

TurnLine

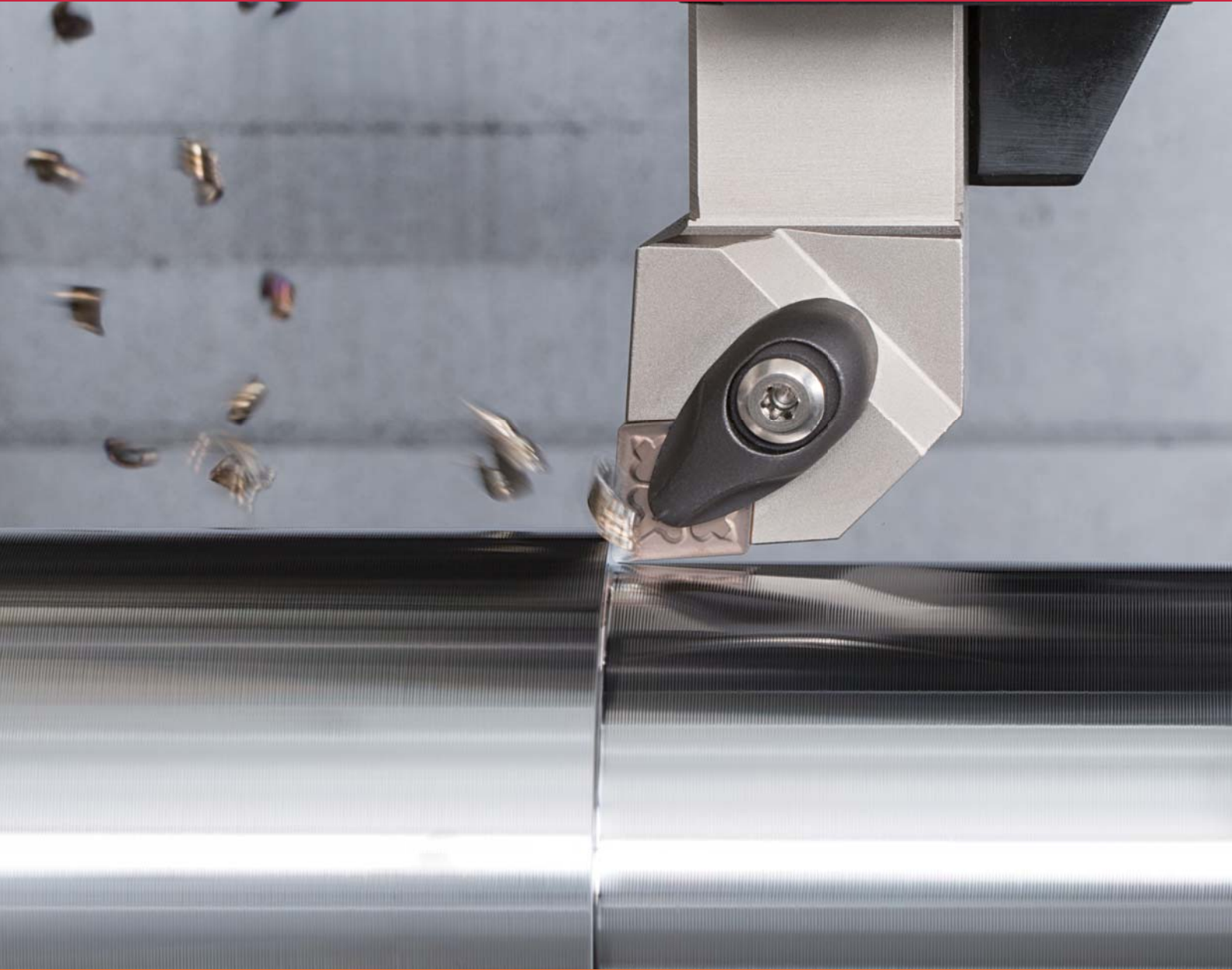
T9215

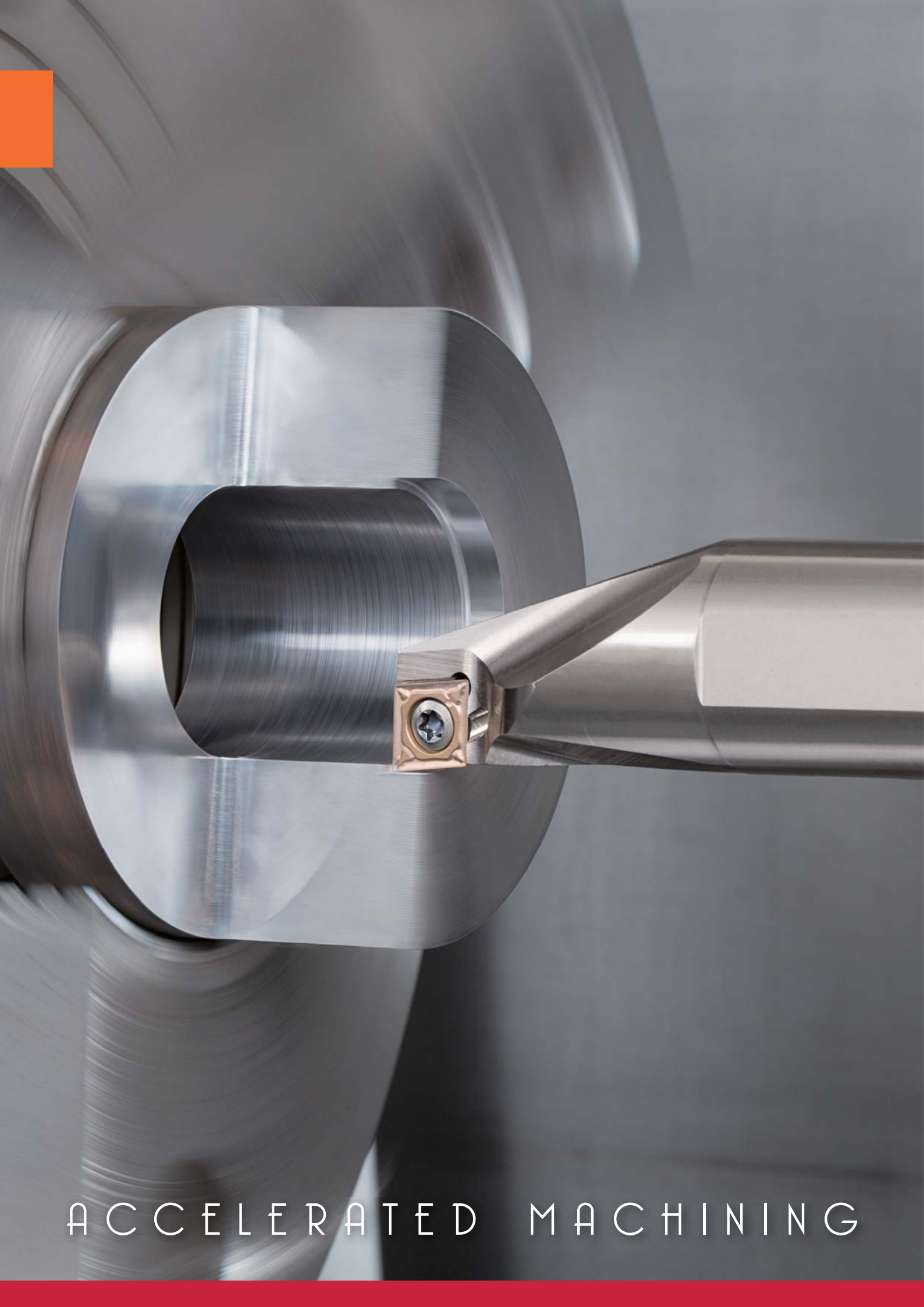
www.tungaloy.com

Tungaloy Report No. 513-G

T9215

T9215 NEW generation grade for Accelerated Machining





ACCELERATED MACHINING





New generation of CVD grade for steel turning with outstanding productivity

T9215

TUNGALOY

T9215 CVD grade with unparalleled wear and fracture resistance for turning ISO P15 materials

