TurnLine

T9200 SERIES

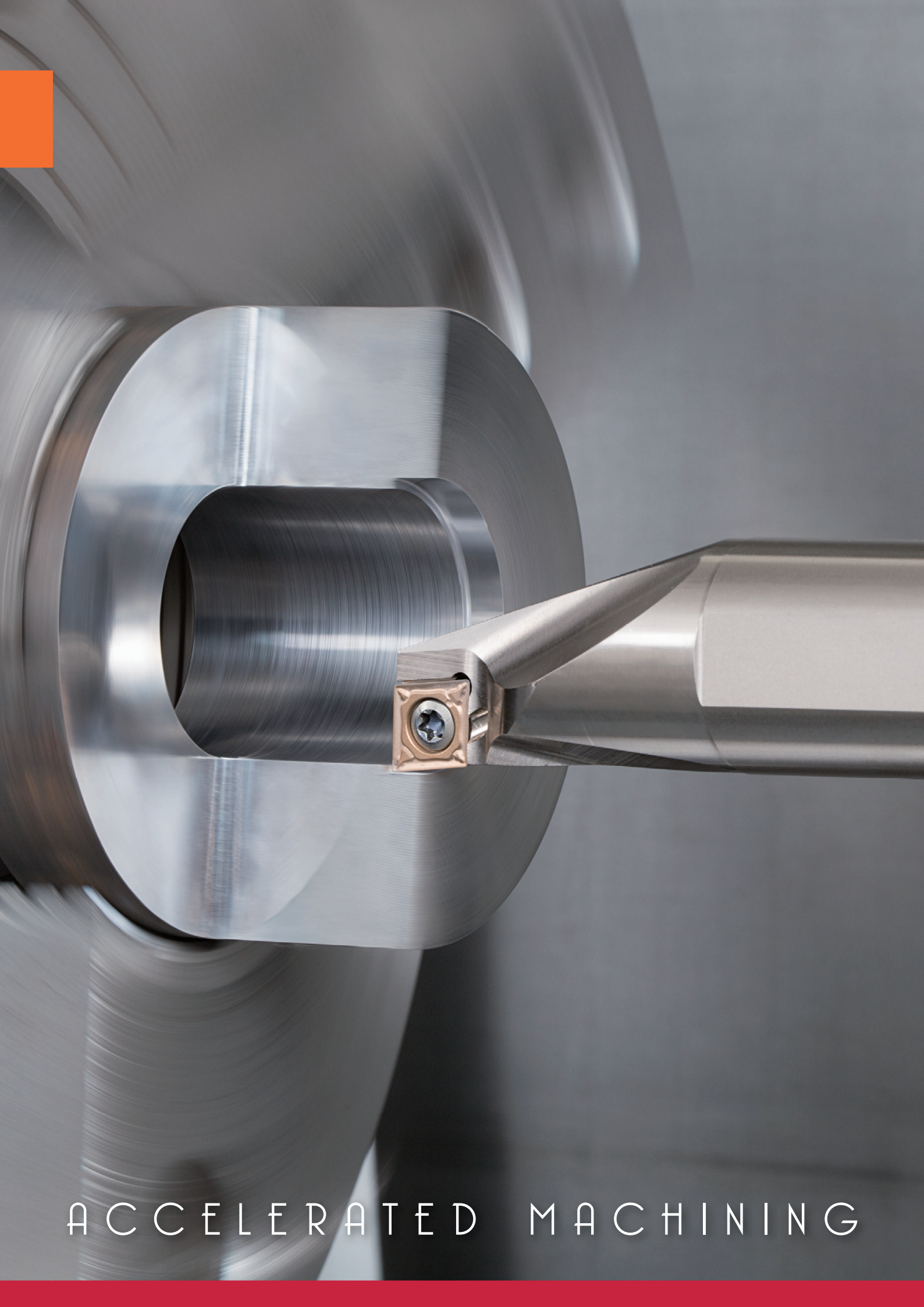
www.tungaloy.com

Tungaloy Report No. 513-G

T9200 series - a new generation of CVD grades for steel turning

INDUSTRY 4.0

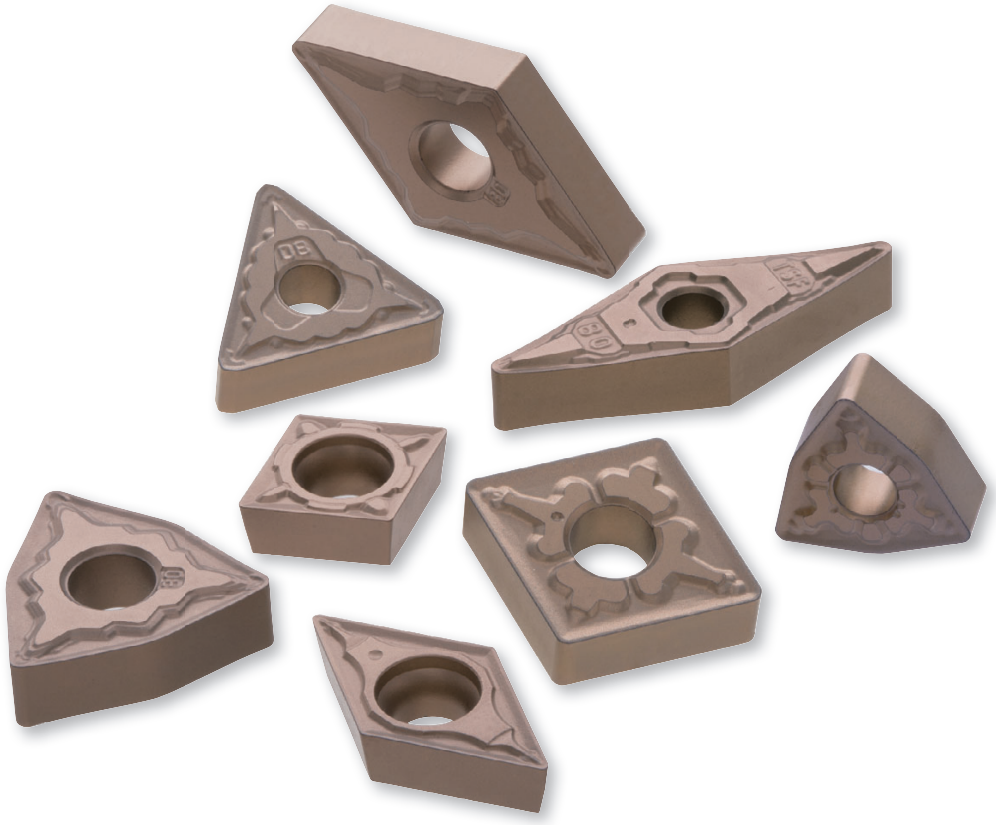
FEED the SPEED!


ACCELERATED MACHINING

TurnLine

T9200 SERIES

TUNGALOY



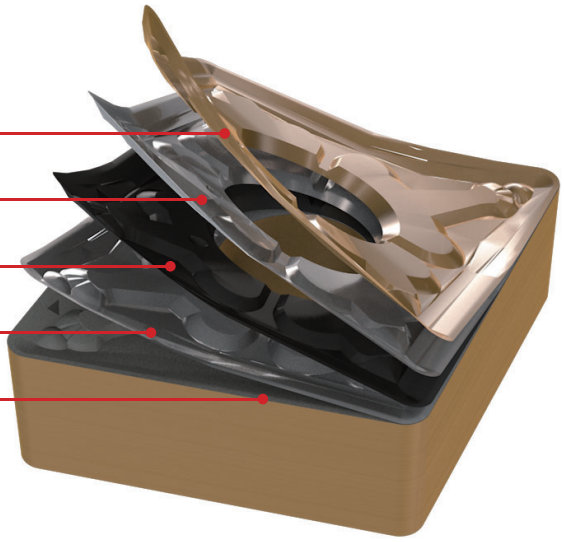
New generation of CVD grades. A complete series for steel turning with outstanding performance, for accelerated machining.

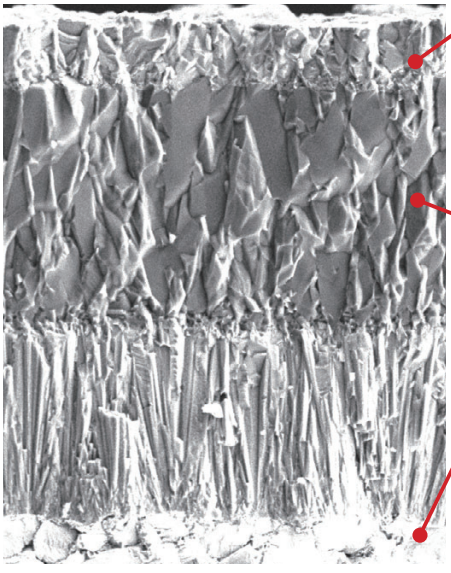
T9200 SERIES
TUNGALOY

The T9200 series now offers T9205 & T9235 and complements the range of Tungaloy New CVD grades generation, for further improve your machining efficiency

PREMIUMTEC
TUNGALOY

A new surface treatment technology is applied, making T9200 series hard to break





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

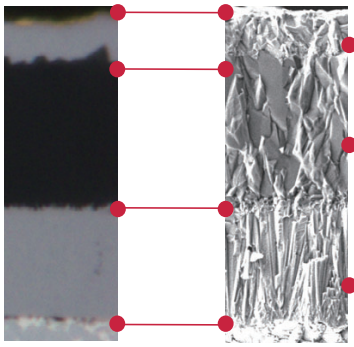
Thick Al_2O_3 layer with excellent resistance to high heat and crater wear, especially effective for high-speed machining.

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

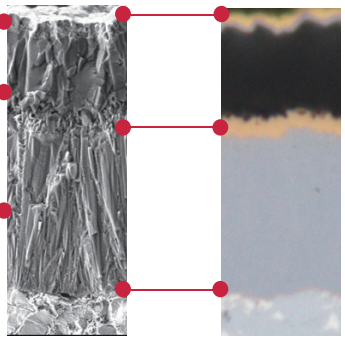


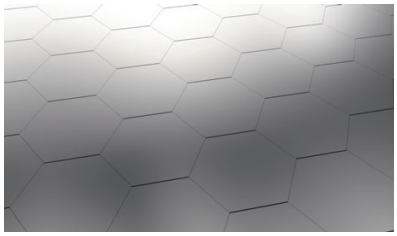
Ti-layer

Al_2O_3

Ti compound

Existing





Highly homogeneous structure of Al_2O_3

Surface image of Al_2O_3

Excellent Flank Wear Resistance

T9200 series Provided Outstanding Flank Wear Resistance!

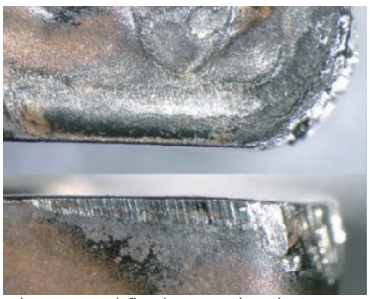
T9200 SERIES

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

Excellent fracture resistance, due to a New improved surface coating treatment

A unique tough coating treatment technology that prevents cracks in operation and provides stable machining.

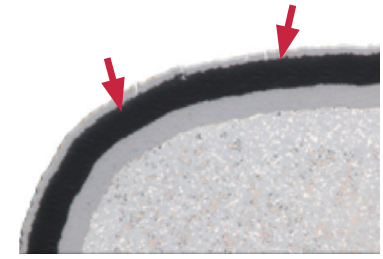
ADVANTAGE of the new technology

Effect of the new improved surface treatment which prolongs insert's tool life

T9200 SERIES Vs. Existing

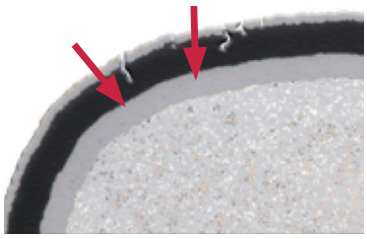
Suppress crack generation and progress

Insert cross section



PREMIUMTEC
TUNGALOY

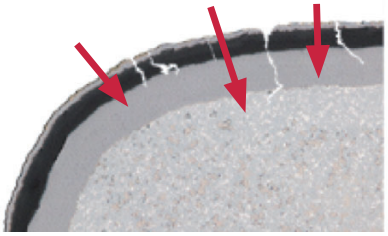
Suppress crack propagation



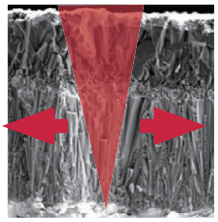
Still using

Crack occurs in coating files. Crack proceeds

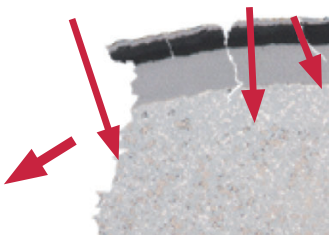
Insert cross section



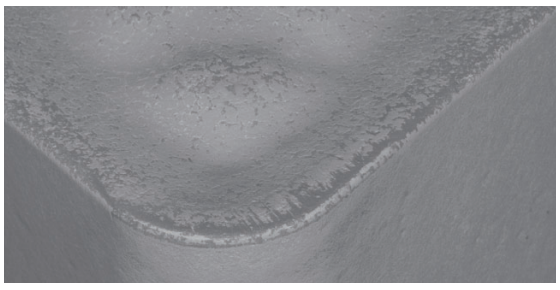
The crack gradually spreads



Fracture



Fracture



Results: stable machining!

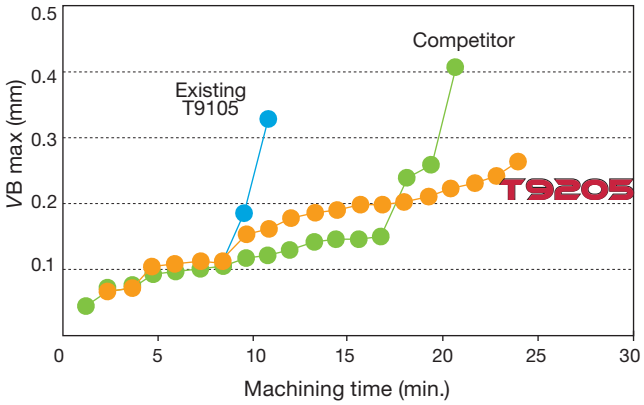
New

T9205

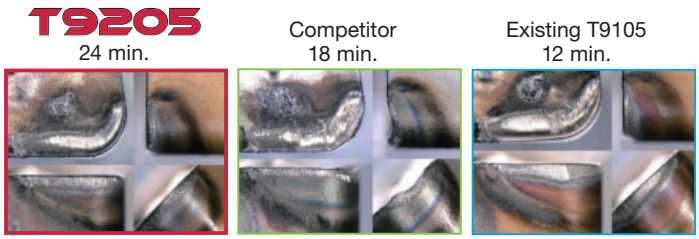
CUTTING PERFORMANCE

P S45C / C45 (245HB)

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

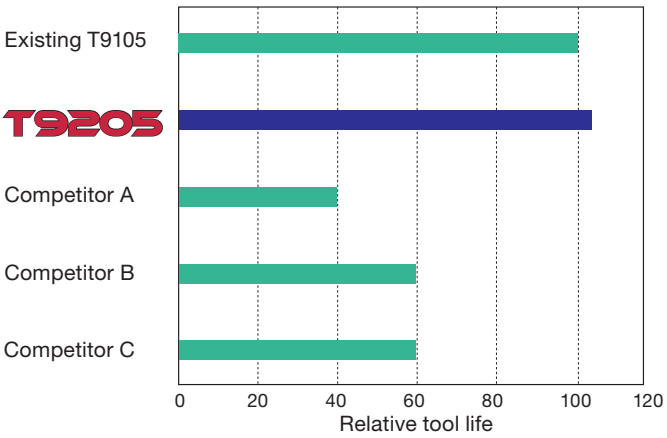


Inserts : CNMG120408-...
Cutting speed : *Vc* = 300 m/min
Feed : *f* = 0.25 mm/rev
Depth of cut : *ap* = 2.0 mm
Applications : Continuous cutting
Coolant : Wet



P S45C / C45

T9205 provides higher fracture resistance than competitors' grades



Inserts : CNMG120408-...
Cutting speed : *Vc* = 150 m/min
Feed : *f* = 0.15 mm/rev
Depth of cut : *ap* = 2.0 mm
Applications : Interrupted cutting
Coolant : Wet

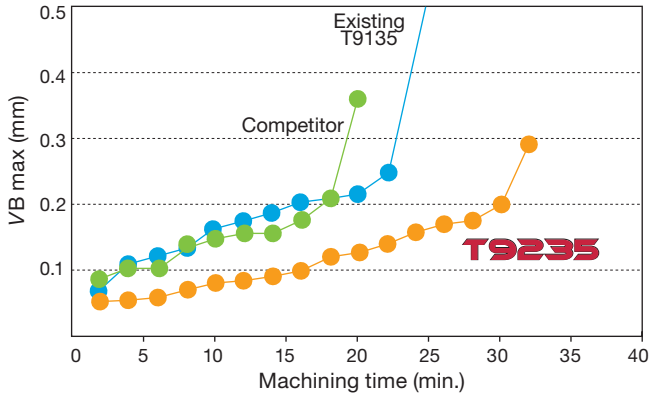
New

T9235

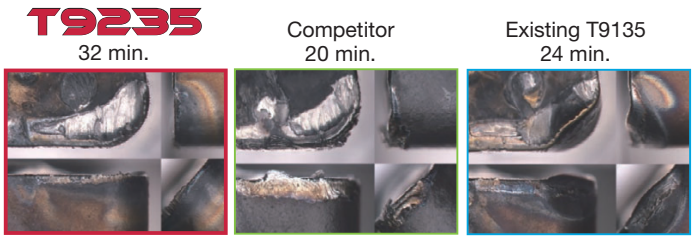
CUTTING PERFORMANCE

P S45C / C45 (245HB)

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

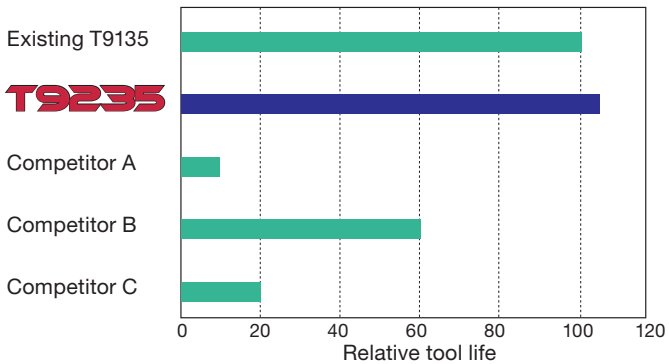


Inserts	: CNMG120408-...
Cutting speed	: *Vc* = 250 m/min
Feed	: *f* = 0.3 mm/rev
Depth of cut	: *ap* = 2.0 mm
Applications	: Continuous cutting
Coolant	: Wet



