●	●	●	●	▲	▲	▲	▲	0.063	0.500	0.188	0.203
Finishing to medium cutting	27	WNMG 432-27	WNMG080408-27			●				▲		0.031	0.500	0.188	0.203
															
Medium cutting	37	WNMG 432-37	WNMG080408-37		●				▲			0.031	0.500	0.188	0.203
															
Medium to heavy cutting	TH	WNMG 432 TH	WNMG080408-TH	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 TH	WNMG080412-TH	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		WNMG 434 TH	WNMG080416-TH	●	●	●		▲	▲	▲		0.063	0.500	0.188	0.203
		WNMG 543 TH	WNMG100612-TH		●	●			▲	▲		0.047	0.625	0.250	0.250
		WNMG 544 TH	WNMG100616-TH		●	●			▲	▲		0.063	0.625	0.250	0.250
	THS	WNMG 432 THS	WNMG080408-THS	●	●	●	●	▲	▲	▲	▲	0.031	0.500	0.188	0.203
		WNMG 433 THS	WNMG080412-THS	●	●	●	●	▲	▲	▲	▲	0.047	0.500	0.188	0.203
		WNMG 434 THS	WNMG080416-THS		●	●			▲	▲		0.063	0.500	0.188	0.203
		WNMG 543 THS	WNMG100612-THS		●	●	●		▲	▲	▲	0.047	0.625	0.250	0.250
		WNMG 544 THS	WNMG100616-THS		●	●	●		▲	▲	▲	0.063	0.625	0.250	0.250

● : Line-up
● : New product
▲ : To be discontinued

TurnLine - Insert NEGATIVE TYPE

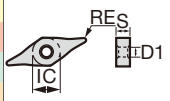
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

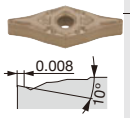
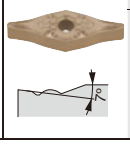
YN



Rhombic, 25° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣										
M	Stainless		●◐																
K	Cast iron		●◐			●◐	●◐												
N	Non-ferrous																		
S	Superalloys																		
H	Hard materials																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	ZF	YNMG 331 ZF	YNMG160404-ZF			●	●			▲	▲	0.016	0.375	0.188	0.150
		YNMG 332 ZF	YNMG160408-ZF			●	●			▲	▲	0.031	0.375	0.188	0.150
Finishing to medium cutting	ZM	YNMG 331 ZM	YNMG160404-ZM			●	●			▲	▲	0.016	0.375	0.188	0.150
		YNMG 332 ZM	YNMG160408-ZM			●	●			▲	▲	0.031	0.375	0.188	0.150

● : Line-up
● : New product
▲ : To be discontinued

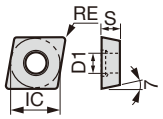
TurnLine - Insert POSITIVE TYPE

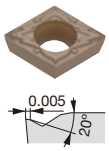
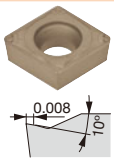
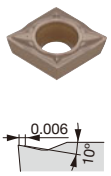
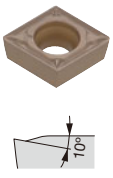
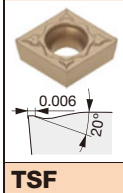
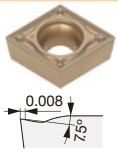
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	**PSF**	**CCMT 21.51 PSF**	**CCMT060204-PSF**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**CCMT 32.51 PSF**	**CCMT09T304-PSF**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52 PSF	**CCMT09T308-PSF**	●	●	▲	▲	0.031	0.375	0.156	0.173
	PF	**CCMT 32.52 PF**	**CCMT09T308-PF**		●		▲	0.031	0.375	0.156	0.173
											
Finishing to light cutting	**PSS**	**CCMT 21.51 PSS**	**CCMT060204-PSS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		CCMT 21.52 PSS	**CCMT060208-PSS**	●	●	▲	▲	0.031	0.250	0.094	0.110
		**CCMT 32.51 PSS**	**CCMT09T304-PSS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52 PSS	**CCMT09T308-PSS**	●	●	▲	▲	0.031	0.375	0.156	0.173
		CCMT 431 PSS	**CCMT120404-PSS**	●	●	▲	▲	0.016	0.500	0.188	0.217
		CCMT 432 PSS	**CCMT120408-PSS**	●	●	▲	▲	0.031	0.500	0.188	0.217
		CCMT 433 PSS	**CCMT120412-PSS**	●	●	▲	▲	0.047	0.500	0.188	0.217
Finishing to medium cutting	**PS**	**CCMT 21.50.5 PS**	**CCMT060202-PS**	●	●	▲	▲	0.0078	0.250	0.094	0.110
		CCMT 21.51 PS	**CCMT060204-PS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		CCMT 21.52 PS	**CCMT060208-PS**	●	●	▲	▲	0.031	0.250	0.094	0.110
		**CCMT 32.50.5 PS**	**CCMT09T302-PS**	●	●	▲	▲	0.0078	0.375	0.156	0.173
		CCMT 32.51 PS	**CCMT09T304-PS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52 PS	**CCMT09T308-PS**	●	●	▲	▲	0.031	0.375	0.156	0.173
		CCMT 431 PS	**CCMT120404-PS**	●	●	▲	▲	0.016	0.500	0.188	0.217
		CCMT 432 PS	**CCMT120408-PS**	●	●	▲	▲	0.031	0.500	0.188	0.217
		CCMT 433 PS	**CCMT120412-PS**	●	●	▲	▲	0.047	0.500	0.188	0.217
	TM	**CCMT 21.51 TM**	**CCMT060204-TM**	●	●			0.016	0.250	0.094	0.110
		CCMT 21.52 TM	**CCMT060208-TM**	●	●			0.031	0.250	0.094	0.110
		**CCMT 32.51 TM**	**CCMT09T304-TM**	●	●			0.016	0.375	0.156	0.173
		CCMT 32.52 TM	**CCMT09T308-TM**	●	●			0.031	0.375	0.156	0.173
	TSF	**CCMT 21.51 TSF**	**CCMT060204-TSF**	●	●			0.016	0.250	0.094	0.110
		CCMT 21.52 TSF	**CCMT060208-TSF**	●	●			0.031	0.250	0.094	0.110
		**CCMT 32.51 TSF**	**CCMT09T304-TSF**	●	●			0.016	0.375	0.156	0.173
		CCMT 32.52 TSF	**CCMT09T308-TSF**	●	●			0.031	0.375	0.156	0.173

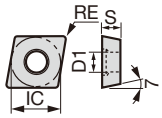
TurnLine - Insert POSITIVE TYPE

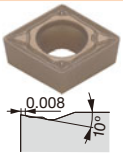
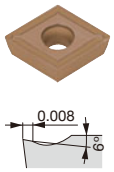
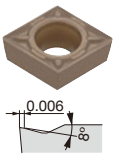
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

P	Steel	●ᑕ ✣ ●ᑕ ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting (Wiper)	**SW**	**CCMT 21.51 SW**	**CCMT060204-SW**	●	●	▲	▲	0.016	0.250	0.094	0.110
		CCMT 21.52 SW	CCMT060208-SW	●	●	▲	▲	0.031	0.250	0.094	0.110
		CCMT 32.51 SW	**CCMT09T304-SW**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52 SW	CCMT09T308-SW	●	●	▲	▲	0.031	0.375	0.156	0.173
		*Wiper insert									
Finishing to medium cutting	**23**	**CCMT 21.51-23**	**CCMT060204-23**		●		▲	0.016	0.250	0.094	0.110
		CCMT 21.52-23	CCMT060208-23		●		▲	0.031	0.250	0.094	0.110
		CCMT 32.51-23	**CCMT09T304-23**		●		▲	0.016	0.375	0.156	0.173
		CCMT 32.52-23	CCMT09T308-23		●		▲	0.031	0.375	0.156	0.173
Medium cutting	**24**	**CCMT 21.50.5-24**	**CCMT060202-24**		●		▲	0.0078	0.250	0.094	0.110
		**CCMT 21.51-24**	**CCMT060204-24**	●	●	▲	▲	0.016	0.250	0.094	0.110
		CCMT 21.52-24	**CCMT060208-24**	●	●	▲	▲	0.031	0.250	0.094	0.110
		CCMT 32.50.5-24	**CCMT09T302-2**		●		▲	0.0078	0.375	0.156	0.173
		CCMT 32.51-24	**CCMT09T304-24**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52-24	**CCMT09T308-24**	●	●	▲	▲	0.031	0.375	0.156	0.173
		CCMT 432-24	**CCMT120408-24**	●	●	▲	▲	0.031	0.500	0.188	0.217
	PM	**CCMT 21.51 PM**	**CCMT060204-PM**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**CCMT 21.52 PM**	**CCMT060208-PM**	●	●	▲	▲	0.031	0.250	0.094	0.110
		CCMT 32.51 PM	**CCMT09T304-PM**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CCMT 32.52 PM	**CCMT09T308-PM**	●	●	▲	▲	0.031	0.375	0.156	0.173
		CCMT 32.53 PM	**CCMT09T312-PM**	●	●	▲	▲	0.047	0.375	0.156	0.173

* Please contact our sales representative with inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product
▲ : To be discontinued

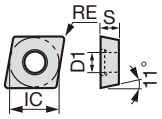
TurnLine - Insert POSITIVE TYPE

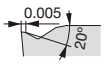
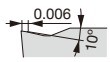
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP

Rhombic, 80° with hole Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	**PSF**	**CPMT 21.51 PSF**	**CPMT060204-PSF**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**CPMT 2.51.51 PSF**	**CPMT080204-PSF**	●	●	▲	▲	0.016	0.313	0.094	0.134
		CPMT 321 PSF	**CPMT090304-PSF**	●	●	▲	▲	0.016	0.375	0.125	0.173
		CPMT 32.51 PSF	**CPMT09T304-PSF**	●	●	▲	▲	0.016	0.375	0.156	0.173
											
Finishing to light cutting	**PSS**	**CPMT 21.51 PSS**	**CPMT060204-PSS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**CPMT 2.51.51 PSS**	**CPMT080204-PSS**	●	●	▲	▲	0.016	0.313	0.094	0.134
		CPMT 2.51.52 PSS	**CPMT080208-PSS**	●	●	▲	▲	0.031	0.313	0.094	0.134
		CPMT 321 PSS	**CPMT090304-PSS**	●	●	▲	▲	0.016	0.375	0.125	0.173
		CPMT 322 PSS	**CPMT090308-PSS**	●	●	▲	▲	0.031	0.375	0.125	0.173
		CPMT 32.51 PSS	**CPMT09T304-PSS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		**CPMT 32.52 PSS**	**CPMT09T308-PSS**	●	●	▲	▲	0.031	0.375	0.156	0.173