PREMIUMTEC

TUNGALOY

A new surface treatment technology is applied, making T9215 hard to break

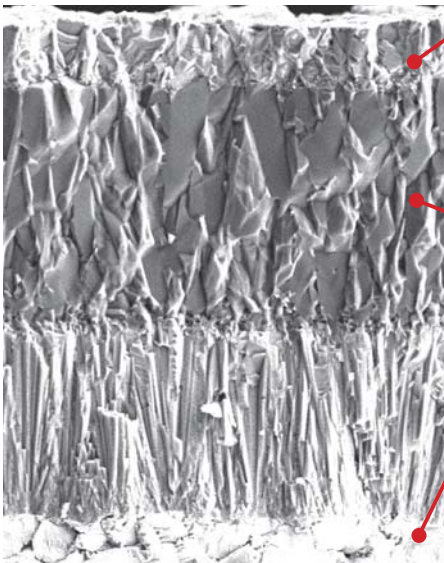
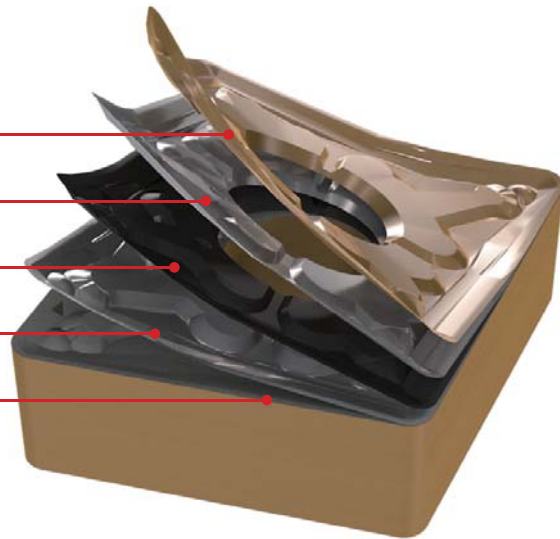
Outermost layer

Ti-layer

Al₂O₃

Ti compound

Specially designed substrate



Hard outer layer.

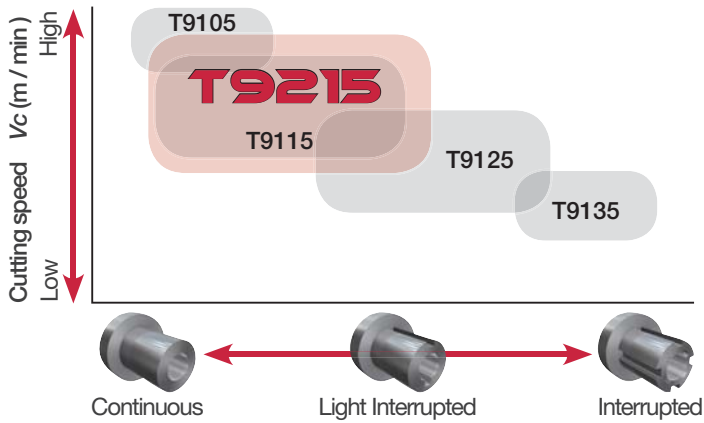
A new developed hard coating layer, with a high resistance to the flank wear.

Thick Al₂O₃ layer with excellent resistance to high heat and crater wear, especially effective for high-speed machining.

New cemented carbide substrate.

Exclusively designed for P15 grade drastically reduces defects in alloys, which greatly improves fracture resistance.