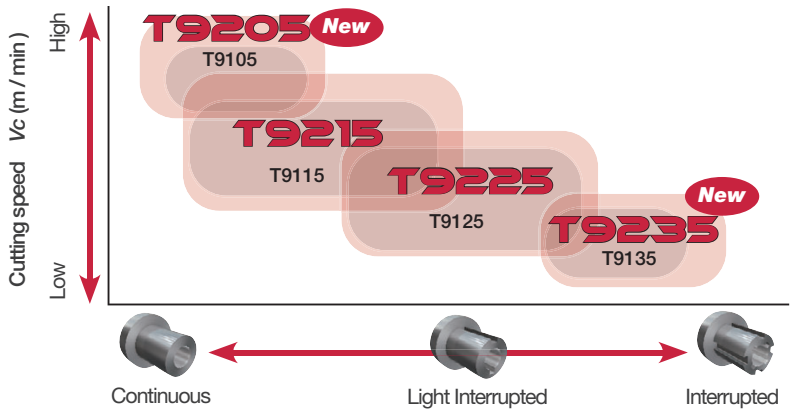
P S45C / C45

T9235 exhibits better resistance to fracture over competitors' grades



Inserts	: CNMG120408-...
Cutting speed	: *Vc* = 160 m/min
Feed	: *f* = 0.20 mm/rev
Depth of cut	: *ap* = 2.5 mm
Applications	: Interrupted cutting
Coolant	: Wet

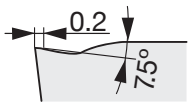
APPLICATION AREA



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

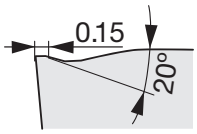
New chipbreaker geometries for steel turning

New TSF



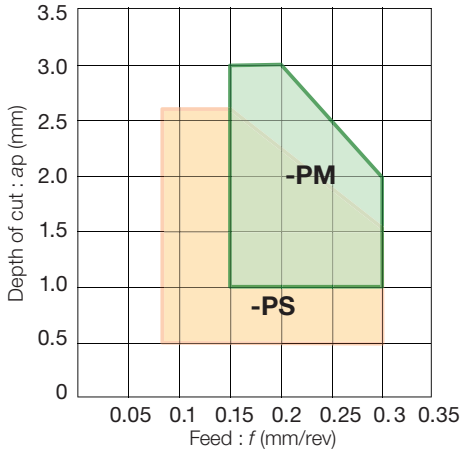
Optimal chipbreaker geometry ensures smooth chip control in a high feed range

New TM

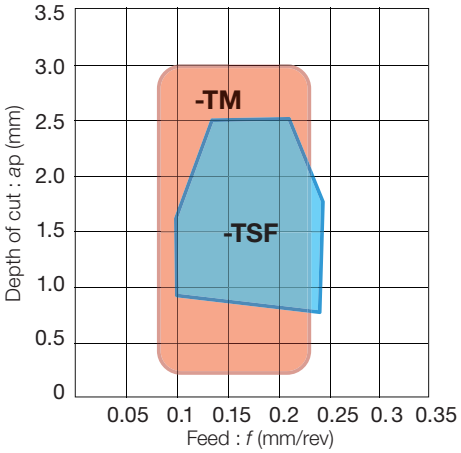


Optimal cutting edge and chipbreaker geometry provides effective chip evacuation at greater depths of cut

First Choice Chipbreakers



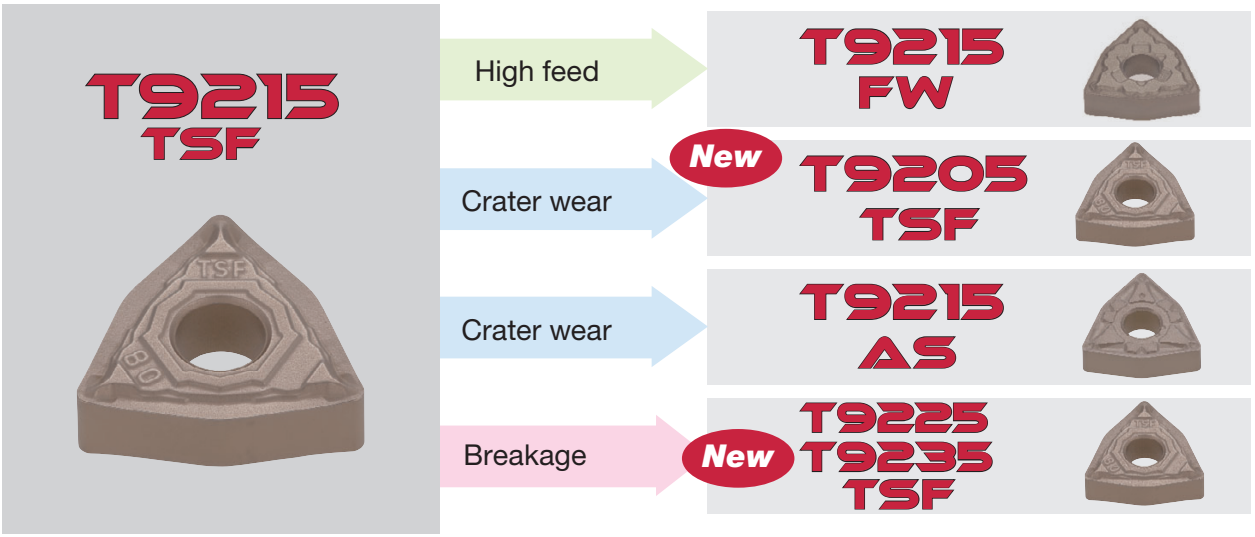
New New chipbreakers (complementary)



SELECTION GUIDE NEGATIVE TYPE

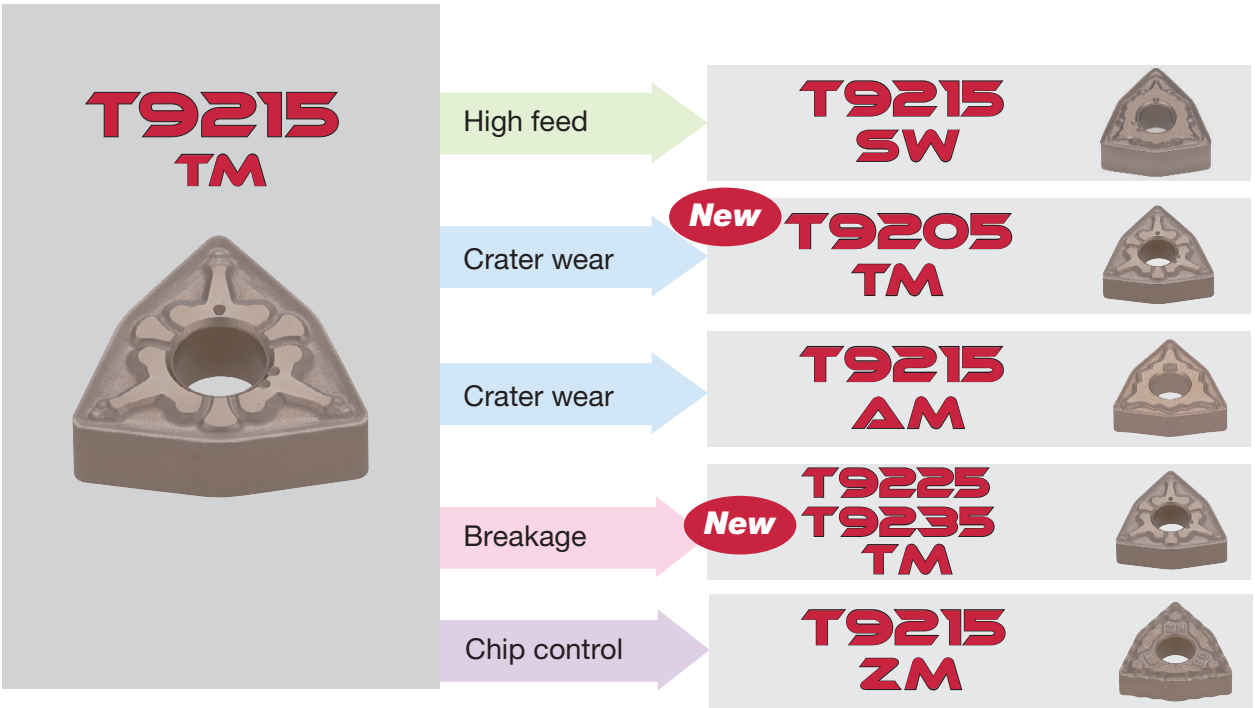
- For finishing (*ap* = 0.3 - 1.5 mm)

The 1st recommendation



- For finish to medium cutting (*ap* = 1.0 - 4.0 mm)

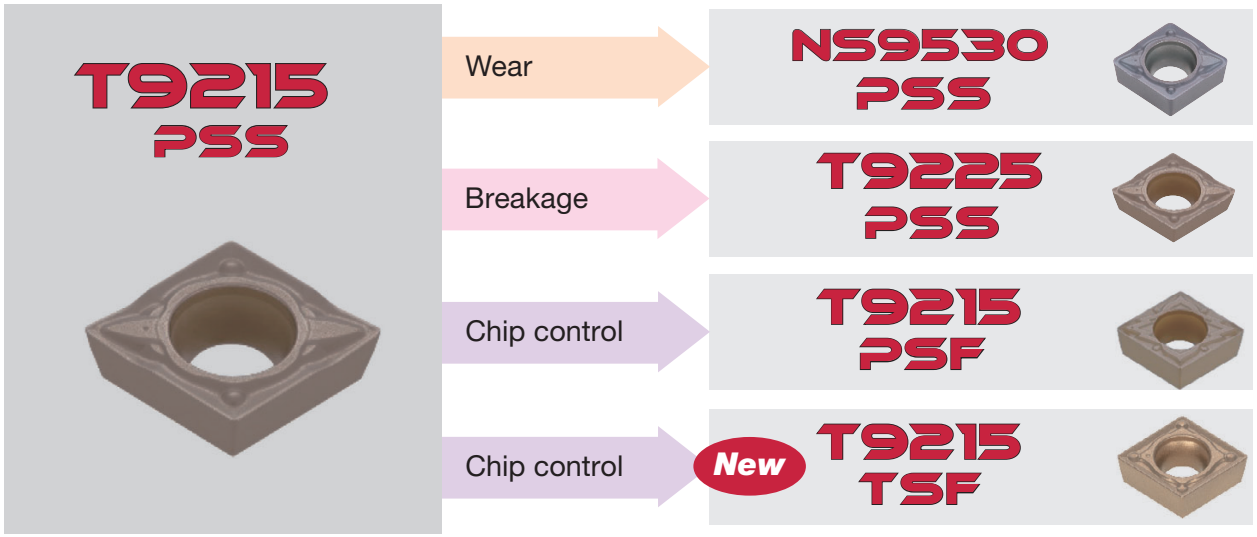
The 1st recommendation



SELECTION GUIDE POSITIVE TYPE

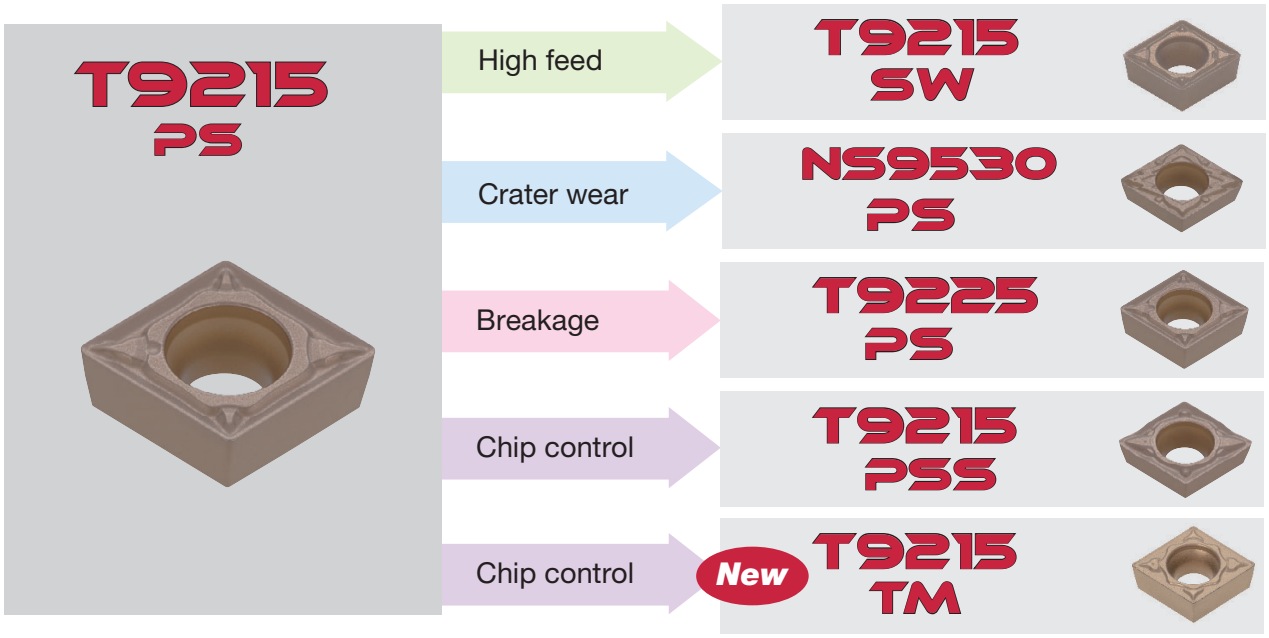
- For finishing (*ap* = 0.1 - 0.5 mm)

The 1st recommendation



- For finishing to medium cutting (*ap* = 0.5 - 2.5 mm)

The 1st recommendation



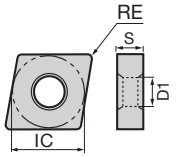
TurnLine - Insert NEGATIVE TYPE

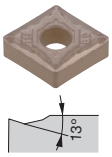
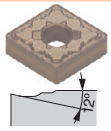
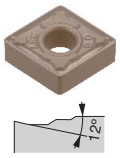
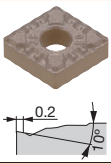
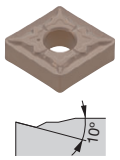
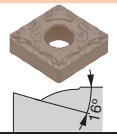
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	TSF	CNMG090404E-TSF		●	●		0.4	9.525	4.76	3.81
		CNMG090408E-TSF		●	●		0.8	9.525	4.76	3.81
		CNMG120404-TSF	●	●	●		0.4	12.7	4.76	5.16
		CNMG120408-TSF	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-TSF		●	●		1.2	12.7	4.76	5.16
Finishing (Wiper)	FW	CNMG090404E-FW	●	●	●		0.4	9.525	4.76	3.81
		CNMG090408E-FW	●	●	●		0.8	9.525	4.76	3.81
		CNMG120404-FW		●			0.4	12.7	4.76	5.16
		CNMG120408-FW	●	●	●		0.8	12.7	4.76	5.16
	AFW	CNMG120404-AFW		●	●		0.4	12.7	4.76	5.16
		CNMG120408-AFW	●	●	●	●	0.8	12.7	4.76	5.16
		*Wiper insert								
Finishing	ZF	CNMG090404E-ZF		●	●		0.4	9.525	4.76	3.81
		CNMG120404-ZF		●	●		0.4	12.7	4.76	5.16
		CNMG120408-ZF		●	●	●	0.8	12.7	4.76	5.16
	TS	CNMG120404-TS		●	●	●	0.4	12.7	4.76	5.16
		CNMG120408-TS	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-TS		●	●	●	1.2	12.7	4.76	5.16
	NS	CNMG120408-NS		●	●		0.8	12.7	4.76	5.16
										

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

● : Line-up
● : New product

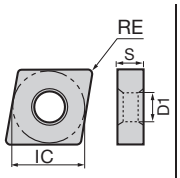
TurnLine - Insert NEGATIVE TYPE

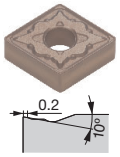
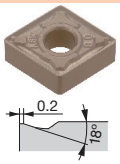
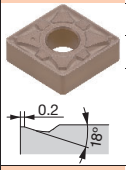
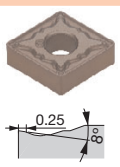
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing to medium cutting (Wiper)	SW	CNMG090408E-SW	●	●	●		0.8	9.525	4.76	3.81
		CNMG090412E-SW	●	●	●		1.2	9.525	4.76	3.81
		CNMG120408-SW	●	●	●		0.8	12.7	4.76	5.16
		CNMG120412-SW	●	●	●		1.2	12.7	4.76	5.16
		*Wiper insert								
	ASW	CNMG120408-ASW	●	●	●		0.8	12.7	4.76	5.16
		CNMG120412-ASW	●	●	●		1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	CNMG120404-AS	●	●	●		0.4	12.7	4.76	5.16
		CNMG120408-AS	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-AS		●	●	●	1.2	12.7	4.76	5.16
Medium cutting	TM	CNMG090304-TM		●	●		0.4	9.525	3.18	3.81
		CNMG090308-TM		●	●	●	0.8	9.525	3.18	3.81
		CNMG090404E-TM		●	●		0.4	9.525	4.76	3.81
		CNMG090408E-TM		●	●		0.8	9.525	4.76	3.81
		CNMG090412E-TM		●	●		1.2	9.525	4.76	3.81
		CNMG120404-TM	●	●	●	●	0.4	12.7	4.76	5.16
		CNMG120408-TM	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-TM	●	●	●	●	1.2	12.7	4.76	5.16
		CNMG120416-TM		●	●	●	1.6	12.7	4.76	5.16
		CNMG160612-TM	●	●	●	●	1.2	15.875	6.35	6.35
		CNMG190608-TM	●	●	●	●	0.8	19.05	6.35	7.93
		CNMG190612-TM	●	●	●	●	1.2	19.05	6.35	7.93
Finishing to medium	AM	CNMG120408-AM		●	●		0.8	12.7	4.76	5.16
		CNMG120412-AM		●	●		1.2	12.7	4.76	5.16
		CNMG120416-AM		●	●		1.6	12.7	4.76	5.16

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

● : Line-up
● : New product

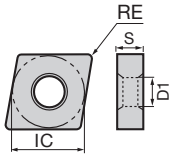
TurnLine - Insert NEGATIVE TYPE

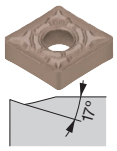
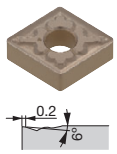
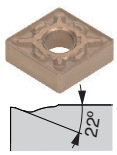
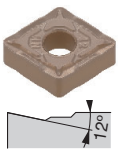
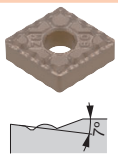
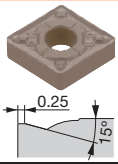
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finish to Medium cutting	TQ	CNMG120404-TQ		●	●		0.4	12.7	4.76	5.16
		CNMG120408-TQ		●	●		0.8	12.7	4.76	5.16
										
Medium cutting	TM	CNMG160608-TM		●			0.8	15.875	6.35	6.35
										
	TA	CNMG120408-TA		●	●		0.8	12.7	4.76	5.16
		CNMG120412-TA		●	●		1.2	12.7	4.76	5.16
										
Finish to Medium cutting	NM	CNMG120408-NM	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-NM		●	●	●	1.2	12.7	4.76	5.16
										
	ZM	CNMG090408E-ZM		●	●		0.8	9.525	4.76	3.81
		CNMG120408-ZM		●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-ZM		●	●	●	1.2	12.7	4.76	5.16
		CNMG120416-ZM		●	●	●	1.6	12.7	4.76	5.16
										
Medium cutting	DM	CNMG120404-DM		●	●		0.4	12.7	4.76	5.16
		CNMG120408-DM	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-DM	●	●	●	●	1.2	12.7	4.76	5.16
										