● : Line-up
● : New product
▲ : To be discontinued

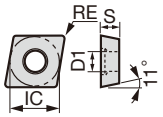
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP

Rhombic, 80°
with hole
Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**PS**	**CPMT 21.50.5 PS**	**CPMT060202-PS**	●	●	▲	▲	0.0078	0.250	0.094	0.110
		CPMT 21.51 PS	**CPMT060204-PS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		CPMT 2.51.50.5 PS	**CPMT080202-PS**	●	●	▲	▲	0.0078	0.313	0.094	0.134
		CPMT 2.51.51 PS	**CPMT080204-PS**	●	●	▲	▲	0.016	0.313	0.094	0.134
		CPMT 2.51.52 PS	**CPMT080208-PS**	●	●	▲	▲	0.031	0.313	0.094	0.134
		CPMT 321 PS	**CPMT090304-PS**	●	●	▲	▲	0.016	0.375	0.125	0.173
		CPMT 322 PS	**CPMT090308-PS**	●	●	▲	▲	0.031	0.375	0.125	0.173
		CPMT 32.50.5 PS	**CPMT09T302-PS**	●	●	▲	▲	0.0078	0.375	0.156	0.173
		CPMT 32.51 PSF	**CPMT09T304-PS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		CPMT 32.52 PS	**CPMT09T308-PS**	●	●	▲	▲	0.031	0.375	0.156	0.173
	TM	**CPMT 32.51 TM**	**CPMT09T304-TM**	●	●			0.016	0.375	0.156	0.173
		CPMT 32.52 TM	**CPMT09T308-TM**	●	●			0.031	0.375	0.156	0.173
	TSF	**CPMT 32.51 TSF**	**CPMT09T304-TSF**	●	●			0.016	0.375	0.156	0.173
		CPMT 32.52 TSF	**CPMT09T308-TSF**	●	●			0.031	0.375	0.156	0.173
Medium cutting	**24**	**CPMT 2.51.51-24**	**CPMT080204-24**	●		▲		0.016	0.313	0.094	0.134
		CPMT 2.51.52-24	**CPMT080208-24**		●		▲	0.031	0.313	0.094	0.134
		CPMT 322-24	**CPMT090308-24**		●		▲	0.031	0.375	0.125	0.173
		CPMT 53.52-24	**CPMT160508-24**		●		▲	0.031	0.625	0.219	0.217
	PM	**CPMT 21.52 PM**	**CPMT060208-PM**		●		▲	0.031	0.250	0.094	0.110
		CPMT 321 PM	**CPMT090304-PM**		●		▲	0.016	0.375	0.125	0.173
		CPMT 322 PM	**CPMT090308-PM**		●		▲	0.031	0.375	0.125	0.173

● : Line-up
● : New product
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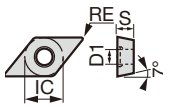
TurnLine - Insert POSITIVE TYPE

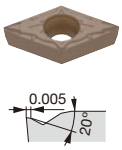
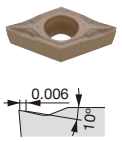
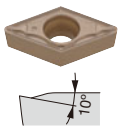
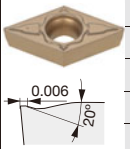
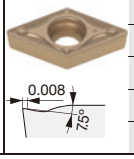
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55°
with hole
Positive 7°

P	Steel	●ᑕ ✣ ●ᑕ ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	**PSF**	**DCMT 21.51 PSF**	**DCMT070204-PSF**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**DCMT 32.51 PSF**	**DCMT11T304-PSF**	●	●	▲	▲	0.016	0.375	0.156	0.173
		DCMT 32.52 PSF	DCMT11T308-PSF	●	●	▲	▲	0.031	0.375	0.156	0.173
Finishing to light cutting	**PSS**	**DCMT 21.51 PSS**	**DCMT070204-PSS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		DCMT 21.52 PSS	DCMT070208-PSS	●	●	▲	▲	0.031	0.250	0.094	0.110
		DCMT 32.51 PSS	**DCMT11T304-PSS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		DCMT 32.52 PSS	DCMT11T308-PSS	●	●	▲	▲	0.031	0.375	0.156	0.173
		DCMT 32.53 PSS	DCMT11T312-PSS	●	●	▲	▲	0.047	0.375	0.156	0.173
Finishing to medium cutting	**PS**	**DCMT 21.50.5 PS**	**DCMT070202-PS**	●	●	▲	▲	0.0078	0.250	0.094	0.110
		DCMT 21.51 PS	DCMT070204-PS	●	●	▲	▲	0.016	0.250	0.094	0.110
		DCMT 21.52 PS	DCMT070208-PS	●	●	▲	▲	0.031	0.250	0.094	0.110
		DCMT 32.50.5 PS	**DCMT11T302-PS**	●	●	▲	▲	0.0078	0.375	0.156	0.173
		DCMT 32.51 PS	DCMT11T304-PS	●	●	▲	▲	0.016	0.375	0.156	0.173
		DCMT 32.52 PS	DCMT11T308-PS	●	●	▲	▲	0.031	0.375	0.156	0.173
		DCMT 32.53 PS	DCMT11T312-PS	●	●	▲	▲	0.047	0.375	0.156	0.173
	TM	**DCMT 21.50.5 TM**	**DCMT070202-TM**	●	●			0.0078	0.250	0.094	0.110
		DCMT 21.51 TM	DCMT070204-TM	●	●			0.016	0.250	0.094	0.110
		DCMT 21.52 TM	DCMT070208-TM	●	●			0.031	0.250	0.094	0.110
		DCMT 32.51 TM	**DCMT11T304-TM**	●	●			0.016	0.375	0.156	0.173
		DCMT 32.52 TM	DCMT11T308-TM	●	●			0.031	0.375	0.156	0.173
	TSF	**DCMT 21.50.5 TSF**	**DCMT070202-TSF**	●	●			0.0078	0.250	0.094	0.110
		DCMT 21.51 TSF	DCMT070204-TSF	●	●			0.016	0.250	0.094	0.110
		DCMT 21.52 TSF	DCMT070208-TSF	●	●			0.031	0.250	0.094	0.110
		DCMT 32.51 TSF	**DCMT11T304-TSF**	●	●			0.016	0.375	0.156	0.173
		DCMT 32.52 TSF	DCMT11T308-TSF	●	●			0.031	0.375	0.156	0.173

● : Line-up
● : New product
▲ : To be discontinued

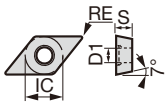
TurnLine - Insert POSITIVE TYPE

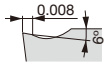
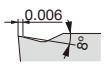
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	**24**	**DCMT 21.51-24**	**DCMT070204-24**	●	●	▲	▲	0.016	0.250	0.094	0.110
		DCMT 21.5**2-24**	DCMT0702**08-24**		●		▲	0.031	0.250	0.094	0.110
		DCMT 32.50.5-24	**DCMT11T302-24**		●		▲	0.0078	0.375	0.156	0.173
		DCMT 32.5**1-24**	DCMT11T3**04-24**	●	●	▲	▲	0.016	0.375	0.156	0.173
		DCMT 32.5**2-24**	DCMT11T3**08-24**	●	●	▲	▲	0.031	0.375	0.156	0.173
	PM	**DCMT 21.51 PM**	**DCMT070204-PM**	●	●	▲	▲	0.016	0.250	0.094	0.110
		DCMT 21.5**2 PM**	DCMT0702**08-PM**	●	●	▲	▲	0.031	0.250	0.094	0.110
		DCMT 32.51 PM	**DCMT11T304-PM**	●	●	▲	▲	0.016	0.375	0.156	0.173
		DCMT 32.5**2 PM**	DCMT11T3**08-PM**	●	●	▲	▲	0.031	0.375	0.156	0.173
		DCMT 32.5**3 PM**	DCMT11T3**12-PM**		●		▲	0.047	0.375	0.156	0.173

● : Line-up
● : New product
▲ : To be discontinued

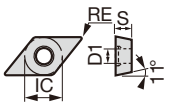
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DP

Rhombic, 55° with hole Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**PS**	**DPMT 21.50.5 PS**	**DPMT070202-PS**		●		▲	0.0078	0.250	0.094	0.110
		**DPMT 21.51 PS**	**DPMT070204-PS**		●		▲	0.016	0.250	0.094	0.110
		DPMT 21.52 PS	**DPMT070208-PS**		●		▲	0.031	0.250	0.094	0.110
											

● : Line-up
● : New product
▲ : To be discontinued

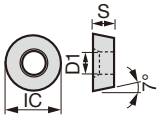
TurnLine - Insert POSITIVE TYPE

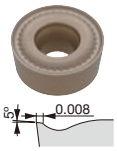
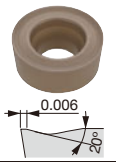
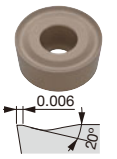
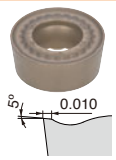
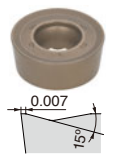
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

RC

Round, with hole Positive 7°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	RS 	-	RCMT10T3M0-RS	●	●	▲	▲	-	0.394	0.156	0.173
		-	RCMT1204M0-RS	●	●	▲	▲	-	0.472	0.188	0.173
		-	RCMT1606M0-RS	●	●	▲	▲	-	0.630	0.250	0.217
		-	RCMT2006M0-RS		●		▲	-	0.787	0.250	0.256
		-	RCMT2507M0-RS		●		▲	-	0.984	0.313	0.299
Heavy cutting	61 	-	RCMT0502M0-61	●	●	▲	▲	-	0.197	0.094	0.098
		-	RCMT0602M0-61	●	●	▲	▲	-	0.236	0.094	0.110
		-	RCMT0803M0-61	●	●	▲	▲	-	0.315	0.125	0.134
	61 	-	RCMM1003M0-61	●	●	▲	▲	-	0.394	0.125	0.142
		-	RCMM1204M0-61	●	●	▲	▲	-	0.472	0.188	0.165
		-	RCMM1606M0-61	●	●	▲	▲	-	0.630	0.250	0.205
		-	RCMM2006M0-61		●		▲	-	0.787	0.250	0.256
		-	RCMM2507M0-61		●		▲	-	0.984	0.313	0.283
Finishing (Low cutting force)	6RS 	-	RCMT1204M0-6RS	●	●	▲	▲	-	0.472	0.188	0.203
Medium cutting	6RM 	-	RCMT1204M0-6RM	●	●	▲	▲	-	0.472	0.188	0.203