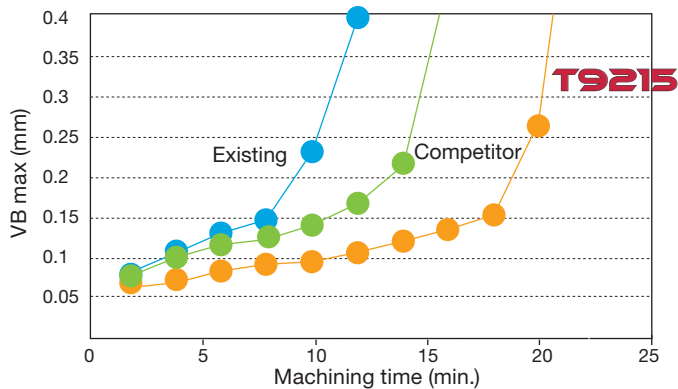
APPLICATION AREA



Application	Grade	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main Composition	Thickness (μm)
P	T9215	14.0	90.5	2.6	Ti compound + Al_2O_3	18

CUTTING PERFORMANCE

P SCM440 / 42CrMo4 (300HB)



Insert : CNMG120408-**
 Cutting speed : $V_c = 300$ m/min
 Feed : $f = 0.28$ mm/rev
 Depth of cut : $a_p = 2.0$ mm
 Machining : Continuous cutting
 Coolant : Wet

T9215
12 min.

Competitor
12 min.

Existing
12 min.



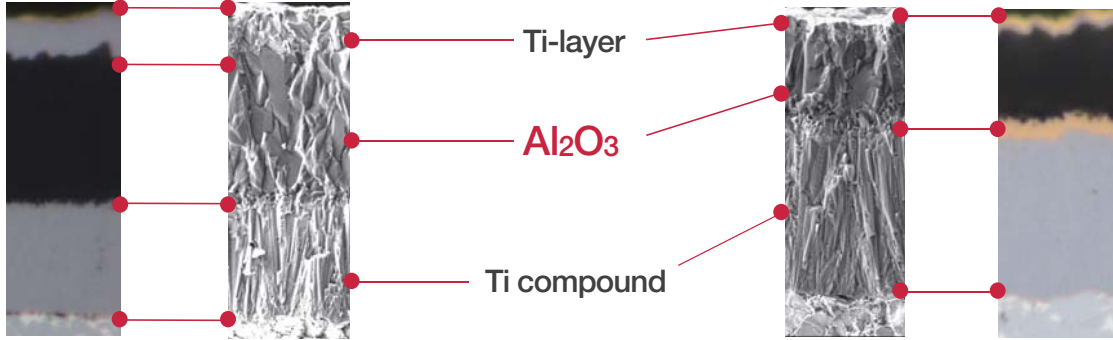


Excellent Crater Wear Resistance

Al₂O₃ coating with strengthened wear resistance

T9215

Existing



Highly homogeneous structure of Al₂O₃



Surface image of Al₂O₃

Excellent Flank Wear Resistance

T9215 Provided Outstanding Flank Wear Resistance!

T9215

Existing



Long tool life and stable tool life

Extended tool life
High speed and high feed
Stable machining

Reduced machine
downtime Cost reduction
High productivity



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 technology developed to make tough coating treatment 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

T9215

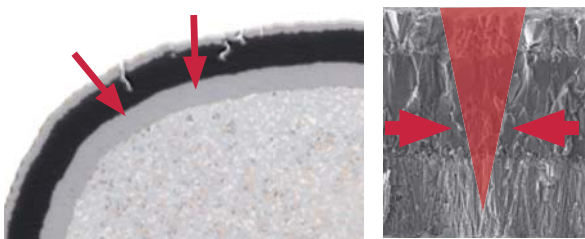
Suppress crack generation and progress

Insert cross section

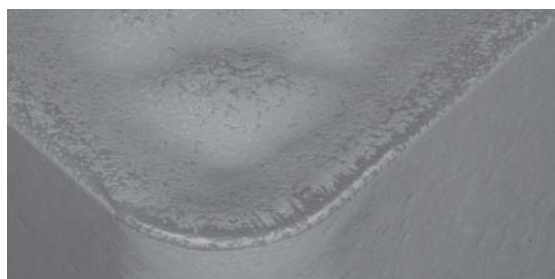


PREMIUMTEC
TUNGALOY

Suppress crack propagation



Still using



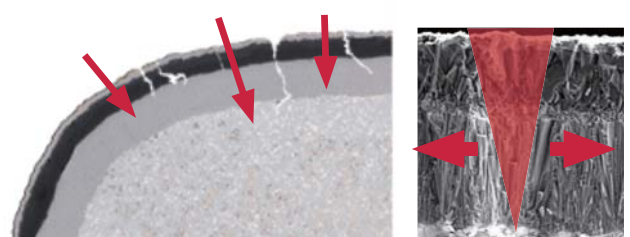
Realization of stable machining!