● : Line-up
● : New product

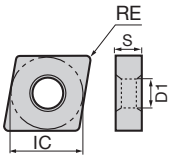
TurnLine - Insert NEGATIVE TYPE

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

CN

Rhombic, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium cutting	All-round	CNMG090304		●	●		0.4	9.525	3.18	3.81
		CNMG090308	●	●	●	●	0.8	9.525	3.18	3.81
		CNMG120404	●	●	●	●	0.4	12.7	4.76	5.16
		CNMG120408	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG120412	●	●	●	●	1.2	12.7	4.76	5.16
		CNMG120416	●	●	●	●	1.6	12.7	4.76	5.16
		CNMG160608	●	●	●	●	0.8	15.875	6.35	6.35
		CNMG160612	●	●	●	●	1.2	15.875	6.35	6.35
		CNMG160616	●	●	●	●	1.6	15.875	6.35	6.35
		CNMG190608		●	●	●	0.8	19.05	6.35	7.93
		CNMG190612	●	●	●	●	1.2	19.05	6.35	7.93
		CNMG190616		●	●	●	1.6	19.05	6.35	7.93
Finishing to medium cutting	27	CNMG120404-27		●	●		0.4	12.7	4.76	5.16
		CNMG120408-27		●	●	●	0.8	12.7	4.76	5.16
		CNMG120412-27			●		1.2	12.7	4.76	5.16
	28	CNMG120404-28			●		0.4	12.7	4.76	5.16
Medium cutting	33	CNMG120416-33		●			1.6	12.7	4.76	5.16
		CNMG160612-33		●			1.2	15.875	6.35	6.35
		CNMG190612-33		●			1.2	19.05	6.35	7.93
	37	CNMG120404-37		●			0.4	12.7	4.76	5.16
		CNMG120408-37		●	●		0.8	12.7	4.76	5.16
		CNMG120412-37		●			1.2	12.7	4.76	5.16

● : Line-up
● : New product

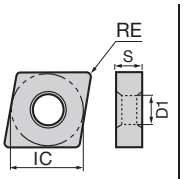
TurnLine - Insert NEGATIVE TYPE

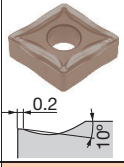
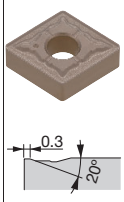
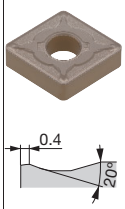
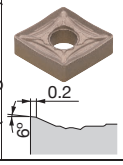
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Medium cutting	38	CNMG120408-38		●			0.8	12.7	4.76	5.16
										
Medium to heavy cutting	TH	CNMG120408-TH	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG12012-TH	●	●	●	●	1.2	12.7	4.76	5.16
		CNMG12016-TH	●	●	●	●	1.6	12.7	4.76	5.16
		CNMG160612-TH	●	●	●	●	1.2	15.875	6.35	6.35
		CNMG16016-TH	●	●	●	●	1.6	15.875	6.35	6.35
		CNMG190612-TH	●	●	●	●	1.2	19.05	6.35	7.93
		CNMG19016-TH	●	●	●	●	1.6	19.05	6.35	7.93
										
	THS	CNMG120408-THS	●	●	●	●	0.8	12.7	4.76	5.16
		CNMG12012-THS	●	●	●	●	1.2	12.7	4.76	5.16
		CNMG12016-THS	●	●	●	●	1.6	12.7	4.76	5.16
		CNMG160612-THS	●	●	●	●	1.2	15.875	6.35	6.35
		CNMG16016-THS	●	●	●	●	1.6	15.875	6.35	6.35
		CNMG190612-THS		●	●	●	1.2	19.05	6.35	7.93
		CNMG19016-THS		●	●	●	1.6	19.05	6.35	7.93
		CNMG19024-THS		●	●	●	2.4	19.05	6.35	7.93
		CNMG250924-THS		●	●	●	2.4	25.4	9.52	9.12
										
Medium to heavy cutting (Single sided)	57	CNMM120404-57			●		0.4	12.7	4.76	5.16
		CNMM12008-57		●	●		0.8	12.7	4.76	5.16
		CNMM12012-57			●		1.2	12.7	4.76	5.16
		CNMM190612-57			●		1.2	19.05	6.35	5.16
		CNMM19016-57			●		1.6	19.05	6.35	5.16
										

● : Line-up
● : New product

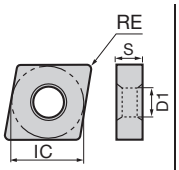
TurnLine - Insert NEGATIVE TYPE

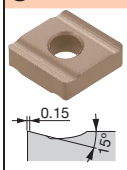
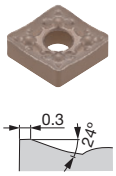
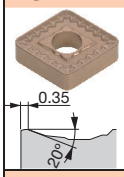
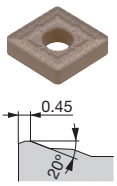
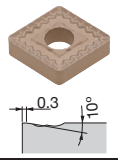
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

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



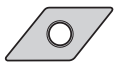
Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Medium cutting	S	CNMG120404L-S			●	●	0.4	12.7	4.76	5.16
		CNMG120404R-S			●	●	0.4	12.7	4.76	5.16
		CNMG120408L-S			●	●	0.8	12.7	4.76	5.16
		CNMG120408R-S			●	●	0.8	12.7	4.76	5.16
Medium to heavy cutting (Single sided)	TRS	CNMM120408-TRS	●	●	●	●	0.8	12.7	4.76	5.16
		CNMM120412-TRS		●	●	●	1.2	12.7	4.76	5.16
		CNMM160612-TRS		●	●	●	1.2	15.875	6.35	6.35
		CNMM160616-TRS		●	●	●	1.6	15.875	6.35	6.35
		CNMM190616-TRS		●	●	●	1.6	19.05	6.35	7.93
		CNMM190624-TRS		●	●	●	2.4	19.05	6.35	7.93
		CNMM250924-TRS		●	●	●	2.4	25.4	9.52	9.12
Heavy cutting (Single sided)	TU	CNMM190612-TU			●	●	1.2	19.05	6.35	7.93
		CNMM190616-TU			●	●	1.6	19.05	6.35	7.93
		CNMM190624-TU		●	●	●	2.4	19.05	6.35	7.93
		CNMM250924-TU			●	●	2.4	25.4	9.52	9.12
	TUS	CNMM190608-TUS		●	●		0.8	19.05	6.35	7.93
		CNMM190612-TUS		●	●	●	1.2	19.05	6.35	7.93
		CNMM190616-TUS		●	●	●	1.6	19.05	6.35	7.93
		CNMM190624-TUS		●	●	●	2.4	19.05	6.35	7.93
		CNMM190632-TUS		●	●		3.2	19.05	6.35	7.93
		CNMM250916-TUS		●	●	●	1.6	25.4	6.35	9.12
		CNMM250924-TUS		●	●	●	2.4	25.4	9.52	9.12
		CNMM250932-TUS		●	●		3.2	25.4	9.52	9.12
Medium to heavy cutting (Single sided)	65	CNMM120412-65		●	●		1.2	12.7	4.76	5.16
		CNMM160616-65		●			1.6	15.875	6.35	6.35

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

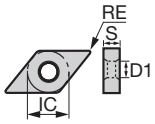
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	TSF	DNMG110404E-TSF		●	●	●	0.4	9.525	4.76	3.81
		DNMG110408E-TSF		●	●	●	0.8	9.525	4.76	3.81
		DNMG110412E-TSF		●	●		1.2	9.525	4.76	3.81
		DNMG150404-TSF	●	●	●	●	0.4	12.7	4.76	5.16
		DNMG150408-TSF	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-TSF	●	●	●	●	1.2	12.7	4.76	5.16
		DNMG150604-TSF		●	●		0.4	12.7	6.35	5.16
		DNMG150608-TSF	●	●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-TSF	●	●	●	●	1.2	12.7	6.35	5.16
Finishing (Wiper)	FW	DNMG110404E-FW		●			0.4	9.525	4.76	3.81
		DNMG110408E-FW		●			0.8	9.525	4.76	3.81
		DNMG150404-FW		●			0.4	12.7	4.76	5.16
		DNMG150408-FW		●			0.8	12.7	4.76	5.16
		DNMG150604-FW		●			0.4	12.7	6.35	5.16
		DNMG150608-FW		●			0.8	12.7	6.35	5.16
		*Wiper insert								
Finishing	ZF	DNMG110404E-ZF		●	●		0.4	9.525	4.76	3.81
		DNMG150404-ZF		●	●	●	0.4	12.7	4.76	5.16
		DNMG150408-ZF		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-ZF		●	●	●	1.2	12.7	4.76	5.16
		DNMG150604-ZF		●	●		0.4	12.7	6.35	5.16
		DNMG150608-ZF		●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-ZF		●	●		1.2	12.7	6.35	5.16
	11	DNMG150408-11		●			0.8	12.7	4.76	5.16

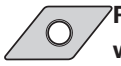
* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

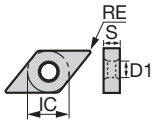
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

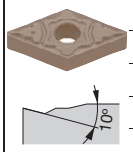
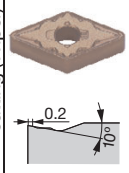
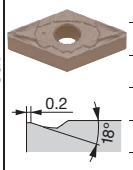
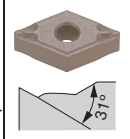
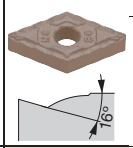
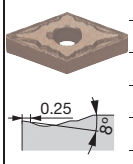
DN



Rhombic, 55° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing	TS	DNMG150404-TS		●	●	●	0.4	12.7	4.76	5.16
		DNMG150408-TS	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-TS	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150608-TS		●	●		0.8	12.7	6.35	5.16
		DNMG150612-TS		●	●		1.2	12.7	6.35	5.16
Finishing to medium cutting (Wiper)	SW	DNMG110408E-SW		●			0.8	9.525	4.76	3.81
		DNMG110412E-SW		●			1.2	9.525	4.76	3.81
		DNMG150408-SW		●			0.8	12.7	4.76	5.16
		DNMG150412-SW		●			1.2	12.7	4.76	5.16
		DNMG150608-SW		●			0.8	12.7	6.35	5.16
		DNMG150612-SW		●			1.2	12.7	6.35	5.16
		*Wiper insert								
High feed, small depth of cut	AS	DNMG150404-AS		●		●	0.4	12.7	4.76	5.16
		DNMG150408-AS		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-AS		●	●	●	1.2	12.7	4.76	5.16
		DNMG150604-AS		●			0.4	12.7	6.35	5.16
		DNMG150608-AS		●	●		0.8	12.7	6.35	5.16
		DNMG150612-AS		●			1.2	12.7	6.35	5.16
Boring (Double sided)	CB	DNMG110408-CB		●			0.8	9.525	4.76	3.81
										
Finishing	NS	DNMG150404-NS			●		0.4	12.7	4.76	5.16
		DNMG150408-NS	●	●	●		0.8	12.7	4.76	5.16
Finishing to medium cutting	AM	DNMG150408-AM		●	●		0.8	12.7	4.76	5.16
		DNMG150412-AM		●	●		1.2	12.7	4.76	5.16
		DNMG150416-AM		●	●		1.6	12.7	4.76	5.16
		DNMG150608-AM		●	●		0.8	12.7	6.35	5.16
		DNMG150612-AM		●	●		1.2	12.7	6.35	5.16
		DNMG150616-AM		●	●		1.6	12.7	6.35	5.16

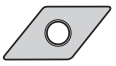
* Please contact our sales representative for your inquiries about the program adjustment when using SW/FW for machining of radius shape or taper machining.

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

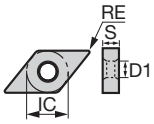
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN



Rhombic, 55° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing to medium cutting	NM	DNMG150408-NM		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-NM	●	●	●	●	1.2	12.7	4.76	5.16
	TQ	DNMG150404-TQ		●	●		0.4	12.7	4.76	5.16
		DNMG150408-TQ		●	●		0.8	12.7	4.76	5.16
Medium cutting	TM	DNMG110404E-TM		●	●		0.4	9.525	4.76	3.81
		DNMG110408E-TM		●	●		0.8	9.525	4.76	3.81
		DNMG110412E-TM		●	●		1.2	9.525	4.76	3.81
		DNMG110404-TM		●	●	●	0.4	9.525	4.76	3.81
		DNMG110408-TM		●	●	●	0.8	9.525	4.76	3.81
		DNMG150404-TM	●	●	●	●	0.4	12.7	4.76	5.16
		DNMG150408-TM	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-TM	●	●	●	●	1.2	12.7	4.76	5.16
		DNMG150416-TM		●	●		1.6	12.7	4.76	5.16
		DNMG150604-TM	●	●	●	●	0.4	12.7	6.35	5.16
		DNMG150608-TM	●	●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-TM	●	●	●	●	1.2	12.7	6.35	5.16
		DNMG150616-TM	●	●	●	●	1.6	12.7	6.35	5.16
Finishing to medium cutting	ZM	DNMG110408E-ZM		●	●		0.8	9.525	4.76	3.81
		DNMG150408-ZM		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-ZM		●	●	●	1.2	12.7	4.76	5.16
		DNMG150608-ZM		●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-ZM		●	●		1.2	12.7	6.35	5.16
Medium cutting	DM	DNMG150408-DM		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-DM	●	●	●	●	1.2	12.7	4.76	5.16
		DNMG150604-DM		●			0.4	12.7	6.35	5.16
		DNMG150608-DM		●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-DM	●	●	●	●	1.2	12.7	6.35	5.16
		DNMG150616-DM	●				1.6	12.7	6.35	5.16

● : Line-up
● : New product

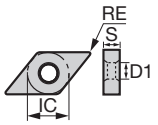
TurnLine - Insert NEGATIVE TYPE

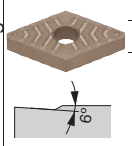
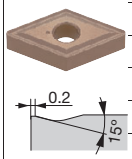
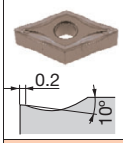
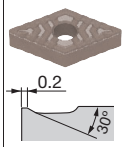
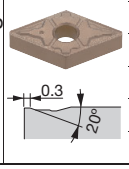
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

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



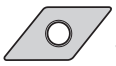
Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing to medium cutting	27	DNMG150404-27			●		0.4	12.7	4.76	5.16
		DNMG150408-27		●	●		0.8	12.7	4.76	5.16
		DNMG150412-27			●		1.2	12.7	4.76	5.16
Medium cutting	All-round	DNMG110404		●	●		0.4	9.525	4.76	3.81
		DNMG110408	●	●	●	●	0.8	9.525	4.76	3.81
		DNMG150404		●	●	●	0.4	12.7	4.76	5.16
		DNMG150408	●	●	●	●	0.8	12.7	4.76	5.16
		DNMG150412	●	●	●	●	1.2	12.7	4.76	5.16
		DNMG150416		●	●		1.6	12.7	4.76	5.16
		DNMG150604		●	●		0.4	12.7	6.35	5.16
		DNMG150608	●	●	●	●	0.8	12.7	6.35	5.16
		DNMG150612	●	●	●	●	1.2	12.7	6.35	5.16
		DNMG150616		●	●		1.6	12.7	6.35	5.16
	38	DNMG150412-38		●			1.2	12.7	4.76	5.16
										
	37	DNMG150608-37		●			0.8	12.7	6.35	5.16
										
Medium to heavy cutting	TH	DNMG150408-TH		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-TH		●	●	●	1.2	12.7	4.76	5.16
		DNMG150416-TH		●	●		1.6	12.7	4.76	5.16
		DNMG150608-TH		●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-TH		●	●	●	1.2	12.7	6.35	5.16
		DNMG150616-TH		●	●	●	1.6	12.7	6.35	5.16

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

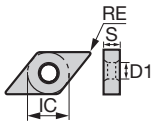
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

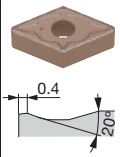
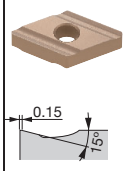
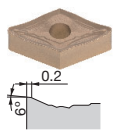
DN



Rhombic, 55° with hole

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



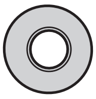
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium to heavy cutting	THS	DNMG150408-THS		●	●	●	0.8	12.7	4.76	5.16
		DNMG150412-THS		●	●	●	1.2	12.7	4.76	5.16
		DNMG150416-THS		●	●		1.6	12.7	4.76	5.16
		DNMG150608-THS		●	●	●	0.8	12.7	6.35	5.16
		DNMG150612-THS		●	●	●	1.2	12.7	6.35	5.16
		DNMG150616-THS		●	●		1.6	12.7	6.35	5.16
Medium cutting	S	DNMG150404L-S			●	●	0.4	12.7	4.76	5.16
		DNMG150404R-S			●	●	0.4	12.7	4.76	5.16
		DNMG150408L-S			●	●	0.8	12.7	4.76	5.16
		DNMG150408R-S			●	●	0.8	12.7	4.76	5.16
		DNMG150604L-S			●	●	0.4	12.7	6.35	5.16
		DNMG150604R-S			●	●	0.4	12.7	6.35	5.16
		DNMG150608L-S			●	●	0.8	12.7	6.35	5.16
		DNMG150608R-S			●	●	0.8	12.7	6.35	5.16
Medium to heavy cutting (Single sided)	57	DNMM150608-57			●		0.8	12.7	6.35	5.16
		DNMM150612-57			●		1.2	12.7	6.35	5.16

● : Line-up
● : New product

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

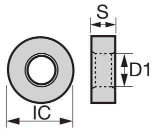
TurnLine - Insert NEGATIVE TYPE

RN

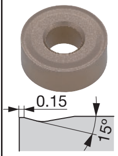


Round, with hole

		T9205	T9215	T9225	T9235
P	Steel	●	●C	C✠	✠
M	Stainless		●C		
K	Cast iron		●C		
N	Non-ferrous				
S	Superalloys				
H	Hard materials				



Application	Chipbreaker	Designation	T9205 (Coated)	T9215 (Coated)	T9225 (Coated)	T9235 (Coated)	RE	IC	S	D1
Heavy cutting	61	RNMG090300-61		●	🔴		-	9.525	3.18	3.81
		RNMG120400-61	🔴	●	🔴	🔴	-	12	4.76	5.16
		RNMG150600-61		●	🔴		-	15.875	6.35	6.43
		RNMG190600-61		●	🔴	🔴	-	19.05	6.35	7.93
		RNMG250900-61		●	🔴		-	25	9.52	9.22



● : Line-up
🔴 : New product

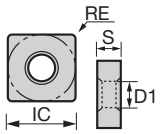
TurnLine - Insert NEGATIVE TYPE

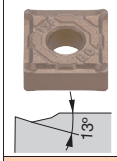
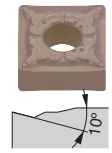
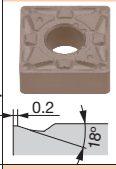
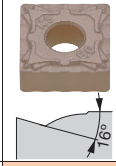
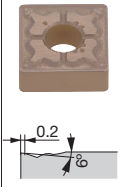
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	TSF	SNMG120404-TSF		●	●		0.4	12.7	4.76	5.16
		SNMG120408-TSF		●	●		0.8	12.7	4.76	5.16
		SNMG120412-TSF		●	●		1.2	12.7	4.76	5.16
	TS	SNMG120404-TS		●	●		0.4	12.7	4.76	5.16
		SNMG120408-TS	●	●	●	●	0.8	12.7	4.76	5.16
		SNMG120412-TS		●	●	●	1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	SNMG120408-AS	●	●			0.8	12.7	4.76	5.16
										