● : Line-up
● : New product
▲ : To be discontinued

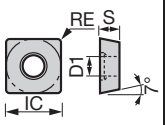
TurnLine - Insert POSITIVE TYPE

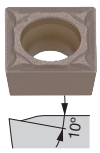
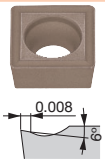
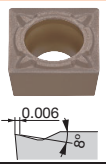
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SC

Square, 90°
with hole
Positive 7°

P	Steel	● ᑕ ✣ ● ᑕ ✣
M	Stainless	● ᑕ
K	Cast iron	● ᑕ ● ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**PS**	**SCMT 32.51 PS**	**SCMT09T304-PS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		**SCMT 32.52 PS**	**SCMT09T308-PS**	●	●	▲	▲	0.031	0.375	0.156	0.173
		SCMT 431 PS	**SCMT120404-PS**	●	●	▲	▲	0.016	0.500	0.188	0.217
		SCMT 432 PS	**SCMT120408-PS**	●	●	▲	▲	0.031	0.500	0.188	0.217
	23	**SCMT 32.52-23**	**SCMT09T308-23**		●		▲	0.031	0.375	0.156	0.173
		**SCMT 432-23**	**SCMT120408-23**		●		▲	0.031	0.500	0.188	0.217
Medium cutting	**24**	**SCMT 2.51.51-24**	**SCMT070204-24**		●		▲	0.016	0.313	0.094	0.134
		**SCMT 32.51-24**	**SCMT09T304-24**		●		▲	0.016	0.375	0.156	0.173
		SCMT 32.52-24	**SCMT09T308-24**	●	●	▲	▲	0.031	0.375	0.156	0.173
		SCMT 431-24	**SCMT120404-24**		●		▲	0.016	0.500	0.188	0.217
		SCMT 432-24	**SCMT120408-24**		●		▲	0.031	0.500	0.188	0.217
	PM	**SCMT 32.51 PM**	**SCMT09T304-PM**	●	●	▲	▲	0.016	0.375	0.156	0.173
		**SCMT 32.52 PM**	**SCMT09T308-PM**	●	●	▲	▲	0.031	0.375	0.156	0.173
		SCMT 432 PM	**SCMT120408-PM**	●	●	▲	▲	0.031	0.500	0.188	0.217
		SCMT 433 PM	**SCMT120412-PM**		●		▲	0.047	0.500	0.188	0.217

● : Line-up
● : New product
▲ : To be discontinued

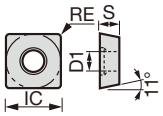
TurnLine - Insert POSITIVE TYPE

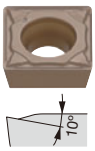
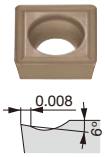
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

SP

Square, 90°
with hole
Positive 11°

P	Steel	●ᑕ ᑕ✠ ●ᑕ ᑕ✠
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**PS**	**SPMT 321 PS**	**SPMT090304-PS**	●	●	▲	▲	0.016	0.375	0.125	0.173
		SPMT 32**2 PS**	SPMT0903**08-PS**	●	●	▲	▲	0.031	0.375	0.125	0.173
		SPMT 431 PS	**SPMT120404-PS**	●	●	▲	▲	0.016	0.500	0.188	0.217
		SPMT 43**2 PS**	SPMT1204**08-PS**	●	●	▲	▲	0.031	0.500	0.188	0.217
	23	**SPMT 321-23**	**SPMT090304-23**		●		▲	0.016	0.375	0.125	0.173
		SPMT 32**2-23**	SPMT0903**08-23**		●		▲	0.031	0.375	0.125	0.173
Medium cutting	**24**	**SPMT 321-24**	**SPMT090304-24**		●		▲	0.016	0.375	0.125	0.173
		SPMT 32**2-24**	SPMT0903**08-24**		●		▲	0.031	0.375	0.125	0.173

● : Line-up
● : New product
▲ : To be discontinued

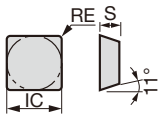
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP

Square, 90°
without hole
Positive 11°

P	Steel	●ᑕ ✣ ●ᑕ ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	23	SPMR 322-23	SPMR090308-23		●		▲	0.031	0.375	0.125	0.173
		SPMR 421-23	SPMR120304-23		●		▲	0.016	0.500	0.125	-
		SPMR 422-23	SPMR120308-23		●		▲	0.031	0.500	0.125	-
											

● : Line-up
● : New product
▲ : To be discontinued

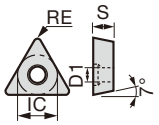
TurnLine - Insert POSITIVE TYPE

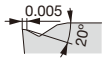
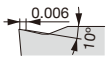
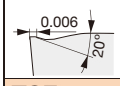
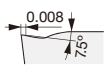
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60°
with hole
Positive 7°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	PSF	TCMT 731 PSF	TCMT090204-PSF	●	●	▲	▲	0.016	0.219	0.094	0.098
		TCMT 21.51 PSF	TCMT110204-PSF	●	●	▲	▲	0.016	0.250	0.094	0.110
		TCMT 221 PSF	TCMT110304-PSF	●	●	▲	▲	0.016	0.250	0.125	0.110
		TCMT 32.51 PSF	TCMT16T304-PSF	●	●	▲	▲	0.016	0.375	0.156	0.173
											
Finishing to light cutting	PSS	TCMT 731 PSS	TCMT090204-PSS	●	●	▲	▲	0.016	0.219	0.094	0.098
		TCMT 732 PSS	TCMT090208-PSS	●	●	▲	▲	0.031	0.219	0.094	0.098
		TCMT 21.51 PSS	TCMT110204-PSS	●	●	▲	▲	0.016	0.250	0.094	0.110
		TCMT 21.52 PSS	TCMT110208-PSS	●	●	▲	▲	0.031	0.250	0.094	0.110
		TCMT 221 PSS	TCMT110304-PSS	●	●	▲	▲	0.016	0.250	0.125	0.110
		TCMT 222 PSS	TCMT110308-PSS	●	●	▲	▲	0.031	0.250	0.125	0.110
		TCMT 32.51 PSS	TCMT16T304-PSS	●	●	▲	▲	0.016	0.375	0.156	0.173
		TCMT 32.52 PSS	TCMT16T308-PSS	●	●	▲	▲	0.031	0.375	0.156	0.173
		TCMT 32.53 PSS	TCMT16T312-PSS	●	●	▲	▲	0.047	0.375	0.156	0.173
Finishing to medium cutting	PS	TCMT 21.50.5 PS	TCMT110202-PS	●	●	▲	▲	0.0078	0.250	0.094	0.110
		TCMT 21.51 PS	TCMT110204-PS	●	●	▲	▲	0.016	0.250	0.094	0.110
		TCMT 21.52 PS	TCMT110208-PS	●	●	▲	▲	0.031	0.250	0.094	0.110
		TCMT 220.5 PS	TCMT110302-PS	●	●	▲	▲	0.0078	0.250	0.125	0.110
		TCMT 221 PS	TCMT110304-PS	●	●	▲	▲	0.016	0.250	0.125	0.110
		TCMT 222 PS	TCMT110308-PS	●	●	▲	▲	0.031	0.250	0.125	0.110
		TCMT 32.50.5 PS	TCMT16T302-PS	●	●	▲	▲	0.0078	0.375	0.156	0.173
		TCMT 32.51 PS	TCMT16T304-PS	●	●	▲	▲	0.016	0.375	0.156	0.173
		TCMT 32.52 PS	TCMT16T308-PS	●	●	▲	▲	0.031	0.375	0.156	0.173
	TM	TCMT 21.51 TM	TCMT110204-TM	●	●			0.016	0.250	0.094	0.110
		TCMT 21.52 TM	TCMT110208-TM	●	●			0.031	0.250	0.094	0.110
		TCMT 32.51 TM	TCMT16T304-TM	●	●			0.016	0.375	0.156	0.173
		TCMT 32.52 TM	TCMT16T308-TM	●	●			0.031	0.375	0.156	0.173
											
	TSF	TCMT 21.51 TSF	TCMT110204-TSF	●	●			0.016	0.250	0.094	0.110
		TCMT 21.52 TSF	TCMT110208-TSF	●	●			0.031	0.250	0.094	0.110
		TCMT 32.51 TSF	TCMT16T304-TSF	●	●			0.016	0.375	0.156	0.173
		TCMT 32.52 TSF	TCMT16T308-TSF	●	●			0.031	0.375	0.156	0.173
											

● : Line-up
● : New product
▲ : To be discontinued

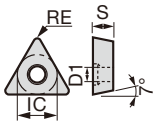
TurnLine - Insert POSITIVE TYPE

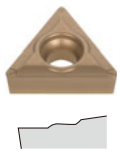
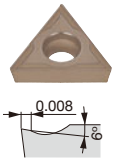
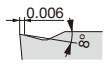
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60°
with hole
Positive 7°

P	Steel	●◐ ◐✣ ●◐ ◐✣
M	Stainless	●◐
K	Cast iron	●◐ ●◐
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**23**	**TCMT 731-23**	**TCMT090204-23**		●		▲	0.016	0.219	0.094	0.098
		**TCMT 32.52-23**	**TCMT16T308-23**		●		▲	0.031	0.375	0.156	0.173
Medium cutting	**24**	**TCMT 731-24**	**TCMT090204-24**	●	●	▲	▲	0.016	0.219	0.094	0.098
		**TCMT 21.51-24**	**TCMT110204-24**	●	●	▲	▲	0.016	0.250	0.094	0.110
		TCMT 21.52-24	**TCMT110208-24**		●		▲	0.031	0.250	0.094	0.110
		TCMT 32.51-24	**TCMT16T304-24**	●	●	▲	▲	0.016	0.375	0.156	0.173
		TCMT 32.52-24	**TCMT16T308-24**	●	●	▲	▲	0.031	0.375	0.156	0.173
	PM	**TCMT 21.51 PM**	**TCMT110204-PM**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**TCMT 21.52 PM**	**TCMT110208-PM**	●	●	▲	▲	0.031	0.250	0.094	0.110
		TCMT 32.51 PM	**TCMT16T304-PM**	●	●	▲	▲	0.016	0.375	0.156	0.173
		TCMT 32.52 PM	**TCMT16T308-PM**	●	●	▲	▲	0.031	0.375	0.156	0.173
		**TCMT 32.53 PM**	**TCMT16T312-PM**	●	●	▲	▲	0.047	0.375	0.156	0.173