Vs.

Existing

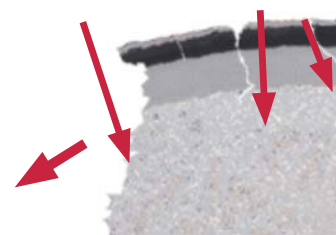
Crack occurs in coating files. Crack proceeds

Insert cross section



The crack gradually spreads

Fracture



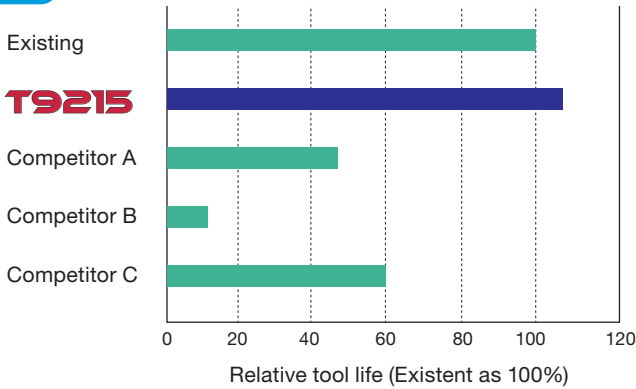
Fracture



CUTTING PERFORMANCE

Long tool life and stable machining a wide range of application area compared to the existent products that are equivalent to P15 grade!

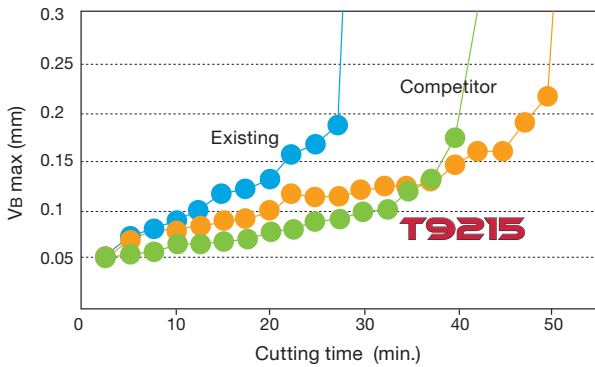
P S45C / C45 (245HB)



Insert : CNMG120408-**
 Cutting speed : $V_c = 150$ m/min
 Feed : $f = 0.15$ mm/rev
 Depth of cut : $a_p = 1.5$ mm
 Machining : Interrupted cutting
 Coolant : Wet

The fracture resistance of T9215 grade is same as our existent products and higher than the competitor's equivalent grades!