Finishing	NS	SNMG120408-NS		●	●		0.8	12.7	4.76	5.16
										
Medium cutting	TM	SNMG090304-TM		●	●	●	0.4	9.525	3.18	3.81
		SNMG090308-TM		●	●	●	0.8	9.525	3.18	3.81
		SNMG120404-TM		●	●		0.4	12.7	4.76	5.16
		SNMG120408-TM	●	●	●	●	0.8	12.7	4.76	5.16
		SNMG120412-TM	●	●	●	●	1.2	12.7	4.76	5.16
		SNMG120416-TM		●	●	●	1.6	12.7	4.76	5.16
		SNMG150608-TM		●			0.8	15.875	6.35	6.35
		SNMG150612-TM		●			1.2	15.875	6.35	6.35
		SNMG190608-TM		●			0.8	19.05	6.35	7.93
		SNMG190612-TM		●			1.2	19.05	6.35	7.93

● : Line-up
● : New product

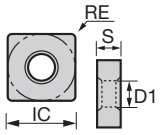
TurnLine - Insert NEGATIVE TYPE

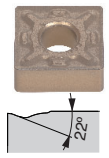
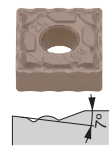
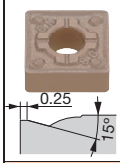
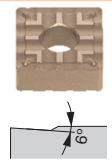
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Medium cutting	**TA**	**SNMG120408-TA**		●	●		0.8	12.7	4.76	5.16
		SNMG120412-TA		●	●		1.2	12.7	4.76	5.16
Finishing to medium cutting	**ZM**	**SNMG120408-ZM**		●	●	●	0.8	12.7	4.76	5.16
		SNMG120412-ZM		●	●	●	1.2	12.7	4.76	5.16
Medium cutting	**DM**	**SNMG120408-DM**		●	●		0.8	12.7	4.76	5.16
		SNMG120412-DM		●	●	●	1.2	12.7	4.76	5.16
	All-round	**SNMG090304**		●	●		0.4	9.525	3.18	3.81
		SNMG090308		●	●	●	0.8	9.525	3.18	3.81
		SNMG120404		●	●	●	0.4	12.7	4.76	5.16
		SNMG120408	●	●	●	●	0.8	12.7	4.76	5.16
		SNMG120412	●	●	●	●	1.2	12.7	4.76	5.16
		SNMG120416	●	●	●	●	1.6	12.7	4.76	5.16
		SNMG120420		●	●	●	2.0	12.7	4.76	5.16
		SNMG150612		●	●	●	1.2	15.875	6.35	6.35
		SNMG150616		●	●		1.6	15.875	6.35	6.35
		SNMG190612		●	●	●	1.2	19.05	6.35	7.93
		SNMG190616		●	●	●	1.6	19.05	6.35	7.93
		SNMG250724		●	●	●	2.4	25.4	7.94	9.12
Finishing to medium cutting	**27**	**SNMG120408-27**			●		0.8	12.7	4.76	5.16
		SNMG120412-27			●		1.2	12.7	4.76	5.16

● : Line-up
● : New product

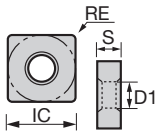
TurnLine - Insert NEGATIVE TYPE

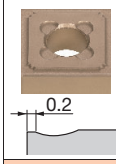
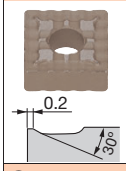
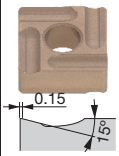
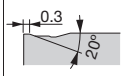
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium cutting	33	SNMG120408-33		●	●		0.8	12.7	4.76	5.16
		SNMG12041**2-33**			●		1.2	12.7	4.76	5.16
		SNMG150612-33		●	●		1.2	15.875	6.35	6.35
		SNMG190616-33			●	●	1.6	19.05	6.35	7.93
	37	SNMG120408-37		●			0.8	12.7	4.76	5.16
		SNMG12041**2-37**		●			1.2	12.7	4.76	5.16
	S	SNMG120404L-S			●	●	0.4	12.7	4.76	5.16
		SNMG12040**4R-S**			●	●	0.4	12.7	4.76	5.16
		SNMG12040**8L-S**			●	●	0.8	12.7	4.76	5.16
		SNMG12040**8R-S**			●	●	0.8	12.7	4.76	5.16
Medium to heavy cutting	TH	SNMG120408-TH		●	●	●	0.8	12.7	4.76	5.16
		SNMG12041**2-TH**		●	●	●	1.2	12.7	4.76	5.16
		SNMG150612-TH	●	●	●		1.2	15.875	6.35	6.35
		SNMG15061**6-TH**	●	●	●		1.6	15.875	6.35	6.35
		SNMG190612-TH	●	●	●	●	1.2	19.05	6.35	7.93
		SNMG19061**6-TH**	●	●	●	●	1.6	19.05	6.35	7.93
	THS	SNMG120408-THS		●	●	●	0.8	12.7	4.76	5.16
		SNMG12041**2-THS**		●	●	●	1.2	12.7	4.76	5.16
		SNMG150612-THS		●	●		1.2	15.875	6.35	6.35
		SNMG15061**6-THS**		●	●		0.8	15.875	6.35	6.35
		SNMG190608-THS		●	●	●	0.8	19.05	6.35	7.93
		SNMG19061**2-THS**		●	●	●	1.2	19.05	6.35	7.93
		SNMG19061**6-THS**		●	●	●	1.6	19.05	6.35	7.93
		SNMG19062**4-THS**		●	●	●	2.4	19.05	6.35	7.93
		SNMG250716-THS		●	●	●	1.6	25.4	7.94	9.12
		SNMG25072**4-THS**		●	●	●	2.4	25.4	7.94	9.12

● : Line-up
● : New product

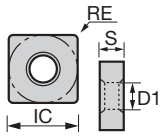
TurnLine - Insert NEGATIVE TYPE

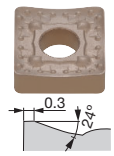
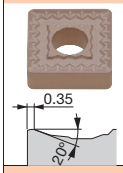
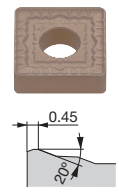
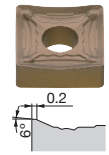
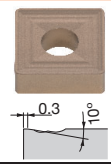
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium to heavy cutting (Single sided)	TRS	SNMM150612-TRS		●	●	●	1.2	15.875	6.35	6.35
		SNMM150616-TRS		●	●	●	1.6	15.875	6.35	6.35
		SNMM190616-TRS		●	●	●	1.6	19.05	6.35	7.93
		SNMM190624-TRS		●	●	●	2.4	19.05	6.35	7.93
		SNMM250924-TRS		●	●	●	2.4	25.4	9.52	9.12
Heavy cutting (Single sided)	TU	SNMM190616-TU				●	1.6	19.05	6.35	7.93
		SNMM190624-TU			●	●	2.4	19.05	6.35	7.93
		SNMM250724-TU			●	●	2.4	25.4	7.94	9.12
		SNMM250924-TU		●	●		2.4	25.4	9.52	9.12
	TUS	SNMM190612-TUS		●	●	●	1.2	19.05	6.35	7.93
		SNMM190616-TUS		●	●	●	1.6	19.05	6.35	7.93
		SNMM190624-TUS		●	●	●	2.4	19.05	6.35	7.93
		SNMM250724-TUS		●	●	●	2.4	25.4	7.94	9.12
		SNMM250732-TUS		●	●		3.2	25.4	7.94	9.12
		SNMM250924-TUS		●	●	●	2.4	25.4	9.52	9.12
		SNMM250932-TUS		●	●		3.2	25.4	9.52	9.12
Medium to heavy cutting (Single sided)	57	SNMM120408-57		●	●		0.8	12.7	4.76	5.16
		SNMM150616-57			●		1.6	15.875	6.35	6.35
		SNMM190612-57			●		1.2	19.05	6.35	7.93
	65	SNMM190612-65			●		1.2	19.05	6.35	7.93
		SNMM190624-65			●		2.4	19.05	6.35	7.93
		SNMM310924-65			●		2.4	31.75	9.52	8.8

● : Line-up
● : New product

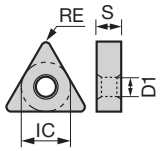
TurnLine - Insert NEGATIVE TYPE

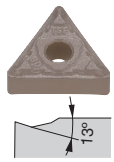
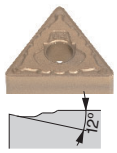
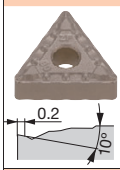
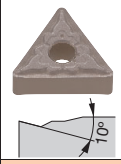
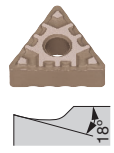
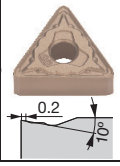
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	TSF	TNMG110404E-TSF		●	●		0.4	6.35	4.76	2.26
		TNMG110408E-TSF		●	●		0.8	6.35	4.76	2.26
		TNMG160404-TSF		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408-TSF	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-TSF		●	●	●	1.2	9.525	4.76	3.81
Finishing (Wiper)	FW	TNMG110404E-FW		●			0.4	6.35	4.76	2.26
		TNMG110408E-FW		●			0.8	6.35	4.76	2.26
		TNMG160404-FW		●			0.4	9.525	4.76	3.81
		TNMG160408-FW		●			0.8	9.525	4.76	3.81
		*Wiper insert								
Finishing	ZF	TNMG160404-ZF		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408-ZF		●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-ZF			●		1.2	9.525	4.76	3.81
	TS	TNMG160404-TS		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408-TS	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-TS	●	●	●	●	1.2	9.525	4.76	3.81
Finishing of mild steels	17	TNMG160404-17			●		0.4	9.525	4.76	3.81
		TNMG160408-17			●		0.8	9.525	4.76	3.81
Finishing to medium cutting (Wiper)	SW	TNMG110408E-SW		●			0.8	6.35	4.76	2.26
		TNMG110412E-SW		●			1.2	6.35	4.76	2.26
		TNMG160408-SW		●			0.8	9.525	4.76	3.81
		TNMG160412-SW		●			1.2	9.525	4.76	3.81
		*Wiper insert								

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

● : Line-up
● : New product

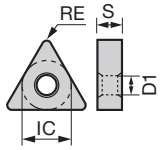
TurnLine - Insert NEGATIVE TYPE

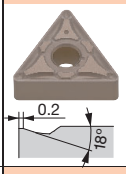
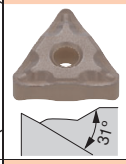
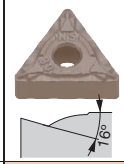
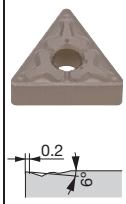
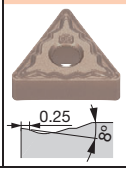
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

TN

Triangular, 60° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
High feed, small depth of cut	AS	TNMG160404-AS			●	●	0.4	9.525	4.76	3.81
		TNMG160408-AS	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-AS	●	●	●		1.2	9.525	4.76	3.81
Boring (Double sided)	CB	TNMG110304-CB		●			0.4	6.35	3.18	2.26
		TNMG110308-CB		●			0.8	6.35	3.18	2.26
Finishing	NS	TNMG160404-NS		●	●		0.4	9.525	4.76	3.81
		TNMG160408-NS	●	●	●		0.8	9.525	4.76	3.81
Medium cutting	TM	TNMG110304-TM		●	●	●	0.4	6.35	3.18	2.26
		TNMG110308-TM		●	●	●	0.8	6.35	3.18	2.26
		TNMG110404E-TM		●	●		0.4	6.35	4.76	2.26
		TNMG110408E-TM		●	●		0.8	6.35	4.76	2.26
		TNMG110412E-TM		●	●		1.2	6.35	4.76	2.26
		TNMG160404-TM		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408-TM	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-TM	●	●	●	●	1.2	9.525	4.76	3.81
		TNMG220404-TM		●	●		0.4	12.7	4.76	5.16
		TNMG220408-TM	●	●	●	●	0.8	12.7	4.76	5.16
		TNMG220412-TM		●	●	●	1.2	12.7	4.76	5.16
		TNMG220416-TM		●	●		1.6	12.7	4.76	5.16
Finishing to medium cutting	AM	TNMG160408-AM		●	●		0.8	9.525	4.76	3.81
		TNMG160412-AM		●	●		1.2	9.525	4.76	3.81

● : Line-up
● : New product

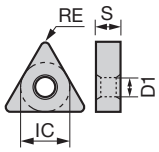
TurnLine - Insert NEGATIVE TYPE

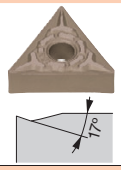
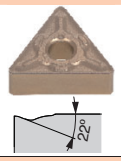
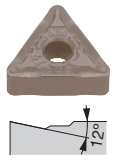
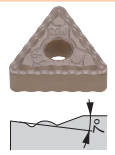
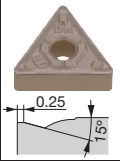
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing to medium cutting	TQ	TNMG160404-TQ		●	●		0.4	9.525	4.76	3.81
		TNMG160408-TQ		●	●		0.8	9.525	4.76	3.81
Medium cutting	TA	TNMG160404-TA		●	●		0.4	9.525	4.76	3.81
		TNMG160408-TA		●	●		0.8	9.525	4.76	3.81
		TNMG160412-TA		●	●		1.2	9.525	4.76	3.81
Finishing to medium cutting	NM	TNMG160408-NM			●		0.8	9.525	4.76	3.81
		TNMG160412-NM		●	●		1.2	9.525	4.76	3.81
	ZM	TNMG160404-ZM		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408-ZM		●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-ZM		●	●	●	1.2	9.525	4.76	3.81
		TNMG220412-ZM			●		1.2	12.7	4.76	5.16
Medium cutting	DM	TNMG160408-DM	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412-DM		●	●		1.2	9.525	4.76	3.81

● : Line-up
● : New product

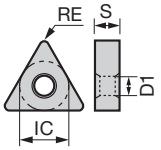
TurnLine - Insert NEGATIVE TYPE

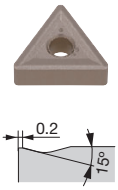
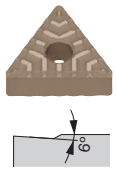
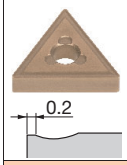
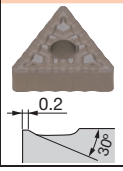
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium cutting	All-round	TNMG110304		●	●		0.4	6.35	3.18	2.26
		TNMG110308		●	●		0.8	6.35	3.18	2.26
		TNMG160404	●	●	●	●	0.4	9.525	4.76	3.81
		TNMG160408	●	●	●	●	0.8	9.525	4.76	3.81
		TNMG160412	●	●	●	●	1.2	9.525	4.76	3.81
		TNMG160416		●	●	●	1.6	9.525	4.76	3.81
		TNMG160420		●	●	●	2.0	9.525	4.76	3.81
		TNMG220408	●	●	●	●	0.8	12.7	4.76	5.16
		TNMG220412	●	●	●	●	1.2	12.7	4.76	5.16
		TNMG220416		●	●		1.6	12.7	4.76	5.16
		TNMG270608			●		0.8	15.875	6.35	6.35
		TNMG270612			●		1.2	15.875	6.35	6.35
Finishing to medium cutting	27	TNMG160404-27		●	●		0.4	9.525	4.76	3.81
		TNMG160408-27		●	●		0.8	9.525	4.76	3.81
		TNMG160412-27		●	●		1.2	9.525	4.76	3.81
		TNMG220404-27			●		0.4	12.7	4.76	5.16
		TNMG220408-27			●		0.8	12.7	4.76	5.16
		TNMG220412-27			●		1.2	12.7	4.76	5.16
Medium cutting	33	TNMG160416-33			●		1.6	9.525	4.76	3.81
		TNMG220404-33			●		0.4	12.7	4.76	5.16
		TNMG220412-33				●	1.2	12.7	4.76	5.16
		TNMG220416-33			●		1.6	12.7	4.76	5.16
	37	TNMG160404-37		●			0.4	9.525	4.76	3.81
		TNMG160408-37		●			0.8	9.525	4.76	3.81
										

● : Line-up
● : New product

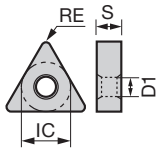
TurnLine - Insert NEGATIVE TYPE

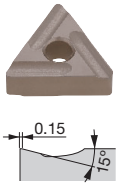
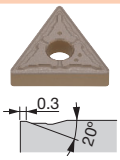
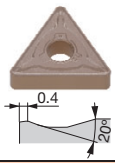
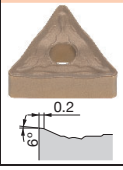
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

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



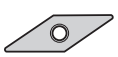
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium cutting	S	TNMG160404R-S		●	●	●	0.4	9.525	4.76	3.81
		TNMG160404L-S		●	●	●	0.4	9.525	4.76	3.81
		TNMG160408R-S		●	●	●	0.8	9.525	4.76	3.81
		TNMG160408L-S		●	●	●	0.8	9.525	4.76	3.81
		TNMG220404R-S			●	●	0.4	12.7	4.76	5.16
		TNMG220404L-S			●	●	0.4	12.7	4.76	5.16
		TNMG220408R-S			●	●	0.8	12.7	4.76	5.16
		TNMG220408L-S			●	●	0.8	12.7	4.76	5.16
Medium to heavy cutting	TH	TNMG220408-TH		●	●	●	0.8	12.7	4.76	5.16
		TNMG220412-TH		●	●	●	1.2	12.7	4.76	5.16
	THS	TNMG220408-THS		●	●	●	0.8	12.7	4.76	5.16
		TNMG220412-THS		●	●	●	1.2	12.7	4.76	5.16
Medium to heavy cutting (Single sided)	57	TNMM160408-57			●		0.8	9.525	4.76	3.81
		TNMM220408-57			●		0.8	12.7	4.76	5.16
		TNMM220412-57			●		1.2	12.7	4.76	5.16

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

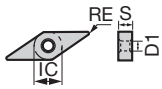
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

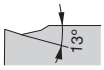
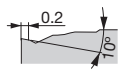
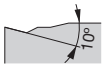
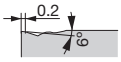
VN



Rhombic, 35° with hole

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



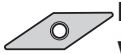
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	TSF	VNMG120402E-TSF		●	●		0.2	7.15	4.76	3.81
		VNMG120404E-TSF		●	●		0.4	7.15	4.76	3.81
		VNMG120408E-TSF		●	●		0.8	7.15	4.76	3.81
		VNMG160404-TSF	●	●	●	●	0.4	9.525	4.76	3.81
		VNMG160408-TSF	●	●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-TSF	●	●	●	●	1.2	9.525	4.76	3.81
	ZF	VNMG160404-ZF		●	●	●	0.4	9.525	4.76	3.81
		VNMG160408-ZF		●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-ZF		●	●	●	1.2	9.525	4.76	3.81
										
	TS	VNMG160404-TS		●	●	●	0.4	9.525	4.76	3.81
		VNMG160408-TS		●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-TS		●	●	●	1.2	9.525	4.76	3.81
										
Medium cutting	TM	VNMG120404E-TM		●	●		0.4	7.15	4.76	3.81
		VNMG120408E-TM		●	●		0.8	7.15	4.76	3.81
		VNMG160404-TM	●	●	●	●	0.4	9.525	4.76	3.81
		VNMG160408-TM	●	●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-TM	●	●	●	●	1.2	9.525	4.76	3.81
Finishing to medium cutting	ZM	VNMG160408-ZM		●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-ZM		●	●	●	1.2	9.525	4.76	3.81
										

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

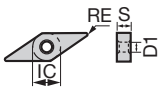
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

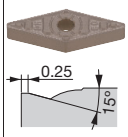
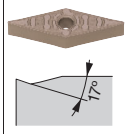
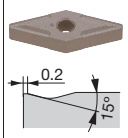
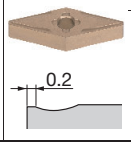
VN