● : Line-up
● : New product
▲ : To be discontinued

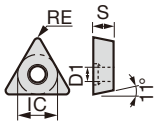
TurnLine - Insert POSITIVE TYPE

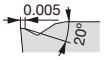
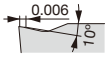
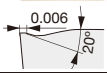
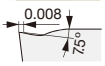
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60°
with hole
Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	**PSF**	**TPMT 731 PSF**	**TPMT090204-PSF**	●	●	▲	▲	0.016	0.219	0.094	0.098
		**TPMT 21.51 PSF**	**TPMT110204-PSF**	●	●	▲	▲	0.016	0.250	0.094	0.110
		TPMT 221 PSF	**TPMT110304-PSF**	●	●	▲	▲	0.016	0.250	0.125	0.134
		TPMT 2.521 PSF	**TPMT130304-PSF**	●	●	▲	▲	0.016	0.313	0.125	0.134
		**TPMT 32.51 PSF**	**TPMT16T304-PSF**	●	●	▲	▲	0.016	0.375	0.156	0.173
Finishing to light cutting	**PSS**	**TPMT 731 PSS**	**TPMT090204-PSS**	●	●	▲	▲	0.016	0.219	0.094	0.098
		TPMT 732 PSS	**TPMT090208-PSS**	●	●	▲	▲	0.031	0.219	0.094	0.098
		TPMT 21.51 PSS	**TPMT110204-PSS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		**TPMT 21.52 PSS**	**TPMT110208-PSS**	●	●	▲	▲	0.031	0.250	0.094	0.110
		TPMT 221 PSS	**TPMT110304-PSS**	●	●	▲	▲	0.016	0.250	0.125	0.134
		TPMT 222 PSS	**TPMT110308-PSS**	●	●	▲	▲	0.031	0.250	0.125	0.134
		TPMT 2.521 PSS	**TPMT130304-PSS**	●	●	▲	▲	0.016	0.313	0.125	0.134
		**TPMT 2.522 PSS**	**TPMT130308-PSS**	●	●	▲	▲	0.031	0.313	0.125	0.134
		TPMT 32.51 PSS	**TPMT16T304-PSS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		TPMT 32.52 PSS	**TPMT16T308-PSS**	●	●	▲	▲	0.031	0.375	0.156	0.173
Finishing to medium cutting	**PS**	**TPMT 730.5 PS**	**TPMT090202-PS**	●	●	▲	▲	0.0078	0.219	0.094	0.098
		TPMT 731 PS	**TPMT090204-PS**	●	●	▲	▲	0.016	0.219	0.094	0.098
		TPMT 732 PS	**TPMT090208-PS**	●	●	▲	▲	0.031	0.219	0.094	0.098
		TPMT 21.50.5 PS	**TPMT110202-PS**	●	●	▲	▲	0.0078	0.250	0.094	0.110
		TPMT 21.51 PS	**TPMT110204-PS**	●	●	▲	▲	0.016	0.250	0.094	0.110
		TPMT 21.52 PS	**TPMT110208-PS**	●	●	▲	▲	0.031	0.250	0.094	0.110
		**TPMT 221 PS**	**TPMT110304-PS**	●	●	▲	▲	0.016	0.250	0.125	0.134
		TPMT 222 PS	**TPMT110308-PS**	●	●	▲	▲	0.031	0.250	0.125	0.134
		TPMT 2.520.5 PS	**TPMT130302-PS**	●	●	▲	▲	0.0078	0.313	0.125	0.134
		**TPMT 2.521 PS**	**TPMT130304-PS**	●	●	▲	▲	0.016	0.313	0.125	0.134
		TPMT 2.522 PS	**TPMT130308-PS**	●	●	▲	▲	0.031	0.313	0.125	0.134
		TPMT 32.51 PS	**TPMT16T304-PS**	●	●	▲	▲	0.016	0.375	0.156	0.173
		TPMT 32.52 PS	**TPMT16T308-PS**	●	●	▲	▲	0.031	0.375	0.156	0.173
	TM	**TPMT 21.51 TM**	**TPMT110204-TM**	●	●			0.016	0.250	0.094	0.110
		**TPMT 21.52 TM**	**TPMT110208-TM**	●	●			0.031	0.250	0.094	0.110
		TPMT 221 TM	**TPMT110304-TM**	●	●			0.016	0.250	0.125	0.134
		TPMT 222 TM	**TPMT110308-TM**	●	●			0.031	0.250	0.125	0.134
		**TPMT 32.51 TM**	**TPMT16T304-TM**	●	●			0.016	0.375	0.156	0.173
		TPMT 32.52 TM	**TPMT16T308-TM**	●	●			0.031	0.375	0.156	0.173
	TSF	**TPMT 21.51 TSF**	**TPMT110204-TSF**	●	●			0.016	0.250	0.094	0.110
		**TPMT 21.52 TSF**	**TPMT110208-TSF**	●	●			0.031	0.250	0.094	0.110
		TPMT 221 TSF	**TPMT110304-TSF**	●	●			0.016	0.250	0.125	0.134
		TPMT 222 TSF	**TPMT110308-TSF**	●	●			0.031	0.250	0.125	0.134
		**TPMT 32.51 TSF**	**TPMT16T304-TSF**	●	●			0.016	0.375	0.156	0.173
		TPMT 32.52 TSF	**TPMT16T308-TSF**	●	●			0.031	0.375	0.156	0.173

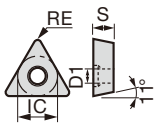
TurnLine - Insert POSITIVE TYPE

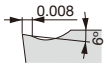
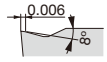
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	23	TPMT 731-23	TPMT090204-23		●		▲	0.016	0.219	0.094	0.098
		TPMT 21.51-23	TPMT110204-23		●		▲	0.016	0.250	0.094	0.110
		TPMT 2.521-23	TPMT130304-23		●		▲	0.016	0.313	0.125	0.134
		TPMT 2.522-23	TPMT130308-23		●		▲	0.031	0.313	0.125	0.134
		TPMT 32.52-23	TPMT16T308-23		●		▲	0.031	0.375	0.156	0.173
Medium cutting	24	TPMT 731-24	TPMT090204-24		●		▲	0.016	0.219	0.094	0.098
		TPMT 21.51-24	TPMT110204-24		●		▲	0.016	0.250	0.094	0.110
		TPMT 2.521-24	TPMT130304-24		●		▲	0.016	0.313	0.125	0.134
		TPMT 2.522-24	TPMT130308-24		●		▲	0.031	0.313	0.125	0.134
		TPMT 32.51-24	TPMT16T304-24		●		▲	0.016	0.375	0.156	0.173
		TPMT 32.52-24	TPMT16T308-24		●		▲	0.031	0.375	0.156	0.173
	PM	TPMT 21.51 PM	TPMT110204-PM	●	●	▲	▲	0.016	0.250	0.094	0.110
		TPMT 21.52 PM	TPMT110208-PM	●	●	▲	▲	0.031	0.250	0.094	0.110
		TPMT 221 PM	TPMT110304-PM	●	●	▲	▲	0.016	0.250	0.125	0.134
		TPMT 222 PM	TPMT110308-PM	●	●	▲	▲	0.031	0.250	0.125	0.134
		TPMT 2.521 PM	TPMT130304-PM		●		▲	0.016	0.313	0.125	0.134
		TPMT 2.522 PM	TPMT130308-PM		●		▲	0.031	0.313	0.125	0.134
		TPMT 32.51 PM	TPMT16T304-PM		●		▲	0.016	0.375	0.156	0.173
		TPMT 32.52 PM	TPMT16T308-PM		●		▲	0.031	0.375	0.156	0.173
		TPMT 32.53 PM	TPMT16T312-PM		●		▲	0.047	0.375	0.156	0.173

● : Line-up
● : New product
▲ : To be discontinued

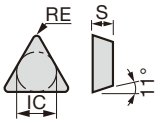
TurnLine - Insert POSITIVE TYPE

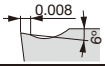
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TP

Triangular, 60°
without hole
Positive 11°

P	Steel	●ᑕ ᑕ✠ ●ᑕ ᑕ✠
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing to medium cutting	**PS**	**TPMR 221 PS**	**TPMR110304-PS**		●		▲	0.016	0.250	0.125	-
		TPMR 222 PS	TPMR110308-PS		●		▲	0.031	0.250	0.125	-
		TPMR 321 PS	**TPMR160304-PS**		●		▲	0.016	0.375	0.125	-
		TPMR 322 PS	TPMR160308-PS		●		▲	0.031	0.375	0.125	-
											
	23	**TPMR 221-23**	**TPMR110304-23**	●	●	▲	▲	0.016	0.250	0.125	-
		TPMR 222-23	TPMR110308-23		●		▲	0.031	0.250	0.125	-
		TPMR 321-23	**TPMR160304-23**	●	●	▲	▲	0.016	0.375	0.125	-
		TPMR 322-23	TPMR160308-23		●		▲	0.031	0.375	0.125	-
											
Medium cutting	**24**	**TPMR 221-24**	**TPMR110304-24**		●		▲	0.016	0.250	0.125	-
		TPMR 222-24	TPMR110308-24		●		▲	0.031	0.250	0.125	-
		TPMR 321-24	**TPMR160304-24**	●	●	▲	▲	0.016	0.375	0.125	-
		TPMR 322-24	TPMR160308-24	●	●	▲	▲	0.031	0.375	0.125	-
											

● : Line-up
● : New product
▲ : To be discontinued

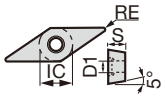
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB

Rhombic, 35°
with hole
Positive 5°

P	Steel	●ᑕ ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	PSF	VBMT 221 PSF	VBMT110304-PSF	●	●	▲	▲	0.016	0.250	0.125	0.110
		VBMT 331 PSF	VBMT160404-PSF	●	●	▲	▲	0.016	0.375	0.188	0.173
	PF	VBMT 332 PF	VBMT160408-PF		●		▲	0.031	0.375	0.188	0.173
Finishing to light cutting	PSS	VBMT 221 PSS	VBMT110304-PSS	●	●	▲	▲	0.016	0.250	0.125	0.110
		VBMT 222 PSS	VBMT110308-PSS	●	●	▲	▲	0.031	0.250	0.125	0.110
		VBMT 331 PSS	VBMT160404-PSS	●	●	▲	▲	0.016	0.375	0.188	0.173
		VBMT 332 PSS	VBMT160408-PSS	●	●	▲	▲	0.031	0.375	0.188	0.173
		VBMT 333 PSS	VBMT160412-PSS	●	●	▲	▲	0.047	0.375	0.188	0.173
Finishing to medium cutting	PS	VBMT 220.5 PS	VBMT110302-PS	●	●	▲	▲	0.0078	0.250	0.125	0.110
		VBMT 221 PS	VBMT110304-PS	●	●	▲	▲	0.016	0.250	0.125	0.110
		VBMT 222 PS	VBMT110308-PS	●	●	▲	▲	0.031	0.250	0.125	0.110
		VBMT 330.5 PS	VBMT160402-PS	●	●	▲	▲	0.0078	0.375	0.188	0.173
		VBMT 331 PS	VBMT160404-PS	●	●	▲	▲	0.016	0.375	0.188	0.173
		VBMT 332 PS	VBMT160408-PS	●	●	▲	▲	0.031	0.375	0.188	0.173
	TM	VBMT 220.5 TM	VBMT110302-TM	●	●			0.0078	0.250	0.125	0.110
		VBMT 221 TM	VBMT110304-TM	●	●			0.016	0.250	0.125	0.110
		VBMT 222 TM	VBMT110308-TM	●	●			0.031	0.250	0.125	0.110
		VBMT 331 TM	VBMT160404-TM	●	●			0.016	0.375	0.188	0.173
		VBMT 332 TM	VBMT160408-TM	●	●			0.031	0.375	0.188	0.173
	TSF	VBMT 220.5 TSF	VBMT110302-TSF	●	●			0.0078	0.250	0.125	0.110
		VBMT 221 TSF	VBMT110304-TSF	●	●			0.016	0.250	0.125	0.110
		VBMT 222 TSF	VBMT110308-TSF	●	●			0.031	0.250	0.125	0.110
		VBMT 331 TSF	VBMT160404-TSF	●	●			0.016	0.375	0.188	0.173
		VBMT 332 TSF	VBMT160408-TSF	●	●			0.031	0.375	0.188	0.173