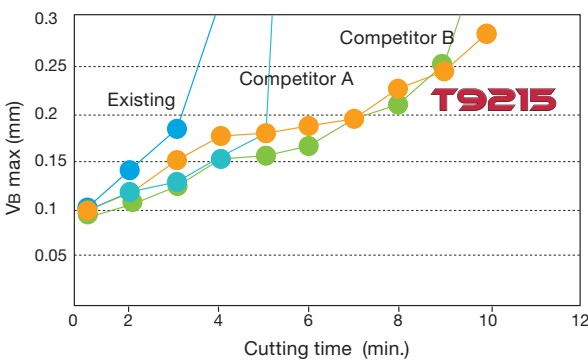
P S45C / C45 (245HB), Dry machining



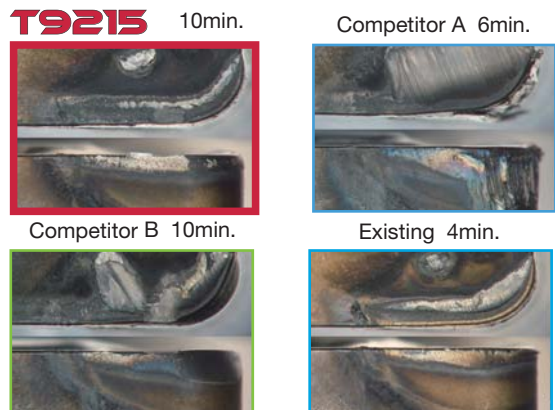
Insert : CNMG120408-**
 Cutting speed : $V_c = 220$ m/min
 Feed : $f = 0.28$ mm/rev
 Depth of cut : $a_p = 2.0$ mm
 Machining : Continuous cutting
 Coolant : Dry



P S45C / C45 (245HB), High speed machining



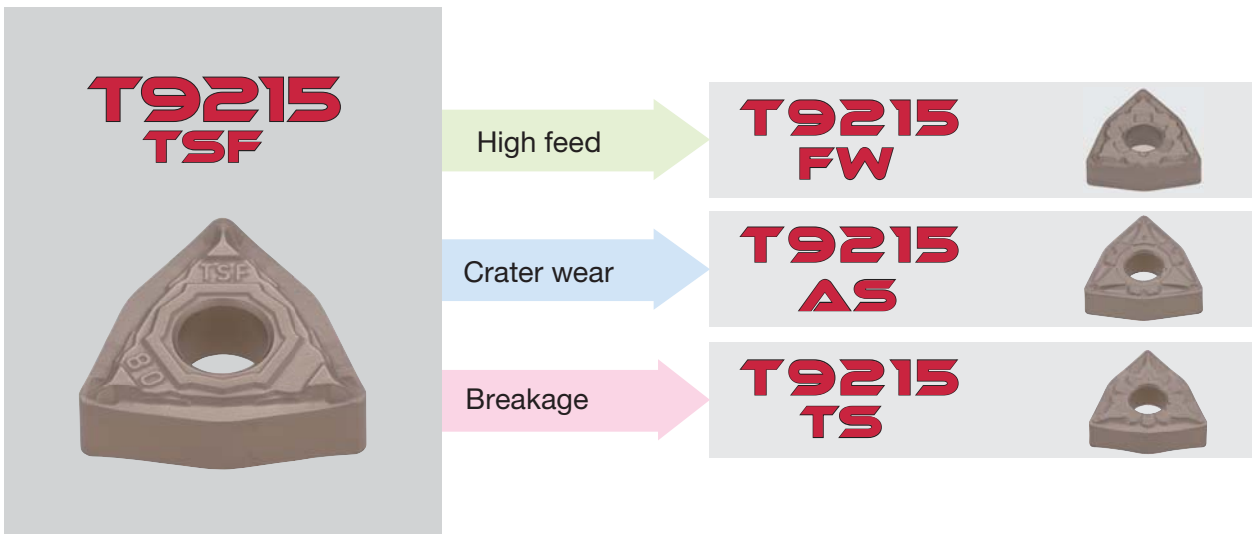
Insert : CNMG120408-**
 Cutting speed : $V_c = 400$ m/min
 Feed : $f = 0.28$ mm/rev
 Depth of cut : $a_p = 2.0$ mm
 Machining : Continuous cutting
 Coolant : Wet