Rhombic, 35° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Medium cutting	DM	VNMG160408-DM	●	●	●	●	0.8	9.525	4.76	3.81
		VNMG160412-DM		●	●	●	1.2	9.525	4.76	3.81
										
Finishing to medium cutting	TQ	VNMG160404-TQ		●	●		0.4	9.525	4.76	3.81
		VNMG160408-TQ		●	●		0.8	9.525	4.76	3.81
										
Medium cutting	All-round	VNMG160404	●	●	●	●	0.4	9.525	4.76	3.81
		VNMG160408	●	●	●	●	0.8	9.525	4.76	3.81
		VNMG160412		●	●		1.2	9.525	4.76	3.81
										
	33	VNMG160404-33			●		0.4	9.525	4.76	3.81
		VNMG160408-33		●	●		0.8	9.525	4.76	3.81
										

● : Line-up
● : New product

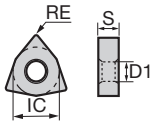
TurnLine - Insert NEGATIVE TYPE

● : 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	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing	TSF	WNMG060404E-TSF		●	●		0.4	9.525	4.76	3.81
		WNMG060408E-TSF		●	●		0.8	9.525	4.76	3.81
		WNMG060412E-TSF		●	●		1.2	9.525	4.76	3.81
		WNMG060404-TSF		●	●		0.4	9.525	4.76	3.81
		WNMG060408-TSF		●	●		0.8	9.525	4.76	3.81
		WNMG080404-TSF		●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-TSF		●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-TSF	●	●	●	●	1.2	12.7	4.76	5.16
Finishing to medium cutting (Wiper)	FW	WNMG060404E-FW	●	●	●		0.4	9.525	4.76	3.81
		WNMG060408E-FW	●	●	●		0.8	9.525	4.76	3.81
		WNMG080404-FW		●	●		0.4	12.7	4.76	5.16
		WNMG080408-FW	●	●	●		0.8	12.7	4.76	5.16
		*Wiper insert								
	AFW	WNMG060404-AFW		●	●		0.4	9.525	4.76	3.81
		WNMG060408-AFW	●	●	●	●	0.8	9.525	4.76	3.81
		WNMG080404-AFW		●	●		0.4	12.7	4.76	5.16
		WNMG080408-AFW	●	●	●	●	0.8	12.7	4.76	5.16
Finishing	ZF	WNMG060404E-ZF		●	●		0.4	9.525	4.76	3.81
		WNMG060404-ZF		●	●		0.4	9.525	4.76	3.81
		WNMG060408-ZF		●	●		0.8	9.525	4.76	3.81
		WNMG080404-ZF		●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-ZF		●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-ZF		●			1.2	12.7	4.76	5.16
	TS	WNMG080404-TS		●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-TS		●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-TS		●	●	●	1.2	12.7	4.76	5.16

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

● : Line-up
● : New product

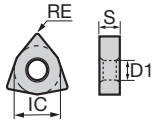
TurnLine - Insert NEGATIVE TYPE

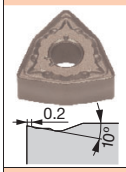
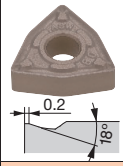
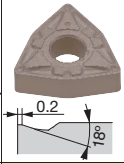
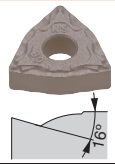
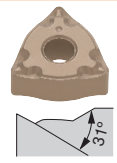
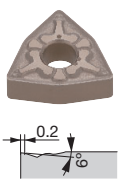
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

WN

Trigon, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	Coated T9215	Coated T9225	Coated T9235	RE	IC	S	D1
Finishing to medium cutting (Wiper)	SW	WNMG060408E-SW	●	●	●		0.8	9.525	4.76	3.81
		WNMG060412E-SW	●	●	●		1.2	9.525	4.76	3.81
		WNMG080408-SW	●	●	●		0.8	12.7	4.76	5.16
		WNMG080412-SW		●	●		1.2	12.7	4.76	5.16
		*Wiper insert								
	ASW	WNMG060408-ASW	●	●	●		0.8	9.525	4.76	3.81
		WNMG060412-ASW	●	●	●	●	1.2	9.525	4.76	3.81
		WNMG080408-ASW	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-ASW	●	●	●	●	1.2	12.7	4.76	5.16
High feed, small depth of cut	AS	WNMG080404-AS	●				0.4	12.7	4.76	5.16
		WNMG080408-AS	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-AS	●	●	●	●	1.2	12.7	4.76	5.16
Finishing	NS	WNMG080404-NS		●	●		0.4	12.7	4.76	5.16
		WNMG080408-NS		●	●		0.8	12.7	4.76	5.16
Boring (Double sided)	CB	WNMG060404-CB			●		0.4	9.525	4.76	3.81
		WNMG060408-CB			●		0.8	9.525	4.76	3.81
Medium cutting	TM	WNMG060404E-TM		●	●		0.4	9.525	4.76	3.81
		WNMG060408E-TM		●	●		0.8	9.525	4.76	3.81
		WNMG060412E-TM		●	●		1.2	9.525	4.76	3.81
		WNMG060404-TM		●	●	●	0.4	9.525	4.76	3.81
		WNMG060408-TM	●	●	●	●	0.8	9.525	4.76	3.81
		WNMG080404-TM	●	●	●	●	0.4	12.7	4.76	5.16
		WNMG080408-TM	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-TM	●	●	●	●	1.2	12.7	4.76	5.16
		WNMG080416-TM	●	●	●		1.6	12.7	4.76	5.16

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● : Line-up
● : New product

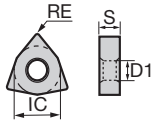
TurnLine - Insert NEGATIVE TYPE

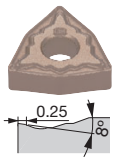
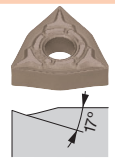
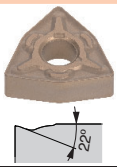
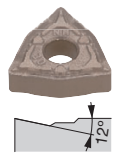
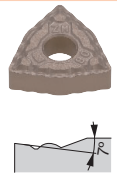
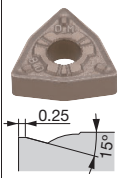
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing to medium cutting	**AM**	**WNMG080408-AM**		●	●		0.8	12.7	4.76	5.16
		WNMG080412-AM		●	●		1.2	12.7	4.76	5.16
		WNMG080416-AM		●	●		1.6	12.7	4.76	5.16
	TQ	**WNMG080404-TQ**		●	●		0.4	12.7	4.76	5.16
		WNMG080408-TQ		●	●		0.8	12.7	4.76	5.16
Medium cutting	**TA**	**WNMG080408-TA**		●	●		0.8	12.7	4.76	5.16
		WNMG080412-TA		●	●		1.2	12.7	4.76	5.16
Finishing to medium cutting	**NM**	**WNMG060412E-NM**			●		1.2	9.525	4.76	3.81
		**WNMG080408-NM**	●	●	●		0.8	12.7	4.76	5.16
		WNMG080412-NM	●	●	●	●	1.2	12.7	4.76	5.16
	ZM	**WNMG060408E-ZM**		●	●		0.8	9.525	4.76	3.81
		WNMG060408-ZM		●	●	●	0.8	9.525	4.76	3.81
		WNMG060412-ZM		●	●	●	1.2	9.525	4.76	3.81
		WNMG080408-ZM		●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-ZM	●	●	●	●	1.2	12.7	4.76	5.16
		WNMG080416-ZM		●	●		1.6	12.7	4.76	5.16
Medium cutting	**DM**	**WNMG080408-DM**	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-DM	●	●	●	●	1.2	12.7	4.76	5.16

● : Line-up
● : New product

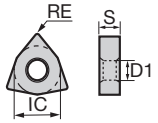
TurnLine - Insert NEGATIVE TYPE

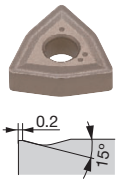
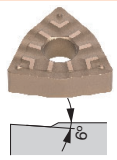
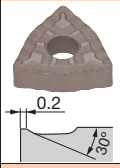
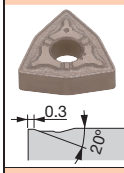
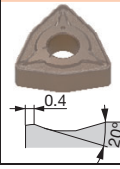
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

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



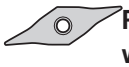
Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Medium cutting	All-round	WNMG060404		●	●		0.4	9.525	4.76	3.81
		WNMG060408		●	●		0.8	9.525	4.76	3.81
		WNMG080404	●	●	●	●	0.4	12.7	4.76	5.16
		WNMG080408	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412	●	●	●	●	1.2	12.7	4.76	5.16
		WNMG080416	●	●	●	●	1.6	12.7	4.76	5.16
Finishing to medium cutting	27	WNMG080408-27			●		0.8	12.7	4.76	5.16
										
Medium cutting	37	WNMG080408-37		●			0.8	12.7	4.76	5.16
										
Medium to heavy cutting	TH	WNMG080408-TH	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-TH	●	●	●	●	1.2	12.7	4.76	5.16
		WNMG080416-TH	●	●	●		1.6	12.7	4.76	5.16
		WNMG100612-TH		●	●		1.2	15.875	6.35	6.35
		WNMG100616-TH		●	●		1.6	15.875	6.35	6.35
	THS	WNMG080408-THS	●	●	●	●	0.8	12.7	4.76	5.16
		WNMG080412-THS	●	●	●	●	1.2	12.7	4.76	5.16
		WNMG080416-THS		●	●		1.6	12.7	4.76	5.16
		WNMG100612-THS		●	●	●	1.2	15.875	6.35	6.35
		WNMG100616-THS		●	●	●	1.6	15.875	6.35	6.35

● : Line-up
● : New product

TurnLine - Insert NEGATIVE TYPE

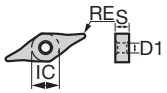
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

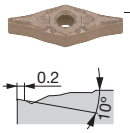
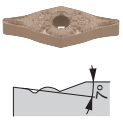
YN



Rhombic, 25° with hole

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



Application	Chipbreaker	Designation	Coated T9205	T9215	T9225	T9235	RE	IC	S	D1
Finishing	ZF	YNMG160404-ZF		●	●	●	0.4	9.525	4.76	3.81
		YNMG160408-ZF		●	●	●	0.8	9.525	4.76	3.81
										
Finishing to medium cutting	ZM	YNMG160404-ZM			●	●	0.4	9.525	4.76	3.81
		YNMG160408-ZM		●	●	●	0.8	9.525	4.76	3.81
										

● : Line-up
● : New product

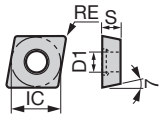
TurnLine - Insert POSITIVE TYPE

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

CC

Rhombic, 80° with hole Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	CCMT060204-PSF	●	●	0.4	6.35	2.38	2.8
		CCMT09T304-PSF	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-PSF	●	●	0.8	9.525	3.97	4.4
	PF	CCMT09T308-PF		●	0.8	9.525	3.97	4.4
Finishing to light cutting	PSS	CCMT060204-PSS	●	●	0.4	6.35	2.38	2.8
		CCMT060208-PSS	●	●	0.8	6.35	2.38	2.8
		CCMT09T304-PSS	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-PSS	●	●	0.8	9.525	3.97	4.4
		CCMT120404-PSS	●	●	0.4	12.7	4.76	5.5
		CCMT120408-PSS	●	●	0.8	12.7	4.76	5.5
		CCMT120412-PSS	●	●	1.2	12.7	4.76	5.5
Finishing to medium cutting	PS	CCMT060202-PS	●	●	0.2	6.35	2.38	2.8
		CCMT060204-PS	●	●	0.4	6.35	2.38	2.8
		CCMT060208-PS	●	●	0.8	6.35	2.38	2.8
		CCMT09T302-PS	●	●	0.2	9.525	3.97	4.4
		CCMT09T304-PS	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-PS	●	●	0.8	9.525	3.97	4.4
		CCMT120404-PS	●	●	0.4	12.7	4.76	5.5
		CCMT120408-PS	●	●	0.8	12.7	4.76	5.5
		CCMT120412-PS	●	●	1.2	12.7	4.76	5.5
	TM	CCMT060204-TM	●	●	0.4	6.35	2.38	2.8
		CCMT060208-TM	●	●	0.8	6.35	2.38	2.8
		CCMT09T304-TM	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-TM	●	●	0.8	9.525	3.97	4.4
	TSF	CCMT060204-TSF	●	●	0.4	6.35	2.38	2.8
		CCMT060208-TSF	●	●	0.8	6.35	2.38	2.8
		CCMT09T304-TSF	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-TSF	●	●	0.8	9.525	3.97	4.4

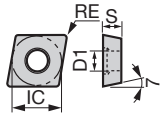
TurnLine - Insert POSITIVE TYPE

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

CC

Rhombic, 80° with hole Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting (Wiper)	SW	CCMT060204-SW	●	●	0.4	6.35	2.38	2.8
		CCMT060208-SW	●	●	0.8	6.35	2.38	2.8
		CCMT09T304-SW	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-SW	●	●	0.8	9.525	3.97	4.4
		*Wiper insert						
Finishing to medium cutting	23	CCMT060204-23		●	0.4	6.35	2.38	2.8
		CCMT060208-23		●	0.8	6.35	2.38	2.8
		CCMT09T304-23		●	0.4	9.525	3.97	4.4
		CCMT09T308-23		●	0.8	9.525	3.97	4.4
Medium cutting	24	CCMT060202-24		●	0.2	6.35	2.38	2.8
		CCMT060204-24	●	●	0.8	6.35	2.38	2.8
		CCMT060208-24	●	●	0.8	6.35	2.38	2.8
		CCMT09T302-24		●	0.2	9.525	3.97	4.4
		CCMT09T304-24	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-24	●	●	0.8	9.525	3.97	4.4
		CCMT120408-24	●	●	0.8	12.7	4.76	5.5
	PM	CCMT060204-PM	●	●	0.4	6.35	2.38	2.8
		CCMT060208-PM	●	●	0.8	6.35	2.38	2.8
		CCMT09T304-PM	●	●	0.4	9.525	3.97	4.4
		CCMT09T308-PM	●	●	0.8	9.525	3.97	4.4
		CCMT09T312-PM	●	●	1.2	9.525	3.97	4.4

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

● : Line-up
● : New product

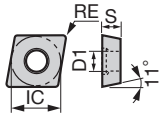
TurnLine - Insert POSITIVE TYPE

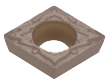
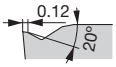
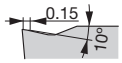
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

CP

Rhombic, 80° with hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	CPMT060204-PSF	●	●	0.4	6.35	2.38	2.8
		CPMT080204-PSF	●	●	0.4	7.94	2.38	3.4
		CPMT090304-PSF	●	●	0.4	9.525	3.18	4.4
		CPMT09T304-PSF	●	●	0.4	9.525	3.97	4.4
								
Finishing to light cutting	PSS	CPMT060204-PSS	●	●	0.4	6.35	2.38	2.8
		CPMT080204-PSS	●	●	0.4	7.94	2.38	3.4
		CPMT080208-PSS	●	●	0.8	7.94	2.38	3.4
		CPMT090304-PSS	●	●	0.4	9.525	3.18	4.4
		CPMT090308-PSS	●	●	0.8	9.525	3.18	4.4
		CPMT09T304-PSS	●	●	0.4	9.525	3.97	4.4
		CPMT09T308-PSS	●	●	0.8	9.525	3.97	4.4

● : Line-up
● : New product

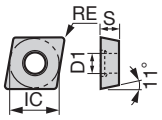
TurnLine - Insert POSITIVE TYPE

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

CP

Rhombic, 80° with hole Positive 11°

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



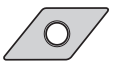
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	PS	CPMT060202-PS	●	●	0.2	6.35	2.38	2.8
		CPMT060204-PS	●	●	0.4	6.35	2.38	2.8
		CPMT080202-PS	●	●	0.2	7.94	2.38	3.4
		CPMT080204-PS	●	●	0.4	7.94	2.38	3.4
		CPMT080208-PS	●	●	0.8	7.94	2.38	3.4
		CPMT090304-PS	●	●	0.4	9.525	3.18	4.4
		CPMT090308-PS	●	●	0.8	9.525	3.18	4.4
		CPMT09T302-PS	●	●	0.2	9.525	3.97	4.4
		CPMT09T304-PS	●	●	0.4	9.525	3.97	4.4
		CPMT09T308-PS	●	●	0.8	9.525	3.97	4.4
	TM	CPMT09T304-TM	●	●	0.4	9.525	3.97	4.4
		CPMT09T308-TM	●	●	0.8	9.525	3.97	4.4
	TSF	CPMT09T304-TSF	●	●	0.4	9.525	3.97	4.4
		CPMT09T308-TSF	●	●	0.8	9.525	3.97	4.4
Medium cutting	24	CPMT080204-24	●		0.4	7.94	2.38	3.4
		CPMT080208-24		●	0.8	7.94	2.38	3.4
		CPMT090308-24		●	0.8	9.525	3.18	4.4
		CPMT160508-24		●	0.8	15.875	5.56	5.5
	PM	CPMT060208-PM		●	0.8	6.35	2.38	2.8
		CPMT090304-PM		●	0.4	9.525	3.18	4.4
		CPMT090308-PM		●	0.8	9.525	3.18	4.4

● : Line-up
● : New product

TurnLine - Insert POSITIVE TYPE

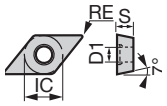
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

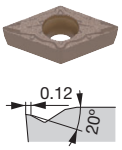
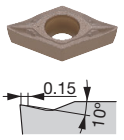
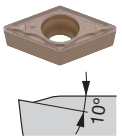
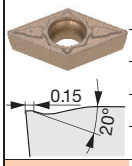
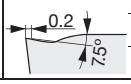
DC



Rhombic, 55° with hole
Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	DCMT070204-PSF	●	●	0.4	6.35	2.38	2.8
		DCMT11T304-PSF	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-PSF	●	●	0.8	9.525	3.97	4.4
								
Finishing to light cutting	PSS	DCMT070204-PSS	●	●	0.4	6.35	2.38	2.8
		DCMT070208-PSS	●	●	0.8	6.35	2.38	2.8
		DCMT11T304-PSS	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-PSS	●	●	0.8	9.525	3.97	4.4
		DCMT11T312-PSS	●	●	1.2	9.525	3.97	4.4
Finishing to medium cutting	PS	DCMT070202-PS	●	●	0.2	6.35	2.38	2.8
		DCMT070204-PS	●	●	0.4	6.35	2.38	2.8
		DCMT070208-PS	●	●	0.8	6.35	2.38	2.8
		DCMT11T302-PS	●	●	0.2	9.525	3.97	4.4
		DCMT11T304-PS	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-PS	●	●	0.8	9.525	3.97	4.4
		DCMT11T312-PS	●	●	1.2	9.525	3.97	4.4
	TM	DCMT070202-TM	●	●	0.2	6.35	2.38	2.8
		DCMT070204-TM	●	●	0.4	6.35	2.38	2.8
		DCMT070208-TM	●	●	0.8	6.35	2.38	2.8
		DCMT11T304-TM	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-TM	●	●	0.8	9.525	3.97	4.4
	TSF	DCMT070202-TSF	●	●	0.2	6.35	2.38	2.8
		DCMT070204-TSF	●	●	0.4	6.35	2.38	2.8
		DCMT070208-TSF	●	●	0.8	6.35	2.38	2.8
		DCMT11T304-TSF	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-TSF	●	●	0.8	9.525	3.97	4.4

● : Line-up
● : New product

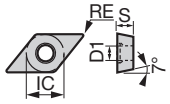
TurnLine - Insert POSITIVE TYPE

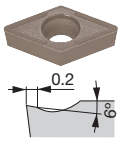
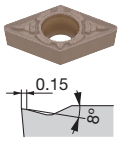
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