● : Line-up
● : New product
▲ : To be discontinued

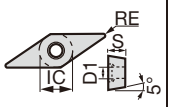
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

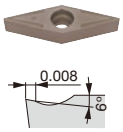
VB

Rhombic, 35°
with hole
Positive 5°

P	Steel	●ᑕ ᑕ✠ ●ᑕ ᑕ✠
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Medium cutting	24	VBMT 331-24	VBMT160404-24	●	●	▲	▲	0.016	0.375	0.188	0.173
		VBMT 332-24	VBMT160408-24	●	●	▲	▲	0.031	0.375	0.188	0.173



● : Line-up
● : New product
▲ : To be discontinued

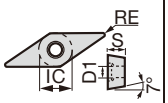
TurnLine - Insert POSITIVE TYPE

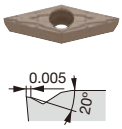
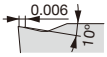
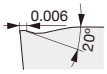
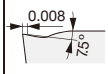
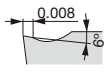
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

VC

Rhombic, 35°
with hole
Positive 7°

P	Steel	●ᑕ ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (In)	IC (In)	S (In)	D1 (In)
Finishing	**PSF**	**VCMT 631 PSF**	**VCMT080204-PSF**	●	●	▲	▲	0.016	0.187	0.094	0.091
		**VCMT 221 PSF**	**VCMT110304-PSF**	●	●	▲	▲	0.016	0.250	0.125	0.110
		VCMT 331 PSF	**VCMT160404-PSF**	●	●	▲	▲	0.016	0.375	0.188	0.173
		VCMT 332 PSF	**VCMT160408-PSF**	●	●	▲	▲	0.031	0.375	0.188	0.173
Finishing to light cutting	**PSS**	**VCMT 221 PSS**	**VCMT110304-PSS**	●	●	▲	▲	0.016	0.250	0.125	0.110
		**VCMT 222 PSS**	**VCMT110308-PSS**	●	●	▲	▲	0.031	0.250	0.125	0.110
		VCMT 331 PSS	**VCMT160404-PSS**	●	●	▲	▲	0.016	0.375	0.188	0.173
		VCMT 332 PSS	**VCMT160408-PSS**	●	●	▲	▲	0.031	0.375	0.188	0.173
											
Finishing to medium cutting	**PS**	**VCMT 220.5 PS**	**VCMT110302-PS**	●	●	▲	▲	0.0078	0.250	0.125	0.110
		**VCMT 221 PS**	**VCMT110304-PS**	●	●	▲	▲	0.016	0.250	0.125	0.110
		VCMT 222 PS	**VCMT110308-PS**	●	●	▲	▲	0.031	0.250	0.125	0.110
		VCMT 331 PS	**VCMT160404-PS**	●	●	▲	▲	0.016	0.375	0.188	0.173
		**VCMT 332 PS**	**VCMT160408-PS**	●	●	▲	▲	0.031	0.375	0.188	0.173
	TM	**VCMT 331 TM**	**VCMT160404-TM**	●	●			0.016	0.375	0.188	0.173
		**VCMT 332 TM**	**VCMT160408-TM**	●	●			0.031	0.375	0.188	0.173
											
	TSF	**VCMT 331 TSF**	**VCMT160404-TSF**	●	●			0.016	0.375	0.188	0.173
		**VCMT 332 TSF**	**VCMT160408-TSF**	●	●			0.031	0.375	0.188	0.173
											
Medium cutting	**24**	**VCMT 331-24**	**VCMT160404-24**	●	●	▲	▲	0.016	0.375	0.188	0.173
		**VCMT 332-24**	**VCMT160408-24**	●	●	▲	▲	0.031	0.375	0.188	0.173
											

● : Line-up
● : New product
▲ : To be discontinued

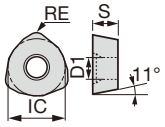
TurnLine - Insert POSITIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

WP

Trigon, 80°
with hole
Positive 11°

P	Steel	●ᑕ ᑕ✣ ●ᑕ ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ ●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (mm)	IC (mm)	S (mm)	D1 (mm)
Heavy cutting	**ML**	-	**WPMT090725ZPR-ML**	●	●	▲	▲	-	15	7	5.5
		-	**WPMT090725ZPL-ML**	●	●	▲	▲	-	15	7	5.5

● : Line-up
● : New product
▲ : To be discontinued

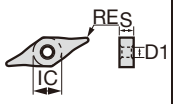
TurnLine - Insert POSITIVE TYPE

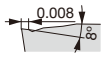
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

YW

Rhombic, 25°
with hole
Positive 7°

P	Steel	●◐ ◐✣ ●◐ ◐✣
M	Stainless	●◐
K	Cast iron	●◐ ●◐
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



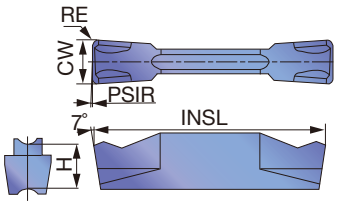
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	RE (mm)	IC (mm)	S (mm)	D1 (mm)
Finishing to medium cutting	ZF	-	YWMT11T202-ZF		●		▲	0.2	4.679	2.78	2.3
		-	YWMT11T204-ZF		●		▲	0.4	4.679	2.78	2.3
		-	YWMT16T302-ZF		●		▲	0.2	7.018	3.97	2.86
		-	YWMT16T304-ZF		●		▲	0.4	7.018	3.97	2.86
		-	YWMT16T308-ZF		●		▲	0.8	7.018	3.97	2.86
	ZM	-	YWMT11T204-ZM		●		▲	0.4	4.679	2.78	2.3
		-	YWMT16T304-ZM		●		▲	0.4	7.018	3.97	2.86
		-	YWMT16T308-ZM		●		▲	0.8	7.018	3.97	2.86
											

● : Line-up
● : New product
▲ : To be discontinued

TurnLine -
Inserts for grooving and parting off

DGM

External grooving and parting off, 2 corner

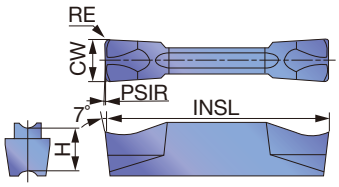


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)	PSIRR/L (Inch)
				T9225	T9125			
DGM2-020	2	0.079	0.008	●	▲	0.787	0.197	0
DGM3-020	3	0.118	0.008	●	▲	0.787	0.197	0
DGM4-030	4	0.157	0.012	●	▲	0.787	0.197	0
DGM5-030	5	0.197	0.012	●	▲	0.984	0.217	0
DGM6-030	6	0.236	0.012	●	▲	0.984	0.217	0
DGM8-040	8	0.315	0.016	●	▲	1.181	0.264	0

● : New product
▲: To be discontinued

DGS

External grooving and parting off, 2 corner

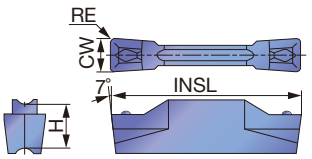


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)	PSIRR/L (Inch)
				T9225	T9125			
DGS2-020	2	0.079	0.008	●	▲	0.787	0.197	0
DGS3-020	3	0.118	0.008	●	▲	0.787	0.197	0
DGS4-030	4	0.157	0.012	●	▲	0.787	0.197	0
DGS5-030	5	0.197	0.012	●	▲	0.984	0.217	0
DGS6-030	6	0.236	0.012	●	▲	0.984	0.217	0

● : New product
▲: To be discontinued

DTE

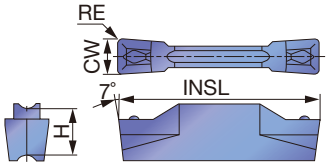
External, grooving and turning



Designation	Insert seat size	CW±0.02 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTE265-015	3	0.104	0.006	●	▲	0.787	0.197
DTE300-020	3	0.118	0.008	●	▲	0.787	0.197
DTE300-040	3	0.118	0.016	●	▲	0.787	0.197
DTE315-015	3	0.124	0.006	●	▲	0.787	0.197
DTE400-040	4	0.157	0.016	●	▲	0.787	0.197
DTE400-080	4	0.157	0.031	●	▲	0.787	0.197
DTE415-015	4	0.163	0.006	●	▲	0.787	0.197
DTE478-055	5	0.188	0.022	●	▲	0.984	0.217
DTE500-040	5	0.197	0.016	●	▲	0.984	0.217
DTE500-080	5	0.197	0.031	●	▲	0.984	0.217
DTE515-015	5	0.203	0.006	●	▲	0.984	0.217
DTE600-080	6	0.236	0.031	●	▲	0.984	0.217
DTE600-120	6	0.236	0.047	●	▲	0.984	0.217
DTE800-080	8	0.315	0.031	●	▲	1.181	0.264
DTE800-120	8	0.315	0.047	●	▲	1.181	0.264

● : New product
▲: To be discontinued

External, grooving and turning

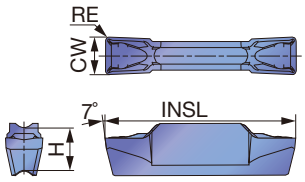


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTE3-040	3	0.118	0.016	●	▲	0.787	0.197
DTE4-040	4	0.157	0.016	●	▲	0.787	0.197