SELECTION GUIDE NEGATIVE TYPE

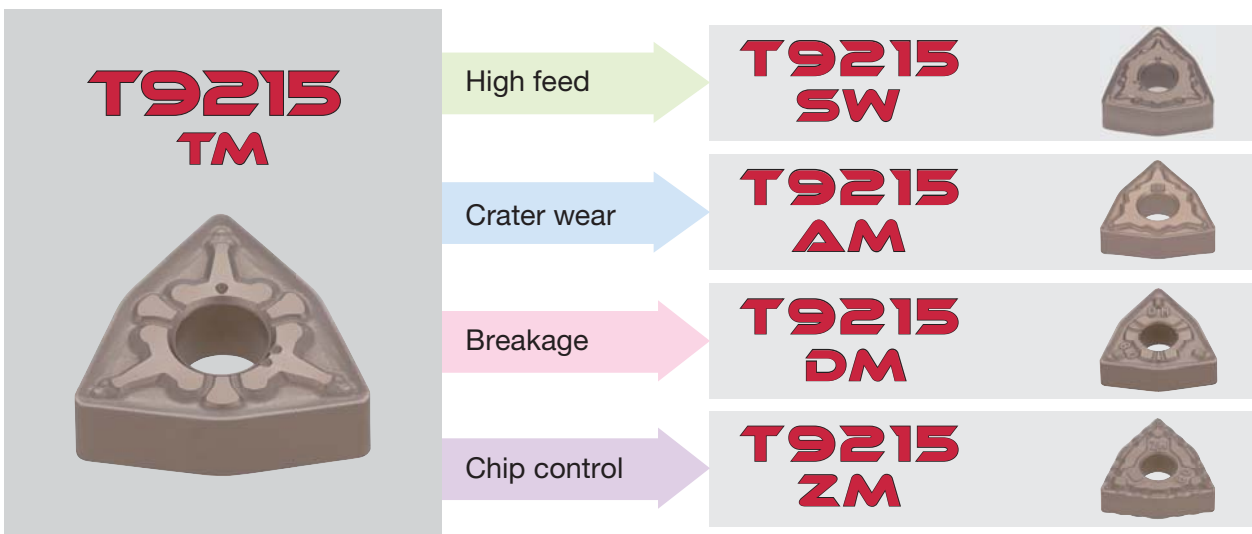
- For finishing ($a_p = 0.3 - 1.5 \text{ mm}$)

The 1st recommendation



- For finish to medium cutting ($a_p = 1.0 - 4.0 \text{ mm}$)