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



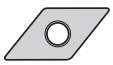
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Medium cutting	24	DCMT070204-24	●	●	0.4	6.35	2.38	2.8
		DCMT070208-24		●	0.8	6.35	2.38	2.8
		DCMT11T302-24		●	0.2	9.525	3.97	4.4
		DCMT11T304-24	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-24	●	●	0.8	9.525	3.97	4.4
	PM	DCMT070204-PM	●	●	0.4	6.35	2.38	2.8
		DCMT070208-PM	●	●	0.8	6.35	2.38	2.8
		DCMT11T304-PM	●	●	0.4	9.525	3.97	4.4
		DCMT11T308-PM	●	●	0.8	9.525	3.97	4.4
		DCMT11T312-PM		●	1.2	9.525	3.97	4.4

● : Line-up
● : New product

TurnLine - Insert POSITIVE TYPE

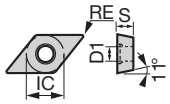
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

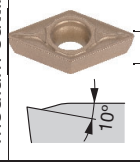
DP



Rhombic, 55° with hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	PS	DPMT070202-PS		●	0.2	6.35	2.38	2.8
		DPMT070204-PS		●	0.4	6.35	2.38	2.8
		DPMT070208-PS		●	0.8	6.35	2.38	2.8

● : Line-up
● : New product

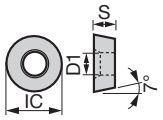
TurnLine - Insert POSITIVE TYPE

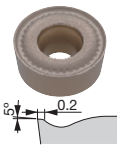
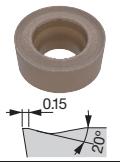
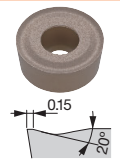
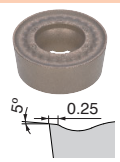
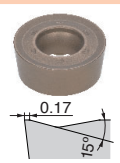
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

RC

Round, with hole Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	RS	RCMT10T3M0-RS	●	●	-	10	3.97	4.4
		RCMT1204M0-RS	●	●	-	12	4.76	4.4
		RCMT1606M0-RS	●	●	-	16	6.35	5.5
		RCMT2006M0-RS		●	-	20	6.35	6.5
		RCMT2507M0-RS		●	-	25	7.94	7.6
Heavy cutting	61	RCMT0502M0-61	●	●	-	5	2.38	2.5
		RCMT0602M0-61	●	●	-	6	2.38	2.8
		RCMT0803M0-61	●	●	-	8	3.18	3.4
	61	RCMM1003M0-61	●	●	-	10	3.18	3.6
		RCMM1204M0-61	●	●	-	12	4.76	4.2
		RCMM1606M0-61	●	●	-	16	6.35	5.2
		RCMM2006M0-61	●	●	-	20	6.35	6.5
		RCMM2507M0-61		●	-	25	7.94	7.2
Finishing (Low cutting force)	6RS	RCMT1204M0-6RS	●	●	-	12	4.76	5.16
								
Medium cutting	6RM	RCMT1204M0-6RM	●	●	-	12	4.76	5.16
								

● : Line-up
● : New product

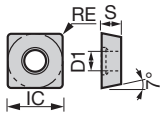
TurnLine - Insert POSITIVE TYPE

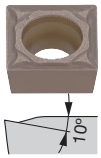
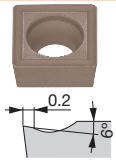
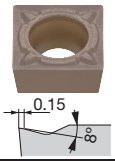
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

SC

Square, 90° with hole Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	PS	SCMT09T304-PS	●	●	0.4	9.525	3.97	4.4
		SCMT09T308-PS	●	●	0.8	9.525	3.97	4.4
		SCMT120404-PS	●	●	0.4	12.7	4.76	5.5
		SCMT120408-PS	●	●	0.8	12.7	4.76	5.5
	23	SCMT09T308-23		●	0.8	9.525	3.97	4.4
		SCMT120408-23		●	0.8	12.7	4.76	5.5
Medium cutting	24	SCMT070204-24		●	0.4	7.94	2.38	3.4
		SCMT09T304-24		●	0.4	9.525	3.97	4.4
		SCMT09T308-24	●	●	0.8	9.525	3.97	4.4
		SCMT120404-24		●	0.4	12.7	4.76	5.5
		SCMT120408-24		●	0.8	12.7	4.76	5.5
	PM	SCMT09T304-PM	●	●	0.4	9.525	3.97	4.4
		SCMT09T308-PM	●	●	0.8	9.525	3.97	4.4
		SCMT120408-PM	●	●	0.8	12.7	4.76	5.5
		SCMT120412-PM		●	1.2	12.7	4.76	5.5

● : Line-up
● : New product

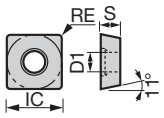
TurnLine - Insert POSITIVE TYPE

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

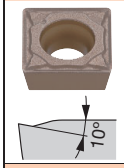
SP

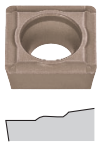
Square, 90° with hole Positive 11°

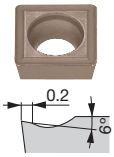
P	Steel	●ᑕ✣
M	Stainless	●ᑕ
K	Cast iron	●ᑕ
N	Non-ferrous	
S	Superalloys	
H	Hard materials	



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	PS	SPMT090304-PS	●	●	0.4	9.525	3.18	4.4
		SPMT090308-PS	●	●	0.8	9.525	3.18	4.4
		SPMT120404-PS	●	●	0.4	12.7	4.76	5.5
		SPMT120408-PS	●	●	0.8	12.7	4.76	5.5
	23	SPMT090304-23		●	0.4	9.525	3.18	4.4
		SPMT090308-23		●	0.8	9.525	3.18	4.4
Medium cutting	24	SPMT090304-24		●	0.4	9.525	3.18	4.4
		SPMT090308-24		●	0.8	9.525	3.18	4.4





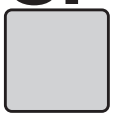


● : Line-up
● : New product

TurnLine - Insert POSITIVE TYPE

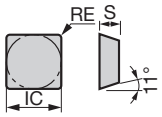
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP



Square, 90°
without hole
Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	23	SPMR090308-23		●	0.8	9.525	3.18	-
		SPMR120304-23		●	0.4	12.7	3.18	-
		SPMR120308-23		●	0.8	12.7	3.18	-

● : Line-up
● : New product

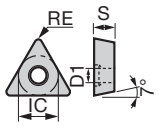
TurnLine - Insert POSITIVE TYPE

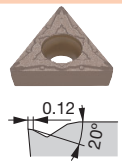
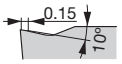
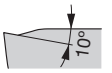
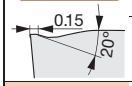
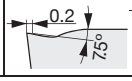
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60°
with hole
Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	TCMT090204-PSF	●	●	0.4	5.56	2.38	2.5
		TCMT110204-PSF	●	●	0.4	6.35	2.38	2.8
		TCMT11030**4**-PSF	●	●	0.4	6.35	3.18	2.8
		TCMT16T304-PSF	●	●	0.4	9.525	3.97	4.4
Finishing to light cutting	PSS	TCMT090204-PSS	●	●	0.4	5.56	2.38	2.5
		TCMT0902**08**-PSS	●	●	0.8	5.56	2.38	2.5
		TCMT110204-PSS	●	●	0.4	6.35	2.38	2.8
		TCMT1102**08**-PSS	●	●	0.8	6.35	2.38	2.8
		TCMT110304-PSS	●	●	0.4	6.35	3.18	2.8
		TCMT1103**08**-PSS	●	●	0.8	6.35	3.18	2.8
		TCMT16T304-PSS	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08**-PSS	●	●	0.8	9.525	3.97	4.4
		TCMT16T3**12**-PSS	●	●	1.2	9.525	3.97	4.4
Finishing to medium cutting	PS	TCMT110202-PS	●	●	0.2	6.35	2.38	2.8
		TCMT1102**04**-PS	●	●	0.4	6.35	2.38	2.8
		TCMT1102**08**-PS	●	●	0.8	6.35	2.38	2.8
		TCMT110302-PS	●	●	0.2	6.35	3.18	2.8
		TCMT1103**04**-PS	●	●	0.4	6.35	3.18	2.8
		TCMT1103**08**-PS	●	●	0.8	6.35	3.18	2.8
		TCMT16T302-PS	●	●	0.2	9.525	3.97	4.4
		TCMT16T3**04**-PS	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08**-PS	●	●	0.8	9.525	3.97	4.4
	TM	TCMT110204-TM	●	●	0.4	6.35	2.38	2.8
		TCMT1102**08**-TM	●	●	0.8	6.35	2.38	2.8
		TCMT16T304-TM	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08**-TM	●	●	0.8	9.525	3.97	4.4
								
	TSF	TCMT110204-TSF	●	●	0.4	6.35	2.38	2.8
		TCMT1102**08**-TSF	●	●	0.8	6.35	2.38	2.8
		TCMT16T304-TSF	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08**-TSF	●	●	0.8	9.525	3.97	4.4
								

● : Line-up
● : New product

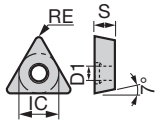
TurnLine - Insert POSITIVE TYPE

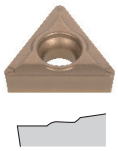
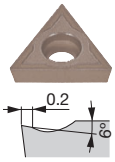
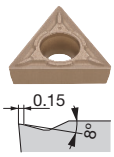
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

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	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	23	TCMT090204-23		●	0.4	5.56	2.38	2.5
		TCMT16T308-23		●	0.8	9.525	3.97	4.4
								
Medium cutting	24	TCMT090204-24	●	●	0.4	5.56	2.38	2.5
		TCMT110204-24	●	●	0.4	6.35	2.38	2.8
		TCMT11020**8-24**		●	0.8	6.35	2.38	2.8
		TCMT16T304-24	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08-24**	●	●	0.8	9.525	3.97	4.4
	PM	TCMT110204-PM	●	●	0.4	6.35	2.38	2.8
		TCMT11020**8-PM**	●	●	0.8	6.35	2.38	2.8
		TCMT16T304-PM	●	●	0.4	9.525	3.97	4.4
		TCMT16T3**08-PM**	●	●	0.8	9.525	3.97	4.4
		TCMT16T3**12-PM**	●	●	1.2	9.525	3.97	4.4

● : Line-up
● : New product

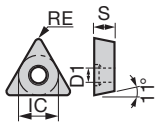
TurnLine - Insert POSITIVE TYPE

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

TP

Triangular, 60° with hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	TPMT090204-PSF	●	●	0.4	5.56	2.38	2.5
		TPMT110204-PSF	●	●	0.4	6.35	2.38	2.8
		TPMT110304-PSF	●	●	0.4	6.35	3.18	2.8
		TPMT130304-PSF	●	●	0.4	7.94	3.18	3.4
		TPMT16T304-PSF	●	●	0.4	9.525	3.97	4.4
Finishing to light cutting	PSS	TPMT090204-PSS	●	●	0.4	5.56	2.38	2.5
		TPMT090208-PSS	●	●	0.8	5.56	2.38	2.5
		TPMT110204-PSS	●	●	0.4	6.35	2.38	2.8
		TPMT110208-PSS	●	●	0.8	6.35	2.38	2.8
		TPMT110304-PSS	●	●	0.4	6.35	3.18	3.4
		TPMT110308-PSS	●	●	0.8	6.35	3.18	3.4
		TPMT130304-PSS	●	●	0.4	7.94	3.18	3.4
		TPMT130308-PSS	●	●	0.8	7.94	3.18	3.4
		TPMT16T304-PSS	●	●	0.4	9.525	3.97	4.4
		TPMT16T308-PSS	●	●	0.8	9.525	3.97	4.4
Finishing to medium cutting	PS	TPMT090202-PS	●	●	0.2	5.56	2.38	2.5
		TPMT090204-PS	●	●	0.4	5.56	2.38	2.5
		TPMT090208-PS	●	●	0.8	5.56	2.38	2.5
		TPMT110202-PS	●	●	0.2	6.35	2.38	2.8
		TPMT110204-PS	●	●	0.4	6.35	2.38	2.8
		TPMT110208-PS	●	●	0.8	6.35	2.38	2.8
		TPMT110304-PS	●	●	0.4	6.35	3.18	3.4
		TPMT110308-PS	●	●	0.8	6.35	3.18	3.4
		TPMT130302-PS	●	●	0.2	7.94	3.18	3.4
		TPMT130304-PS	●	●	0.4	7.94	3.18	3.4
		TPMT130308-PS	●	●	0.8	7.94	3.18	3.4
		TPMT16T304-PS	●	●	0.4	9.525	3.97	4.4
		TPMT16T308-PS	●	●	0.8	9.525	3.97	4.4
	TM	TPMT110204-TM	●	●	0.4	6.35	2.38	2.8
		TPMT110208-TM	●	●	0.8	6.35	2.38	2.8
		TPMT110304-TM	●	●	0.4	6.35	3.18	3.4
		TPMT110308-TM	●	●	0.8	6.35	3.18	3.4
		TPMT16T304-TM	●	●	0.4	9.525	3.97	4.4
		TPMT16T308-TM	●	●	0.8	9.525	3.97	4.4
	TSF	TPMT110204-TSF	●	●	0.4	6.35	2.38	2.8
		TPMT110208-TSF	●	●	0.8	6.35	2.38	2.8
		TPMT110304-TSF	●	●	0.4	6.35	3.18	3.4
		TPMT110308-TSF	●	●	0.8	6.35	3.18	3.4
		TPMT16T304-TSF	●	●	0.4	9.525	3.97	4.4
		TPMT16T308-TSF	●	●	0.8	9.525	3.97	4.4

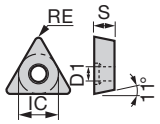
TurnLine - Insert POSITIVE TYPE

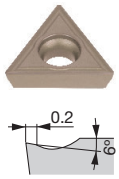
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	23	TPMT090204-23		●	0.4	5.56	2.38	2.5
		TPMT110204-23		●	0.4	6.35	2.38	2.8
		TPMT130304-23		●	0.4	7.94	3.18	3.4
		TPMT130308-23		●	0.8	7.94	3.18	3.4
		TPMT16T308-23		●	0.8	9.525	3.97	3.4
Medium cutting	24	TPMT090204-24		●	0.4	5.56	2.38	2.5
		TPMT110204-24		●	0.4	6.35	2.38	2.8
		TPMT130304-24		●	0.4	7.94	3.18	3.4
		TPMT130308-24		●	0.8	7.94	3.18	3.4
		TPMT16T304-24		●	0.4	9.525	3.97	4.4
		TPMT16T308-24		●	0.8	9.525	3.97	4.4
	PM	TPMT110204-PM	●	●	0.4	6.35	2.38	2.8
		TPMT110208-PM	●	●	0.8	6.35	2.38	2.8
		TPMT110304-PM	●	●	0.4	6.35	3.18	3.4
		TPMT110308-PM	●	●	0.8	6.35	3.18	3.4
		TPMT130304-PM		●	0.4	7.94	3.18	3.4
		TPMT130308-PM		●	0.8	7.94	3.18	3.4
		TPMT16T304-PM		●	0.4	9.525	3.97	4.4
		TPMT16T308-PM		●	0.8	9.525	3.97	4.4
		TPMT16T312-PM		●	1.2	9.525	3.97	4.4

● : Line-up
● : New product

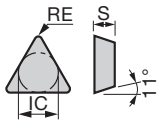
TurnLine - Insert POSITIVE TYPE

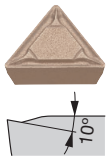
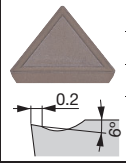
● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° without hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	PS	TPMR110304-PS		●	0.4	6.35	3.18	-
		TPMR110308-PS		●	0.8	6.35	3.18	-
		TPMR160304-PS		●	0.4	9.525	3.18	-
		TPMR160308-PS		●	0.8	9.525	3.18	-
	23	TPMR110304-23	●	●	0.4	6.35	3.18	-
		TPMR110308-23		●	0.8	6.35	3.18	-
		TPMR160304-23	●	●	0.4	9.525	3.18	-
		TPMR160308-23		●	0.8	9.525	3.18	-
Medium cutting	24	TPMR110304-24		●	0.4	6.35	3.18	-
		TPMR110308-24		●	0.8	6.35	3.18	-
		TPMR160304-24	●	●	0.4	9.525	3.18	-
		TPMR160308-24	●	●	0.8	9.525	3.18	-

● : Line-up
● : New product

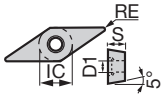
TurnLine - Insert POSITIVE TYPE

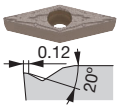
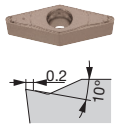
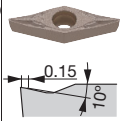
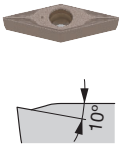
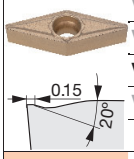
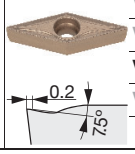
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB

Rhombic, 35°
with hole
Positive 5°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	VBMT110304-PSF	●	●	0.4	6.35	3.18	2.8
		VBMT160404-PSF	●	●	0.4	9.525	4.76	4.4
								
	PF	VBMT110308-PF		●	0.8	6.35	3.18	2.8
		VBMT160408-PF		●	0.8	9.525	4.76	4.4
								
Finishing to light cutting	PSS	VBMT110304-PSS	●	●	0.4	6.35	3.18	2.8
		VBMT110308-PSS	●	●	0.8	6.35	3.18	2.8
		VBMT160404-PSS	●	●	0.4	9.525	4.76	4.4
		VBMT160408-PSS	●	●	0.8	9.525	4.76	4.4
		VBMT160412-PSS	●	●	1.2	9.525	4.76	4.4
Finishing to medium cutting	PS	VBMT110302-PS	●	●	0.2	6.35	3.18	2.8
		VBMT110304-PS	●	●	0.4	6.35	3.18	2.8
		VBMT110308-PS	●	●	0.8	6.35	3.18	2.8
		VBMT160402-PS	●	●	0.2	9.525	4.76	4.4
		VBMT160404-PS	●	●	0.4	9.525	4.76	4.4
		VBMT160408-PS	●	●	0.8	9.525	4.76	4.4
	TM	VBMT110302-TM	●	●	0.2	6.35	3.18	2.8
		VBMT110304-TM	●	●	0.4	6.35	3.18	2.8
		VBMT110308-TM	●	●	0.8	6.35	3.18	2.8
		VBMT160404-TM	●	●	0.4	9.525	4.76	4.4
		VBMT160408-TM	●	●	0.8	9.525	4.76	4.4
	TSF	VBMT110302-TSF	●	●	0.2	6.35	3.18	2.8
		VBMT110304-TSF	●	●	0.4	6.35	3.18	2.8
		VBMT110308-TSF	●	●	0.8	6.35	3.18	2.8
		VBMT160404-TSF	●	●	0.4	9.525	4.76	4.4
		VBMT160408-TSF	●	●	0.8	9.525	4.76	4.4

● : Line-up
● : New product

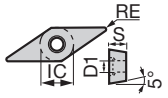
TurnLine - Insert POSITIVE TYPE

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

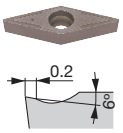
VB

Rhombic, 35° with hole Positive 5°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Medium cutting	24	VBMT160404-24	●	●	0.4	9.525	4.76	4.4
		VBMT160408-24	●	●	0.8	9.525	4.76	4.4