● : New product
▲: To be discontinued

DTX

External, internal, face grooving and traversing

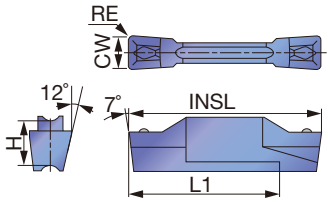


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTX3-030	3	0.118	0.012	●	▲	0.787	0.197
DTX4-040	4	0.157	0.016	●	▲	0.787	0.197
DTX5-040	5	0.197	0.016	●	▲	0.984	0.217

● : New product
▲: To be discontinued

DTF

Face grooving and traversing

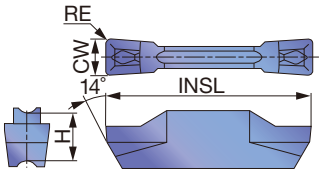


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated				INSL (Inch)	H (Inch)	L1 (Inch)
				T9225		T9125				
				R	L	R	L			
DTF3-040-R/L	3	0.118	0.016	●	●	▲	▲	0.787	0.197	0.630
DTF4-040-R/L	4	0.157	0.016	●	●	▲	▲	0.787	0.197	0.630

● : New product
▲: To be discontinued

DTI

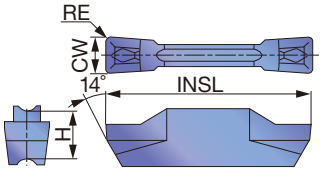
Internal grooving and turning (for high-precision machining)



Designation	Insert seat size	CW±0.02 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTI300-040	3	0.118	0.016	●	▲	0.787	0.197
DTI400-040	4	0.157	0.016	●	▲	0.787	0.197
DTI400-080	4	0.157	0.031	●	▲	0.787	0.197
DTI500-040	5	0.197	0.016	●	▲	0.984	0.217
DTI500-080	5	0.197	0.031	●	▲	0.984	0.217
DTI600-080	6	0.236	0.031	●	▲	0.984	0.217
DTI600-120	6	0.236	0.047	●	▲	0.984	0.217
DTI800-080	8	0.315	0.031	●	▲	1.181	0.264
DTI800-120	8	0.315	0.047	●	▲	1.181	0.264

● : New product
▲: To be discontinued

Internal grooving and turning

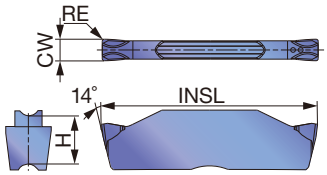


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTI3-040	3	0.118	0.016	●	▲	0.787	0.197
DTI4-040	4	0.157	0.016	●	▲	0.787	0.197

● : New product
▲: To be discontinued

DGIM

Small diameter internal grooving

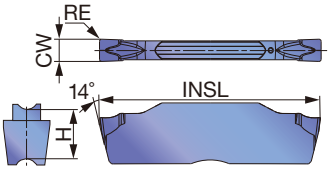


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DGIM2-020	2	0.079	0.008	●	▲	0.787	0.197

●: New product
▲: To be discontinued

DGIS

Small diameter internal grooving

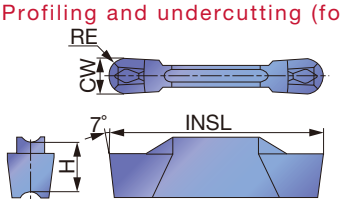


Designation	Insert seat size	*W*±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DGIS2-020	2	0.079	0.008	●	▲	0.787	0.197

●: New product
▲: To be discontinued

DTR

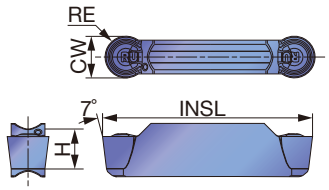
Profiling and undercutting (for high-precision machining)



Designation	Insert seat size	CW±0.02 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTR300-150	3	0.118	0.059	●	▲	0.787	0.197
DTR400-200	4	0.157	0.079	●	▲	0.787	0.197
DTR478-239	5	0.188	0.094	●	▲	0.984	0.217
DTR500-250	5	0.197	0.098	●	▲	0.984	0.217
DTR600-300	6	0.236	0.118	●	▲	0.984	0.217

●: New product
▲: To be discontinued

Profiling and undercutting

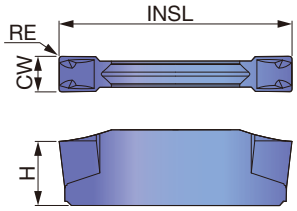


Designation	Insert seat size	CW±0.05 (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
				T9225	T9125		
DTR3-150	3	0.118	0.059	●	▲	0.787	0.197
DTR4-200	4	0.157	0.079	●	▲	0.787	0.197
DTR5-250	5	0.197	0.098	●	▲	0.984	0.217
DTR6-300	6	0.236	0.118	●	▲	0.984	0.217
DTR8-400	8	0.315	0.157	●	▲	1.181	0.264

●: New product
▲: To be discontinued

WGE

For general parting off and grooving

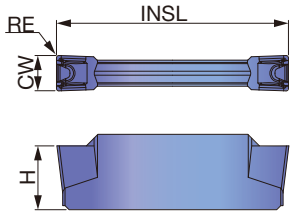


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
WGE20	0.079	0.008	●	▲	0.787	0.185
WGE30	0.118	0.008	●	▲	0.787	0.217
WGE40	0.157	0.008	●	▲	0.984	0.224
WGE50	0.197	0.008	●	▲	0.984	0.232

● : New product
▲: To be discontinued

WGT

Traversing (Grooving and parting off)

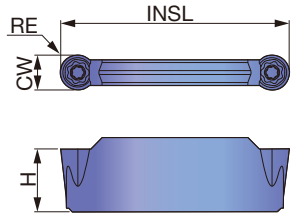


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
WGT30	0.118	0.016	●	▲	0.787	0.217
WGT40	0.157	0.016	●	▲	0.984	0.224
WGT50	0.197	0.016	●	▲	0.984	0.232

● : New product
▲: To be discontinued

WGR

Profiling (Full radius)

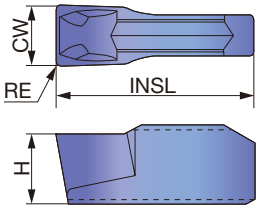


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
WGR30	0.118	0.059	●	▲	0.787	0.217
WGR40	0.157	0.079	●	▲	0.984	0.224

● : New product
▲: To be discontinued

GE

Grooving and parting off

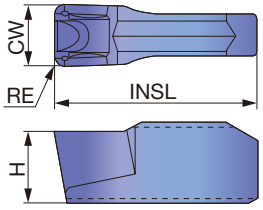


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
GE30	0.118	0.008	●	▲	0.394	0.138
GE40	0.157	0.008	●	▲	0.394	0.157
GE50	0.197	0.008	●	▲	0.472	0.177

● : New product
▲: To be discontinued

GT

Traversing (Grooving and parting off)

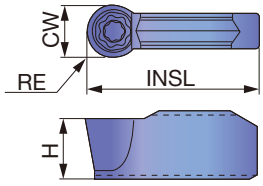


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
GT50	0.197	0.016	●	▲	0.472	0.177

● : New product
▲: To be discontinued

GR

Profiling (Full radius)

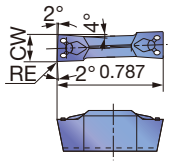


Designation	CW$^{+0.1}_{0}$ (Inch)	RE (Inch)	Coated		INSL (Inch)	H (Inch)
			T9225	T9125		
GR40	4	2.0	●	▲	10	4
GR50	5	2.5	●	▲	12	4.5

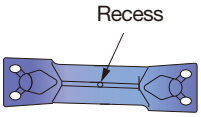
● : New product
▲: To be discontinued

FLEX(R/L)

External, face and internal grooving



Right hand (R) shown.



Left hand inserts are identified with a recessed dot.

Designation	$CW_{\pm 0.05}$ (Inch)	RE (Inch)	Coated			
			T9225		T9125	
			R	L	R	L
FLEX50R/L	0.197	0.016	●	●	▲	▲

●: New product
▲: To be discontinued

Standard cutting conditions

For Negative Inserts

ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (Inch)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	TSF	T9205	0.008 - 0.059	0.003 - 0.016	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
		AS	T9205	0.008 - 0.059	0.003 - 0.016	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
		FW	T9205	0.008 - 0.059	0.003 - 0.016	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
	Medium cutting	TM	T9205	0.04 - 0.197	0.008 - 0.02	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
		AM	T9205	0.059 - 0.177	0.008 - 0.024	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
		SW	T9205	0.02 - 0.079	0.012 - 0.024	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
	Medium to heavy cutting	TH	T9205	0.118 - 0.236	0.012 - 0.024	590 - 1312	590 - 1312	492 - 1148
			T9215			492 - 1312	492 - 1312	394 - 984
			T9225			394 - 984	394 - 984	328 - 820
			T9235			164 - 656	164 - 656	164 - 492
							Stainless steel	
M	Finishing	TSF	T9215	0.008 - 0.059	0.003 - 0.016		328 - 820	
			T9225					
	Medium cutting	TM	T9215	0.04 - 0.197	0.008 - 0.02		459 - 1640	
			T9225					
							Cast iron	
K	Finishing	TSF	T9215	0.008 - 0.059	0.003 - 0.016		328 - 820	
			T9225					
	Medium cutting	TM	T9215	0.04 - 0.197	0.008 - 0.02		328 - 820	
			T9225					

For POMG Inserts

For HD holder (High Depth of Cut)

ISO	Insert	Depth of cut *ap* (inch)	Feed *f* (ipr)	Cutting speed *Vc* (sfm) T9215	T9125	T9225
P	POMG 543 MNW	0.031 - 0.217	0.016 - 0.047	492 - 1312	262 - 591	394 - 984
	POMG 643 MNW	0.039 - 0.276	0.016 - 0.051	492 - 1312	262 - 591	394 - 984

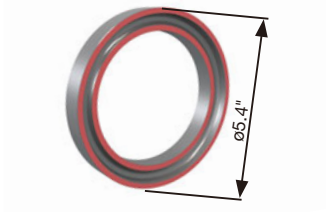
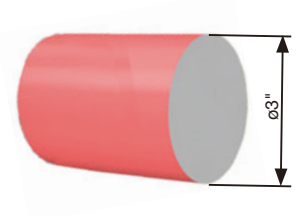
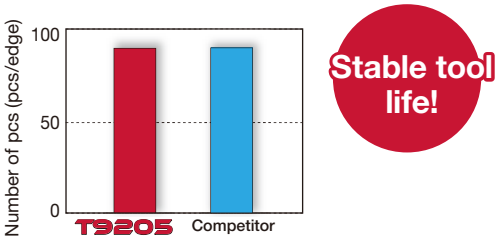
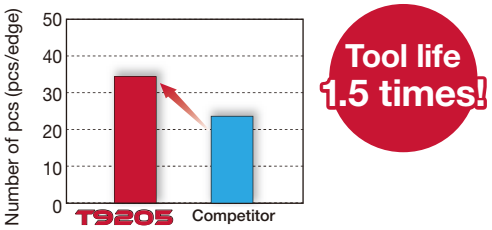
For HF holder (High Feed)

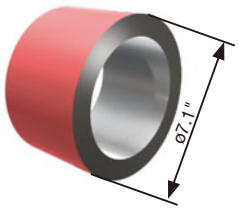
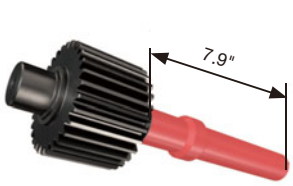
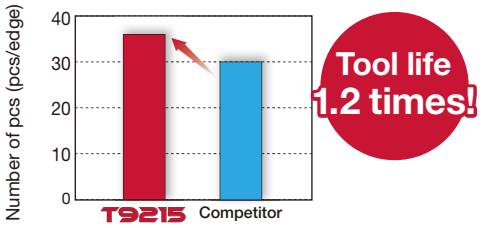
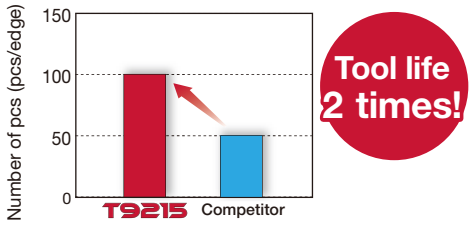
ISO	Insert	Depth of cut *ap* (inch)	Feed *f* (ipr)	Cutting speed *Vc* (sfm) T9215	T9125	T9225
P	POMG 543 MNW	0.039 - 0.098	0.020 - 0.059	492 - 1312	262 - 591	394 - 984
	POMG 643 MNW	0.039 - 0.118	0.020 - 0.079	492 - 1312	262 - 591	394 - 984

For Positive Inserts

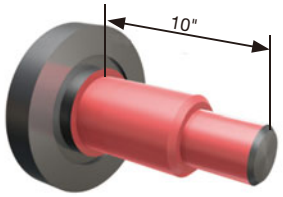
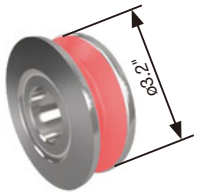
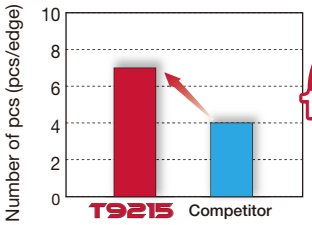
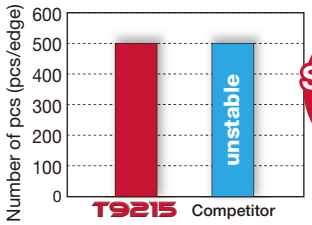
ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (Inch)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	PSF	T9215	0.004 - 0.020	0.002 - 0.012	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
	Medium	TSF	T9215	0.020 - 0.098	0.004 - 0.010	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
		TM	T9215	0.098 - 0.118	0.002 - 0.010	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
	Medium cutting	PS	T9215	0.020 - 0.098	0.003 - 0.012	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
		SW	T9215	0.020 - 0.079	0.006 - 0.016	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
	Medium to heavy cutting	PM	T9215	0.040 - 0.118	0.006 - 0.012	394 - 1148	328 - 1148	262 - 820
			T9225			328 - 984	262 - 984	262 - 820
						Stainless steel		
M	Finishing	PSF	T9215	0.004 - 0.020	0.002 - 0.012	164 - 656		
			T9225					
	Medium	PS	T9215	0.020 - 0.098	0.003 - 0.012	328 - 1148		
			T9225					
						Cast iron		
K	Finishing	PSF	T9215	0.004 - 0.020	0.002 - 0.012	164 - 656		
			T9225					
	Medium	PS	T9215	0.020 - 0.098	0.003 - 0.012	328 - 1148		
			T9225					

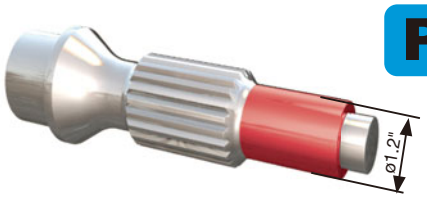
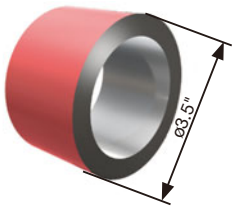
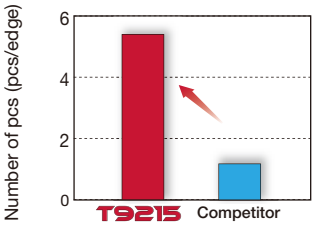
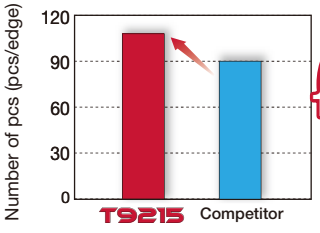
PRACTICAL EXAMPLES

Workpiece type		Automotive part	Machine parts
Insert		DNMG 433 DM	CNMG 432 TM
Grade		**T9205**	**T9205**
Workpiece material		1045	Alloy steel
		 P	 P
Cutting conditions	Cutting speed: *Vc* (sfm)	820	558
	Feed : *f* (ipr)	0.012	0.014 → 0.018
	Depth of cut : *ap* (Inch)	0.039	0.079
	Coolant	Wet	Wet
Results		 Premature insert failures and fractures induced by excessive crater wear development were issues with the conventional grade. T9205 eliminated these issues, providing stability.	 T9205 allowed a higher feed rate to be applied, improving tool life by 1.5x over the conventional grade.

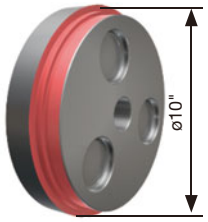
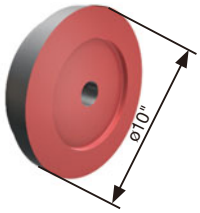
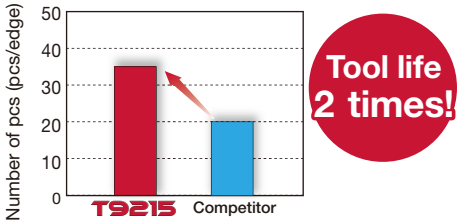
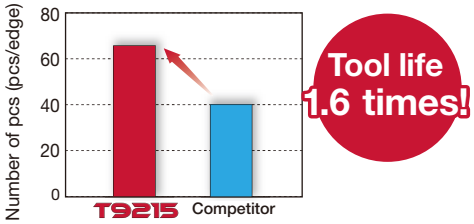
Workpiece type		Carrier	Top shaft
Insert		WNMG0 432 SW	CNMG 432 AM
Grade		**T9215**	**T9215**
Workpiece material		1045	Alloy steel
		 P	 P
Cutting conditions	Cutting speed: *Vc* (sfm)	984	820
	Feed : *f* (ipr)	0.016	0.01 - 0.014
	Depth of cut : *ap* (Inch)	0.039	0.079
	Coolant	Wet	Wet
Results		 Combination of T9215 and the latest wiper series provides a stabler and longer tool life (about 1.2x) compared to the current product.	 T9215 is superior in wear resistance and fracture resistance, providing twice the stable long life as the current product!

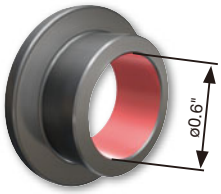
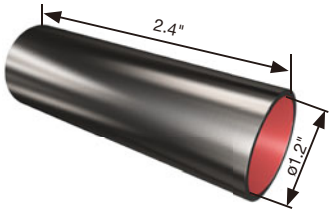
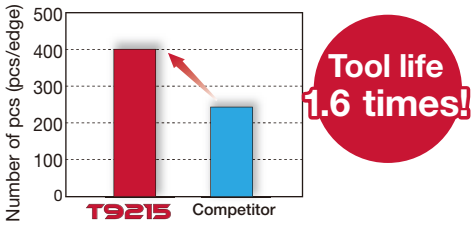
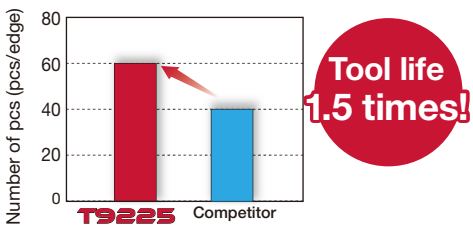
PRACTICAL EXAMPLES

Workpiece type		**Shaft**	**Bearing part**
Insert		CNMG 432 TM	DNMG 432 AM
Grade		**T9215**	**T9215**
Workpiece material		4140	SUJ2 / B1
		 P	 P
Cutting conditions	**Cutting speed: *Vc* (sfm)**	820	820
	Feed : *f* (ipr)	0.012	0.01 - 0.014
	Depth of cut : *ap* (Inch)	0.138	0.01
	Coolant	Wet	Wet
Results		 T9215 has excellent balance between wear resistance and chipping resistance, achieving a stable long life of about 1.7 times that of the current product!	 T9215 decreases the occurrence of sudden breakage and achieves stable processing!

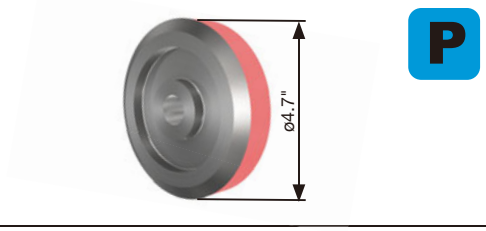
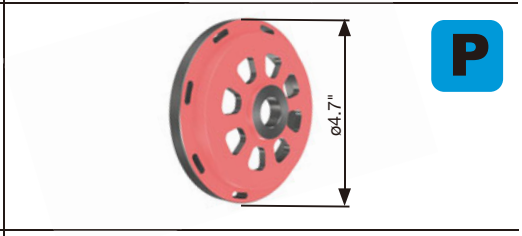
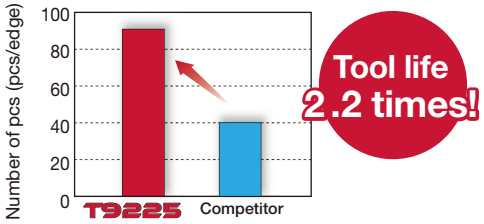
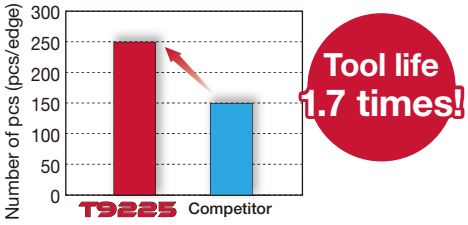
Workpiece type		**Shaft**	**Pipe**
Insert		DNMG 433 TM	DNMG 442 TM
Grade		**T9215**	**T9215**
Workpiece material		4140	SM490
		 P	 P
Cutting conditions	**Cutting speed: *Vc* (sfm)**	459	656
	Feed : *f* (ipr)	0.015	0.014
	Depth of cut : *ap* (Inch)	0.157 x 6 pass	0.118
	Coolant	Wet	Wet
Results		 T9215 demonstrates exceptional wear resistance, combined with the optimization of the tool path, achieves a stable long life of about 5 times that of the current product!	 With exceptional wear resistance and optimization of processing conditions, T9215 achieves about 1.3 times longer tool life than the current product! In addition, we succeeded in greatly shortening machining time!