● : Line-up
● : New product

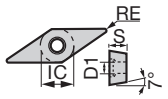
TurnLine - Insert POSITIVE TYPE

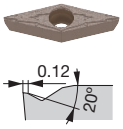
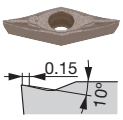
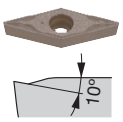
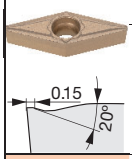
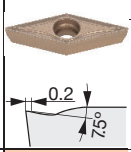
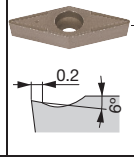
● : Continuous cutting
ᑕ : Light interrupted cutting
✠ : Heavy interrupted cutting

VC

Rhombic, 35°
with hole
Positive 7°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing	PSF	VCMT080204-PSF	●	●	0.4	4.76	2.38	2.3
		VCMT110304-PSF	●	●	0.4	6.35	3.18	2.8
		VCMT160404-PSF	●	●	0.4	9.525	4.76	4.4
		VCMT160408-PSF	●	●	0.8	9.525	4.76	4.4
								
Finishing to light cutting	PSS	VCMT110304-PSS	●	●	0.4	6.35	3.18	2.8
		VCMT110308-PSS	●	●	0.8	6.35	3.18	2.8
		VCMT160404-PSS	●	●	0.4	9.525	4.76	4.4
		VCMT160408-PSS	●	●	0.8	9.525	4.76	4.4
								
Finishing to medium cutting	PS	VCMT110302-PS	●	●	0.2	6.35	3.18	2.8
		VCMT110304-PS	●	●	0.4	6.35	3.18	2.8
		VCMT110308-PS	●	●	0.8	6.35	3.18	2.8
		VCMT160404-PS	●	●	0.4	9.525	4.76	4.4
		VCMT160408-PS	●	●	0.8	9.525	4.76	4.4
								
	TM	VCMT160404-TM	●	●	0.4	9.525	4.76	4.4
		VCMT160408-TM	●	●	0.8	9.525	4.76	4.4
								
	TSF	VCMT160404-TSF	●	●	0.4	9.525	4.76	4.4
		VCMT160408-TSF	●	●	0.8	9.525	4.76	4.4
								
Medium cutting	24	VCMT160404-24	●	●	0.4	9.525	4.76	4.4
		VCMT160408-24	●	●	0.8	9.525	4.76	4.4
								

● : Line-up
● : New product

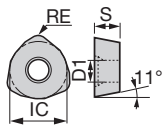
TurnLine - Insert POSITIVE TYPE

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

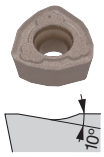
WP

Trigon, 80° with hole Positive 11°

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



Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Heavy cutting	ML	WPMT090725ZPR-ML	●	●	-	15	7	5.5
		WPMT090725ZPL-ML	●	●	-	15	7	5.5



● : Line-up
● : New product

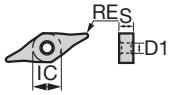
TurnLine - Insert POSITIVE TYPE

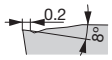
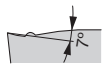
● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

YW

Rhombic, 25°
with hole
Positive 7°

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



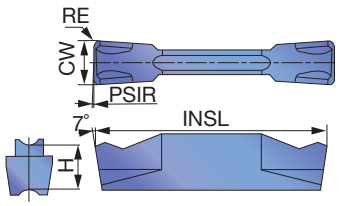
Application	Chipbreaker	Designation	Coated T9215	Coated T9225	RE	IC	S	D1
Finishing to medium cutting	ZF	YWMT11T202-ZF		●	0.2	4.679	2.78	2.3
		YWMT11T204-ZF		●	0.4	4.679	2.78	2.3
		YWMT16T302-ZF		●	0.2	7.018	3.97	2.86
		YWMT16T304-ZF		●	0.4	7.018	3.97	2.86
		YWMT16T308-ZF		●	0.8	7.018	3.97	2.86
	ZM	YWMT11T204-ZM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

TurnLine -
Inserts for grooving and parting off

DGM

External grooving and parting off, 2 corner

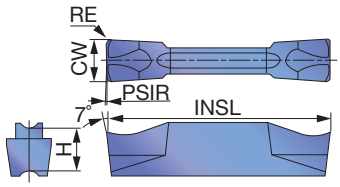


Designation	Insert seat size	CW±0.05	RE	Coated			
				T9225	INSL	H	PSIRR/L
DGM2-020	2	2	0.2	●	20	5	0
DGM3-020	3	3	0.2	●	20	5	0
DGM4-030	4	4	0.3	●	20	5	0
DGM5-030	5	5	0.3	●	25	5.5	0
DGM6-030	6	6	0.3	●	25	5.5	0
DGM8-040	8	8	0.4	●	30	6.7	0

● : New product

DGS

External grooving and parting off, 2 corner

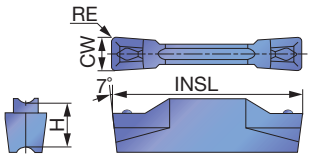


Designation	Insert seat size	CW±0.05	RE	Coated			
				T9225	INSL	H	PSIRR/L
DGS2-020	2	2	0.2	●	20	5	0
DGS3-020	3	3	0.2	●	20	5	0
DGS4-030	4	4	0.3	●	20	5	0
DGS5-030	5	5	0.3	●	25	5.5	0
DGS6-030	6	6	0.3	●	25	5.5	0

● : New product

DTE

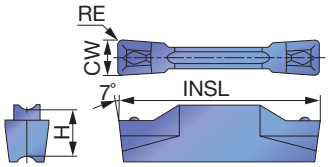
External, grooving and turning



Designation	Insert seat size	CW±0.02	RE	Coated T9225	INSL	H
DTE265-015	3	2.65	0.15	●	20	5
DTE300-020	3	3	0.2	●	20	5
DTE300-040	3	3	0.4	●	20	5
DTE315-015	3	3.15	0.15	●	20	5
DTE400-040	4	4	0.4	●	20	5
DTE400-080	4	4	0.8	●	20	5
DTE415-015	4	4.15	0.15	●	20	5
DTE478-055	5	4.78	0.55	●	25	5.5
DTE500-040	5	5	0.4	●	25	5.5
DTE500-080	5	5	0.8	●	25	5.5
DTE515-015	5	5.15	0.15	●	25	5.5
DTE600-080	6	6	0.8	●	25	5.5
DTE600-120	6	6	1.2	●	25	5.5
DTE800-080	8	8	0.8	●	30	6.7
DTE800-120	8	8	1.2	●	30	6.7

● : New product

External, grooving and turning

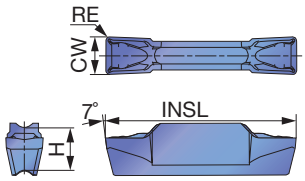


Designation	Insert seat size	CW±0.05	RE	Coated T9225	INSL	H
DTE3-040	3	3	0.4	●	20	5
DTE4-040	4	4	0.4	●	20	5

● : New product

DTX

External, internal, face grooving and traversing

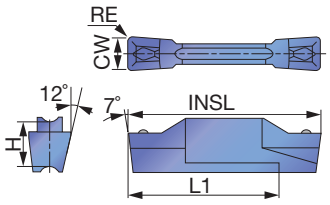


Designation	Insert seat size	CW±0.05	RE	Coated T9225	INSL	H
DTX3-030	3	3	0.3	●	20	5
DTX4-040	4	4	0.4	●	20	5
DTX5-040	5	5	0.4	●	25	5.5

● : New product

DTF

Face grooving and traversing

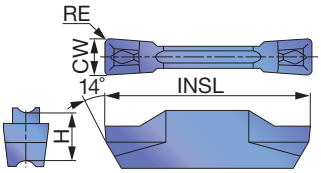


Designation	Insert seat size	CW±0.05	RE	Coated T9225 R	Coated T9225 L	INSL	H	L1
DTF3-040-R/L	3	3	0.4	●	●	20	5	16
DTF4-040-R/L	4	4	0.4	●	●	20	5	16

● : New product

DTI

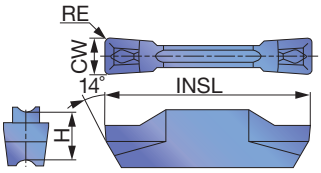
Internal grooving and turning (for high-precision machining)



Designation	Insert seat size	CW±0.02	RE	Coated T9225	INSL	H
DTI300-040	3	3	0.4	●	20	5
DTI400-040	4	4	0.4	●	20	5
DTI400-080	4	4	0.8	●	20	5
DTI500-040	5	5	0.4	●	25	5.5
DTI500-080	5	5	0.8	●	25	5.5
DTI600-080	6	6	0.8	●	25	5.5
DTI600-120	6	6	1.2	●	25	5.5
DTI800-080	8	8	0.8	●	30	6.7
DTI800-120	8	8	1.2	●	30	6.7

● : New product

Internal grooving and turning

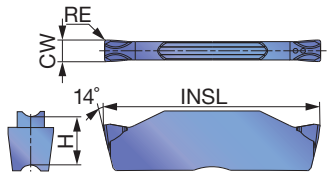


Designation	Insert seat size	CW±0.05	RE	Coated T9225	INSL	H
DTI3-040	3	3	0.4	●	20	5
DTI4-040	4	4	0.4	●	20	5

● : New product

DGIM

Small diameter internal grooving

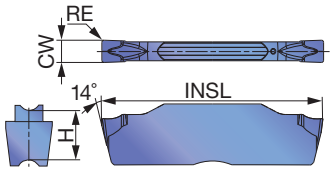


Designation	Insert seat size	CW±0.05	RE	Coated T9225	INSL	H
DGIM2-020	2	2	0.2	●	20	5

● : New product

DGIS

Small diameter internal grooving

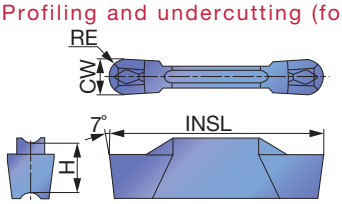


Designation	Insert seat size	W±0.05	RE	Coated T9225	INSL	H
DGIS2-020	2	2	0.2	●	20	5

● : New product

DTR

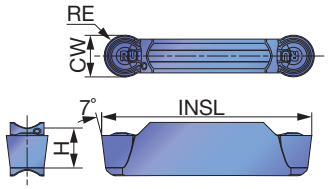
Profiling and undercutting (for high-precision machining)



Designation	Insert seat size	CW±0.02	RE	Coated T9225	INSL	H
DTR300-150	3	3	1.5	●	20	5
DTR400-200	4	4	2	●	20	5
DTR478-239	5	4.78	2.39	●	25	5.5
DTR500-250	5	5	2.5	●	25	5.5
DTR600-300	6	6	3	●	25	5.5

● : New product

Profiling and undercutting

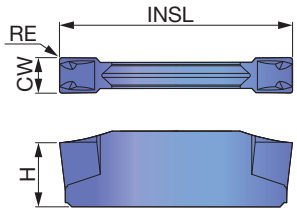


Designation	Insert seat size	CW±0.05	RE	Coated T9225	INSL	H
DTR3-150	3	3	1.5	●	20	5
DTR4-200	4	4	2	●	20	5
DTR5-250	5	5	2.5	●	25	5.5
DTR6-300	6	6	3	●	25	5.5
DTR8-400	8	8	4	●	30	6.7

● : New product

WGE

For general parting off and grooving

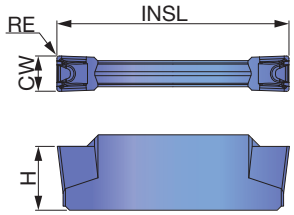


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
WGE20	2	0.2	●	20	4.7
WGE30	3	0.2	●	20	5.5
WGE40	4	0.2	●	25	5.7
WGE50	5	0.2	●	25	5.9

● : New product

WGT

Traversing (Grooving and parting off)

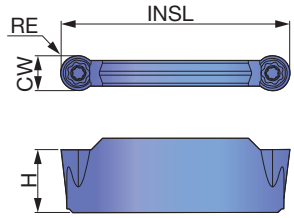


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
WGT30	3	0.4	●	20	5.5
WGT40	4	0.4	●	25	5.7
WGT50	5	0.4	●	25	5.9

● : New product

WGR

Profiling (Full radius)

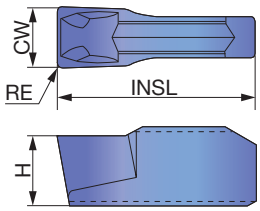


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
WGR30	3	1.5	●	20	5.5
WGR40	4	2	●	25	5.7

● : New product

GE

Grooving and parting off

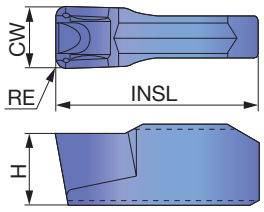


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
GE30	3	0.2	●	10	3.5
GE40	4	0.2	●	10	4
GE50	5	0.2	●	12	4.5

● : New product

GT

Traversing (Grooving and parting off)

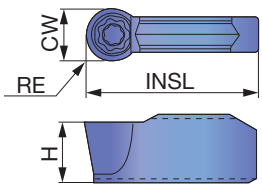


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
GT50	5	0.4	●	12	4.5

● : New product

GR

Profiling (Full radius)

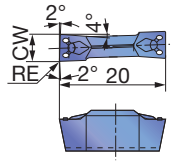


Designation	$CW^{+0.1}_{0}$	RE	Coated	INSL	H
			T9225		
GR40	4	2.0	●	10	4
GR50	5	2.5	●	12	4.5

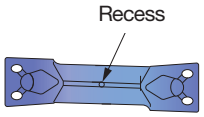
● : New product

FLEX(R/L)

External, face and internal grooving



Right hand (R) shown.



Left hand inserts are identified with a recessed dot.

Designation	$CW_{\pm 0.05}$	RE	Coated	
			T9225	
			R	L
FLEX50R/L	5	0.4	●	●

● : New product

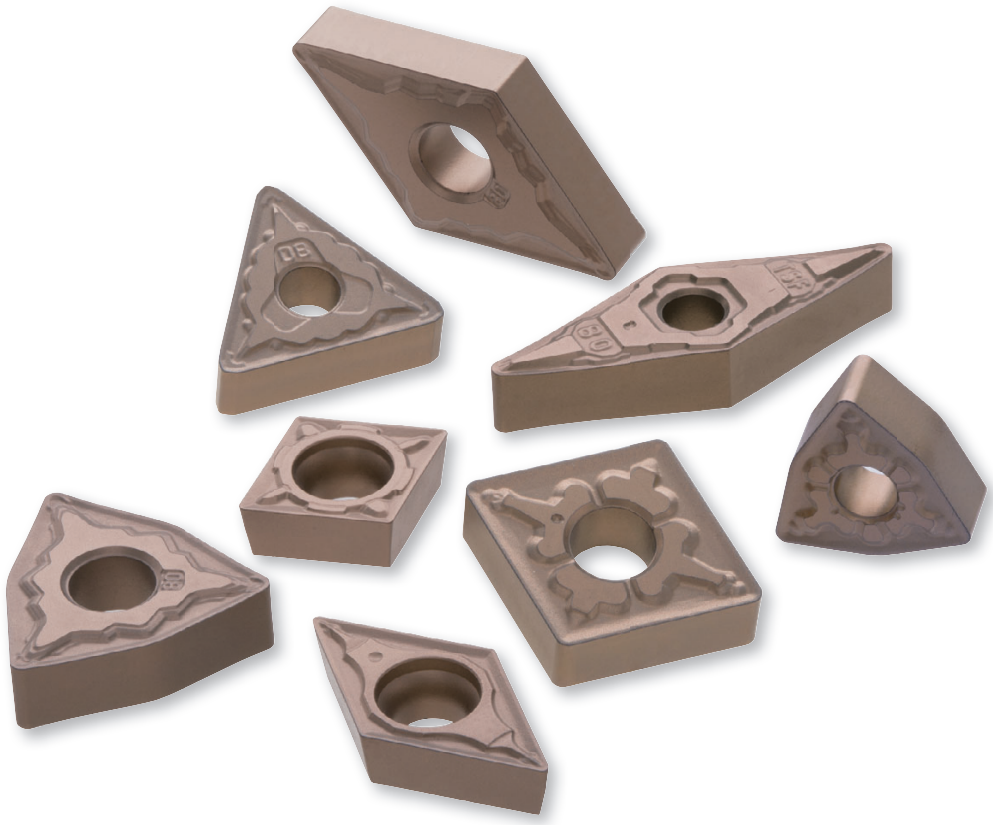
Standard cutting conditions

For Negative Inserts

ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	TSF	T9205	0.2 - 1.5	0.08 - 0.4	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
		AS	T9205	0.2 - 1.5	0.08 - 0.4	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
		FW	T9205	0.2 - 1.5	0.08 - 0.4	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
	Medium cutting	TM	T9205	1.0 - 5.0	0.2 - 0.5	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
		AM	T9205	1.5 - 4.5	0.2 - 0.6	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
		SW	T9205	0.5 - 2.0	0.3 - 0.6	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
	Medium to heavy cutting	TH	T9205	3.0 - 6.0	0.3 - 0.6	180 - 400	180 - 400	150 - 350
			T9215			150 - 400	150 - 400	120 - 300
			T9225			120 - 300	120 - 300	100 - 250
			T9235			50 - 200	50 - 200	50 - 150
							Stainless steel	
M	Finishing	TSF	T9215	0.2 - 1.5	0.08 - 0.4		100 - 250	
			T9225					
	Medium cutting	TM	T9215	1.0 - 5.0	0.2 - 0.5		100 - 250	
			T9225					
							Cast iron	
K	Finishing	TSF	T9215	0.2 - 1.5	0.08 - 0.4		140 - 500	
			T9225					
	Medium cutting	TM	T9215	1.0 - 5.0	0.2 - 0.5		140 - 500	
			T9225					

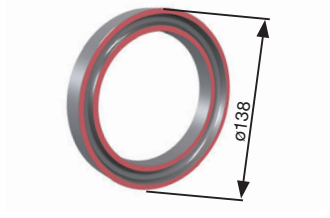
For Positive Inserts

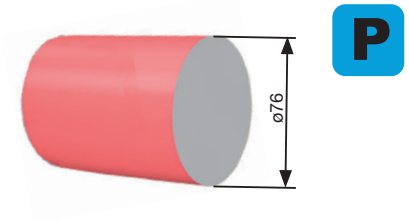
ISO	Operation	Chipbreaker	Grades	Depth of cut *ap* (mm)	Feed *f* (mm/rev)	Cutting speed: *Vc* (m/min) Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3	120 - 350	100 - 350	80 - 250
			T9225			100 - 300	80 - 300	80 - 250
	Medium	TSF	T9215	0.5 - 2.5	0.1 - 0.25	120 - 350	100-350	80-250
			T9225			100 - 300	80 - 300	80 - 250
		TM	T9215	0.25 - 3.0	0.06 - 0.26	120 - 350	100 - 350	80 - 250
			T9225			100 - 300	80 - 300	80 - 250
	Medium cutting	PS	T9215	0.5 - 2.5	0.08 - 0.3	120 - 300	100 - 300	80 - 250
			T9225			100 - 300	80 - 250	80 - 200
		SW	T9215	0.5 - 2	0.15 - 0.4	150 - 350	150 - 350	120 - 300
			T9225			100 - 300	100 - 300	80 - 250
	Medium to heavy cutting	PM	T9215	1.0 - 3.0	0.15 - 0.3	120 - 300	100 - 300	80 - 200
			T9225			100 - 300	80 - 300	80 - 200
							Stainless steel	
M	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3		50 - 200	
			T9225					
	Medium	PS	T9215	0.5 - 2.5	0.08 - 0.3		50 - 200	
			T9225					
							Cast iron	
K	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3		100 - 350	
			T9225					
	Medium	PS	T9215	0.5 - 2.5	0.08 - 0.3		100 - 350	
			T9225					

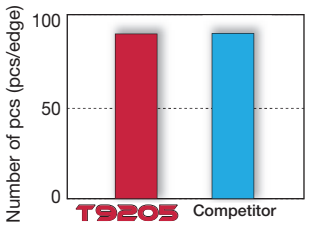


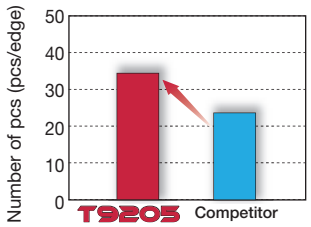
PRACTICAL EXAMPLES

Workpiece type		Automotive part	Machine parts
Insert		DNMG150412-DM	CNMG120408-TM
Grade		**T9205**	**T9205**
Workpiece material		S45C / C45	Alloy steel
Cutting conditions	Cutting speed: *Vc* (m/min)	250	170
	Feed : *f* (mm/rev)	0.3	0.35 → 0.45
	Depth of cut : *ap* (mm)	1.0	2.0
	Coolant	Wet	Wet
Results		Stable tool life!	Tool life 1.5 times!





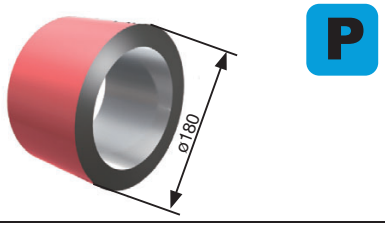


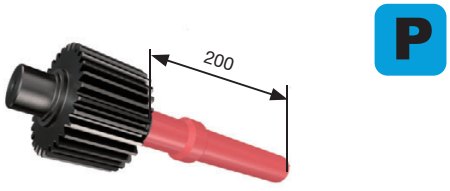


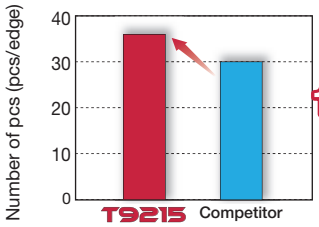
Premature insert failures and fractures induced by excessive crater wear development were issues with the conventional grade. T9205 eliminated these issues, providing stability.

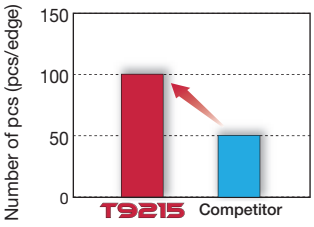
T9205 allowed a higher feed rate to be applied, improving tool life by 1.5x over conventional grade.

Workpiece type		Carrier	Top shaft
Insert		WNMG080408-SW	CNMG120408-AM
Grade		**T9215**	**T9215**
Workpiece material		S45C / C45	Alloy steel
Cutting conditions	Cutting speed: *Vc* (m/min)	300	250
	Feed : *f* (mm/rev)	0.4	0.25 - 0.35
	Depth of cut : *ap* (mm)	1.0	2.0
	Coolant	Wet	Wet
Results		Tool life 1.2 times!	Tool life 2 times!







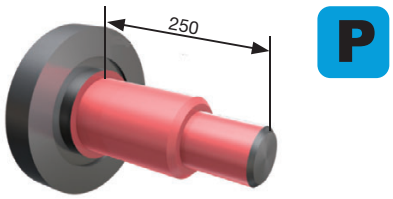


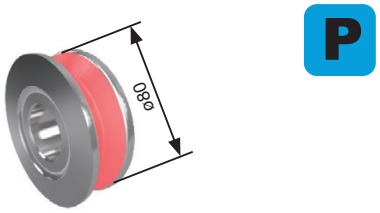
Combination of T9215 and the latest Wiper series provides a stabler and longer tool life (about 1.2x) compared to the current product.

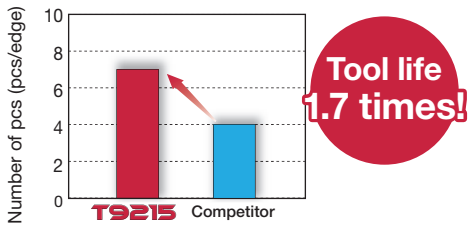
T9215 is superior in wear resistance and fracture resistance, providing twice the stable long life as the current product!

PRACTICAL EXAMPLES

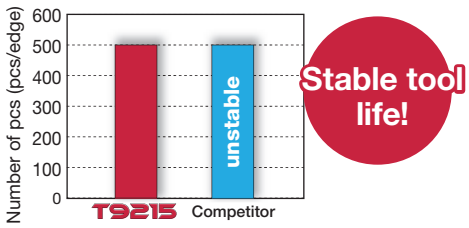
	Workpiece type	Shaft	Bearing part
	Insert	CNMG120408-TM	DNMG150408-AM
	Grade	**T9215**	**T9215**
	Workpiece material	SCM440 / 42CrMo4	SUJ2 / B1
Cutting conditions	Cutting speed: *Vc* (m/min)	250	250
	Feed : *f* (mm/rev)	0.3	0.25 - 0.35
	Depth of cut : *ap* (mm)	3.5	0.25
	Coolant	Wet	Wet
	Results	Tool life 1.7 times!	Stable tool life!





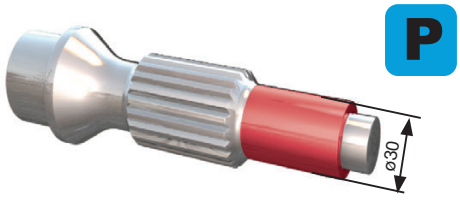


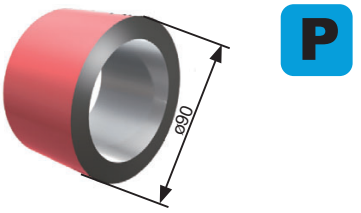
T9215 has excellent balance between wear resistance and chipping resistance, achieving a stable long life of about 1.7 times that of the current product!

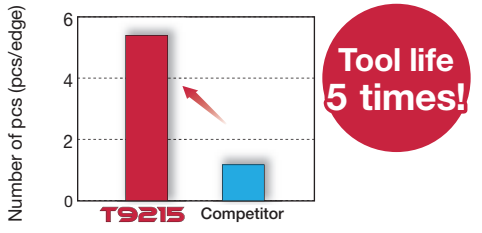


T9215 decreases the occurrence of sudden breakage and achieves stable processing!

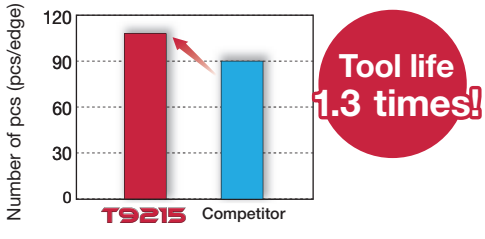
	Workpiece type	Shaft	Pipe
	Insert	DNMG150412-TM	DNMG150608-TM
	Grade	**T9215**	**T9215**
	Workpiece material	SCM440 / 42CrMo4	SM490 / E355D
Cutting conditions	Cutting speed: *Vc* (m/min)	140	200
	Feed : *f* (mm/rev)	0.38	0.35
	Depth of cut : *ap* (mm)	4mm x 6 pass	3
	Coolant	Wet	Wet
	Results	Tool life 5 times!	Tool life 1.3 times!





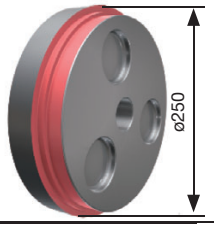
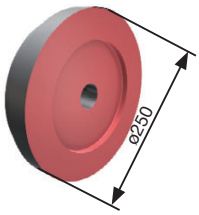
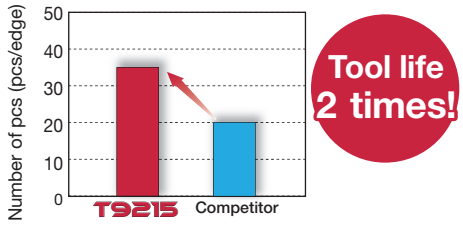
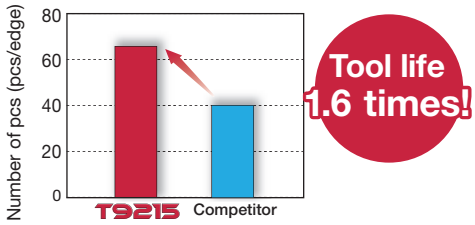


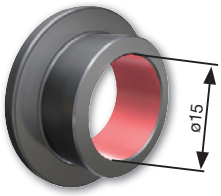
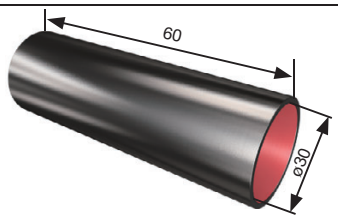
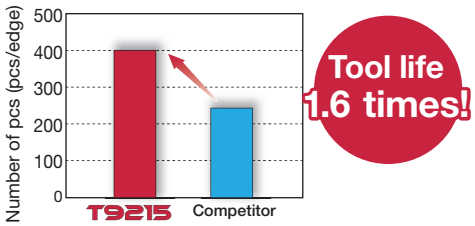
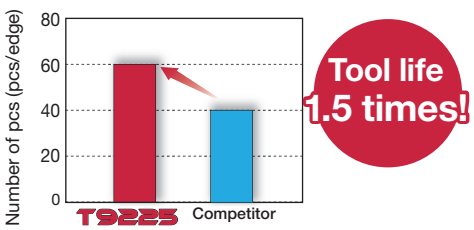
T9215 demonstrates exceptional wear resistance, combined with the optimization of the tool path, achieves a stable long life of about 5 times that of the current product!



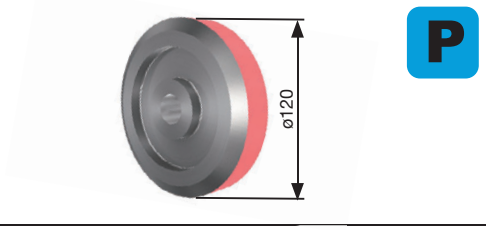
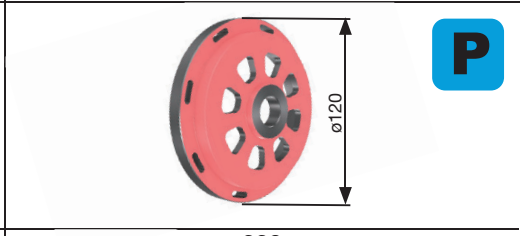
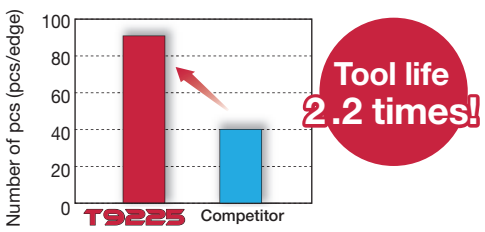
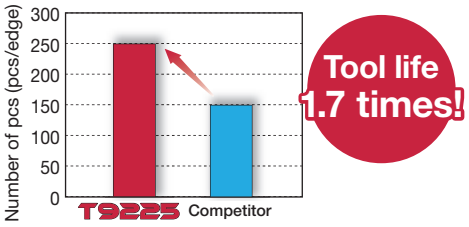
With exceptional wear resistance and optimization of processing conditions, T9215 achieves about 1.3 times longer tool life than the current product! In addition, we succeeded in greatly shortening machining time!

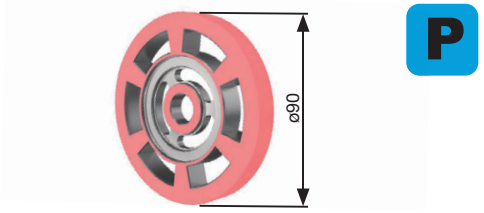
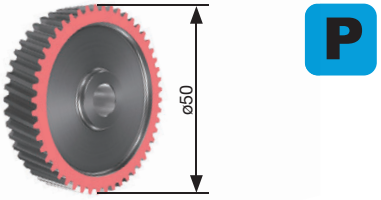
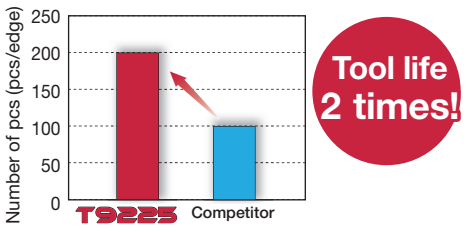
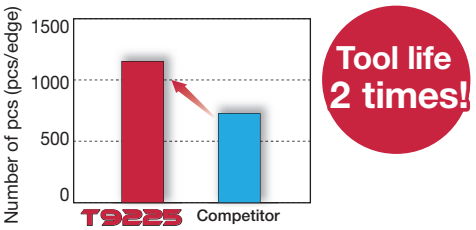
PRACTICAL EXAMPLES

Workpiece type		Automotive part	Automotive part
Insert		WNMG080408-AM	WNMG080408-AM
Grade		**T9215**	**T9215**
Workpiece material		S55C / C55	S55C / C55
		 P	 P
Cutting conditions	Cutting speed: *Vc* (m/min)	300	300
	Feed : *f* (mm/rev)	0.25	0.3
	Depth of cut : *ap* (mm)	1.5	1.0
	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.

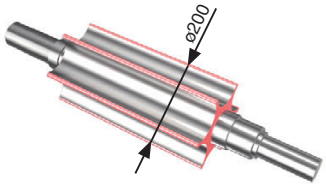
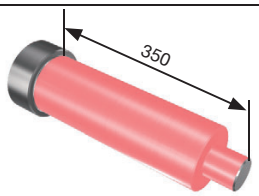
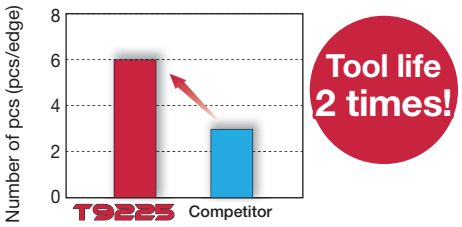
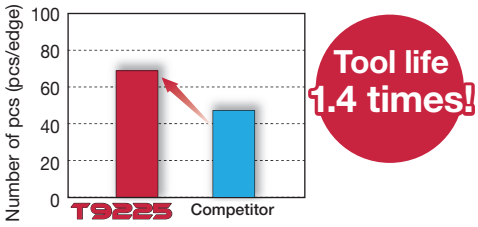
Workpiece type		Machine parts	Machine parts
Insert		CCMT060204-PS	CPMT090308-PS
Grade		**T9215**	**T9225**
Workpiece material		SCM415	S20C
			
Cutting conditions	Cutting speed: *Vc* (m/min)	150	100
	Feed : *f* (mm/rev)	0.2	0.2
	Depth of cut : *ap* (mm)	1.5	1.0
	Coolant	Wet	Wet
Results		 Our newest grade, 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.

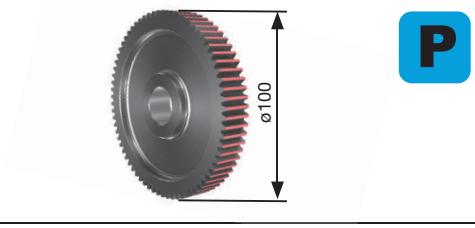
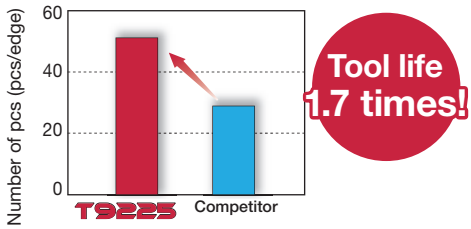
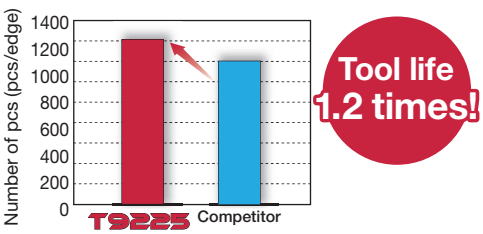
PRACTICAL EXAMPLES

Workpiece type		Pulley parts	Clutch parts
Insert		WNMG080408-TM	WNMG080412-TM
Grade		**T9225**	**T9225**
Workpiece material		SCM415	SCM420
			
Cutting conditions	Cutting speed: *Vc* (m/min)	210	220
	Feed : *f* (mm/rev)	0.25	0.3
	Depth of cut : *ap* (mm)	1.5	1.0
	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 thanks to its superior fracture toughness.

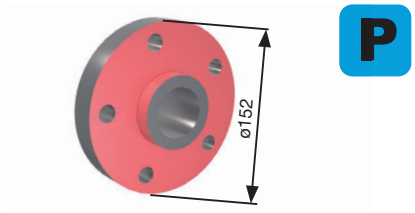
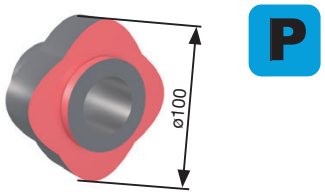
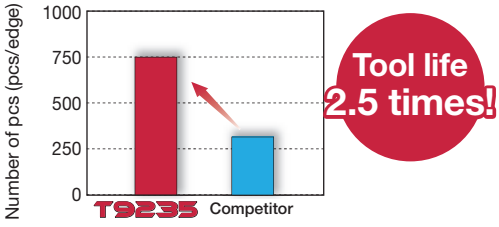
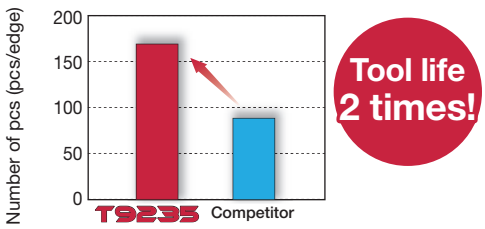
Workpiece type		Rotor parts	Ring gear parts
Insert		WNMG080412-TM	WNMG080408-TM
Grade		**T9225**	**T9225**
Workpiece material		S10C	SCr420
			
Cutting conditions	Cutting speed: *Vc* (m/min)	400	280
	Feed : *f* (mm/rev)	0.45	0.25
	Depth of cut : *ap* (mm)	1.5	1.0
	Coolant	Wet	Wet
Results			
		T9225 provided 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		CNMG120408-TM	DNMG150408-AM
Grade		**T9225**	**T9225**
Workpiece material		S35C	SCM440
		 P	 P
Cutting conditions	Cutting speed: *Vc* (m/min)	150	180
	Feed : *f* (mm/rev)	0.25 - 0.4	0.3
	Depth of cut : *ap* (mm)	0.5 - 1.5	1.0
	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		VNMG160408-TM	CCMT09T304-PS
Grade		**T9225**	**T9225**
Workpiece material		SCM415	SCr420H
		 P	 P
Cutting conditions	Cutting speed: *Vc* (m/min)	300	150
	Feed : *f* (mm/rev)	0.3	0.2 - 0.3
	Depth of cut : *ap* (mm)	1.5	1 - 2.5
	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		DNMG150412-TSF	DNMG150412-DM
Grade		**T9235**	**T9235**
Workpiece material		S53C / C53	S53C / C53
			
Cutting conditions	Cutting speed: *Vc* (m/min)	220	220
	Feed : *f* (mm/rev)	0.4	0.4
	Depth of cut : *ap* (mm)	0.5	1.0
	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.

MEMO

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