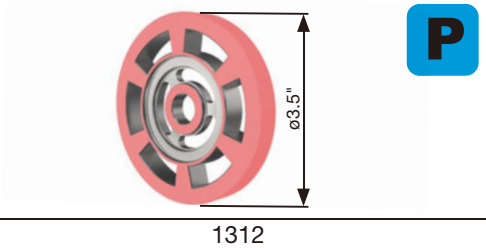
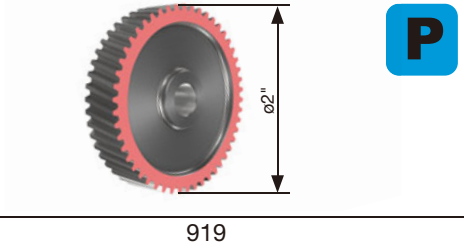
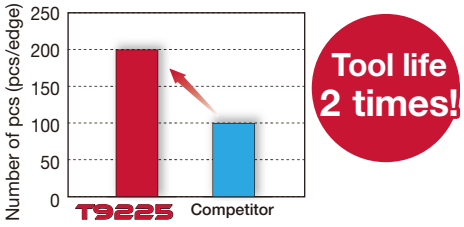
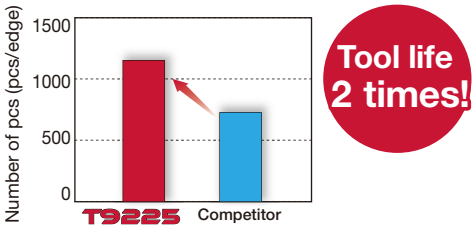
PRACTICAL EXAMPLES

Workpiece type		Automotive part	Automotive part
Insert		WNMG 432 AM	WNMG 432 AM
Grade		**T9215**	**T9215**
Workpiece material		1055	1055
		 P	 P
Cutting conditions	Cutting speed: *Vc* (sfm)	984	984
	Feed : *f* (ipr)	0.01	0.012
	Depth of cut : *ap* (Inch)	0.059	0.039
	Coolant	Wet	Wet
Results		 Our newest grade, T9215, has outstanding wear resistance and extended tool life by 2.0 times.	 Our newest grade, T9215, has outstanding wear resistance and extended tool life by 1.6 times.

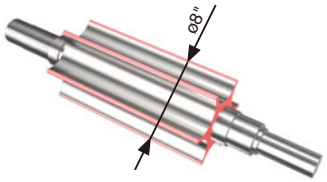
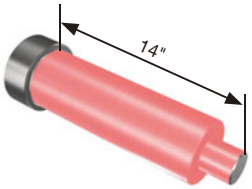
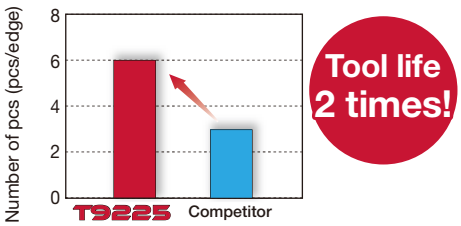
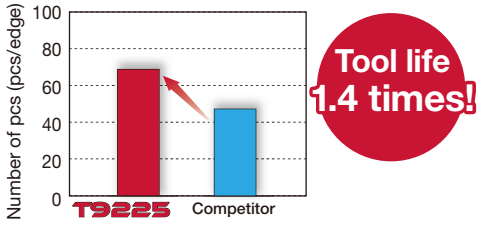
Workpiece type		Machine parts	Machine parts
Insert		CCMT060204-PS	CPMT090308-PS
Grade		**T9215**	**T9225**
Workpiece material		Low Alloy Steel	1020
			
Cutting conditions	Cutting speed: *Vc* (sfm)	492	328
	Feed : *f* (ipr)	0.008	0.008
	Depth of cut : *ap* (Inch)	0.059	0.039
	Coolant	Wet	Wet
Results		 Our newest grade, T9215, has outstanding wear resistance and extended tool life by 1.6 times.	 T9225 provided better wear and fracture resistance and stability over the competitor, improving tool life by 1.5 times.

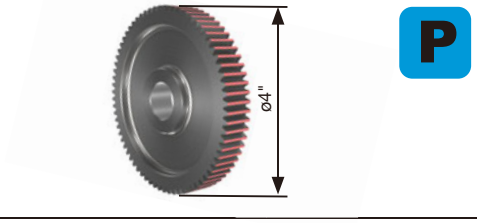
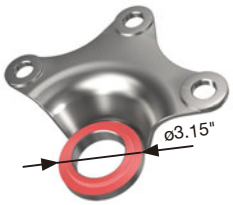
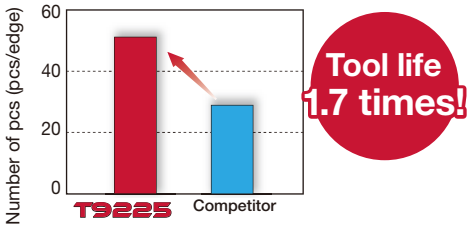
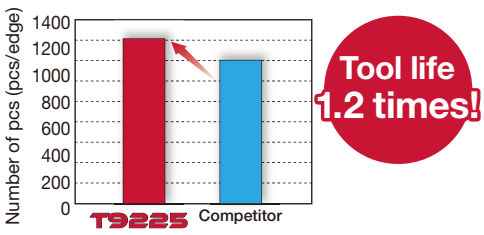
PRACTICAL EXAMPLES

Workpiece type		Pulley parts	Clutch parts
Insert		WNMG 432 TM	WNMG080412-TM
Grade		**T9225**	**T9225**
Workpiece material		Low Alloy Steel	SCM420
			
Cutting conditions	Cutting speed: *Vc* (sfm)	689	722
	Feed : *f* (ipr)	0.01	0.012
	Depth of cut : *ap* (Inch)	0.59	0.039
	Coolant	Wet	Wet
Results		 T9225 provided better wear and fracture resistance and stability over the competitor, improving tool life by 2.2 times.	 T9225 improved tool life by 1.7 times and provided stability over that of the competitor's due to its superior fracture toughness.

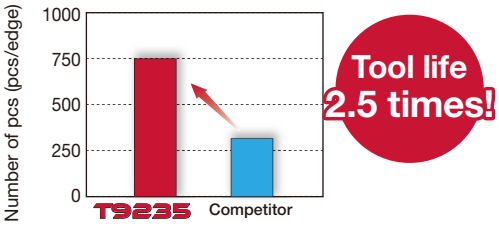
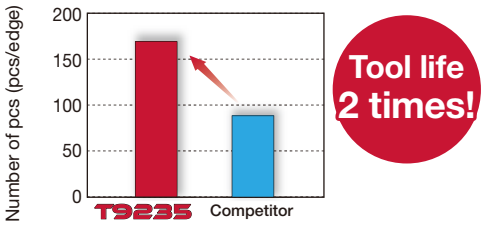
Workpiece type		Rotor parts	Ring gear parts
Insert		WNMG 433 TM	WNMG 432 TM
Grade		**T9225**	**T9225**
Workpiece material		S10C	SCr420
			
Cutting conditions	Cutting speed: *Vc* (sfm)	1312	919
	Feed : *f* (ipr)	0.018	0.010
	Depth of cut : *ap* (Inch)	0.059	0.039
	Coolant	Wet	Wet
Results		 T9225 provided outstanding stability over the competitor due to its superior fracture toughness, doubling tool life.	 T9225 provided better wear and fracture resistance and stability over the competitor, doubling tool life.

PRACTICAL EXAMPLES

Workpiece type		Machine parts	Shaft parts
Insert		CNMG 432 TM	DNMG 432 AM
Grade		**T9225**	**T9225**
Workpiece material		1035	4140
			
Cutting conditions	Cutting speed: *Vc* (sfm)	492	591
	Feed : *f* (ipr)	0.01 - 0.016	0.012
	Depth of cut : *ap* (Inch)	0.02 - 0.059	0.039
	Coolant	Wet	Wet
Results		 T9225 doubled tool life and provided stability over the competitor during heavy interrupted cutting thanks to its superior fracture toughness.	 T9225 provided better wear and fracture resistance and stability over the competitor, improving tool life by 1.4 times.

Workpiece type		Gear parts	Automotive parts
Insert		VNMG 332 TM	CCMT09T304-PS
Grade		**T9225**	**T9225**
Workpiece material		Low Alloy Steel	SCr420H
			
Cutting conditions	Cutting speed: *Vc* (sfm)	984	492
	Feed : *f* (ipr)	0.012	0.008 - 0.012
	Depth of cut : *ap* (Inch)	0.059	0.039 - 0.098
	Coolant	Wet	Wet
Results		 T9225 improved tool life by 1.7 times and provided stability over the competitor's thanks to its superior fracture toughness.	 T9225 provided better stability with improved wear and fracture resistance over the competitor, improving tool life by 1.2 times.

PRACTICAL EXAMPLES

Workpiece type		Hub part	Automotive part
Insert		DNMG 433 TSF	DNMG 433 DM
Grade		**T9235**	**T9235**
Workpiece material		1053	1053
Cutting conditions	Cutting speed: *Vc* (sfm)	722	722
	Feed : *f* (ipr)	0.016	0.016
	Depth of cut : *ap* (Inch)	0.02	0.039
	Coolant	Wet	Wet
Results			

T9235 extended tool life by 2.5 times, while also providing improved tool life stability.

T9235 doubled tool life, in addition to enhanced tool stability.

Check our site and **our App** to get more info!

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TUNGALOY ATLAS

Dr. Carbide Tungaloy

Nov. 2022 (TJ)