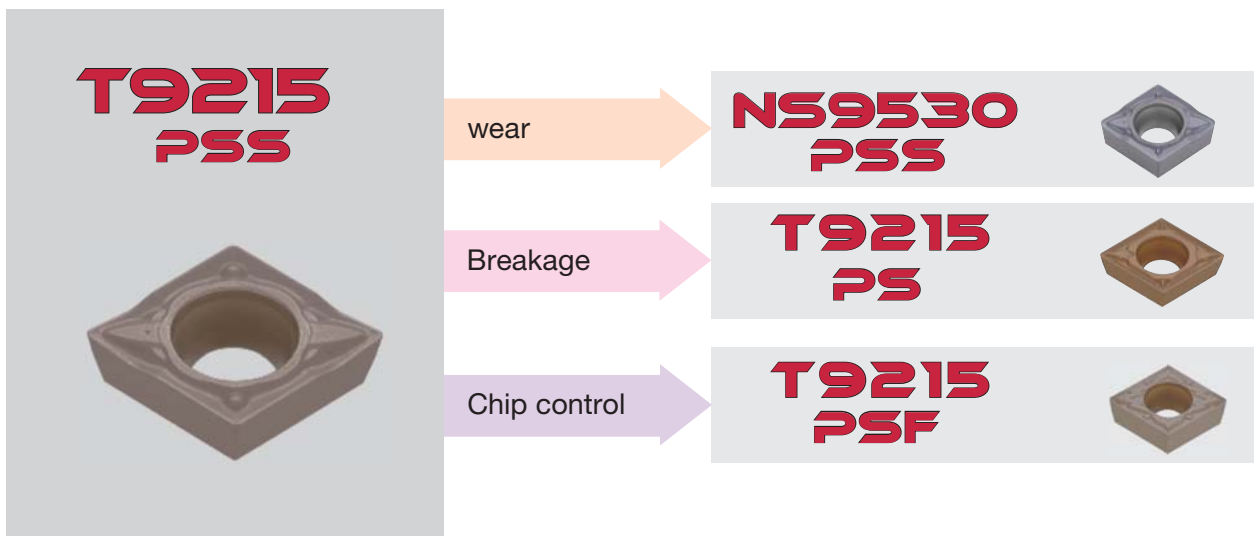
The 1st recommendation



POSITIVE TYPE

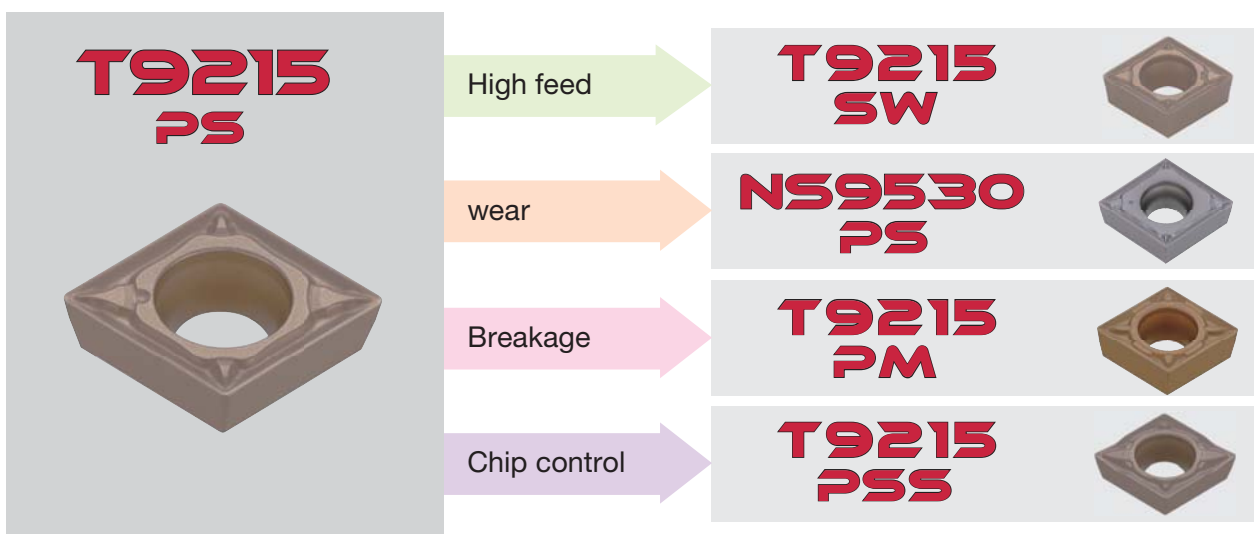
- For finishing ($a_p = 0.1 - 0.5 \text{ mm}$)

The 1st recommendation



- For finishing to medium cutting ($a_p = 0.5 - 2.5 \text{ mm}$)

The 1st recommendation



TurnLine - Insert

- : Continuous cutting
- : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE

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



Rhombic, 80°
with hole

Application	Chipbreaker	Designation	Corner radius	Coated																			
				T9215	T9105	T9115	T9125	T9135															
Finishing to medium cutting (Wiper)		SW	CNMG090408E-SW	0.8	●	●	●	●															
			CNMG090412E-SW	1.2	●	●	●	●															
			CNMG120408-SW	0.8	●	●	●	●															
			CNMG120412-SW	1.2	●	●	●	●															
		*Wiper insert																					
		ASW	CNMG120408-ASW	0.8	●	●	●	●															
		CNMG120412-ASW	1.2	●	●	●	●																
High feed, small depth of cut		AS	CNMG120404-AS	0.4	●	●	●	●															
			CNMG120408-AS	0.8	●	●	●	●	●														
			CNMG120412-AS	1.2	●		●	●	●														
Medium cutting		TM	CNMG090304-TM	0.4	●		●	●															
			CNMG090308-TM	0.8	●		●	●	●														
			CNMG090404E-TM	0.4	●		●	●															
			CNMG090408E-TM	0.8	●		●	●															
			CNMG090412E-TM	1.2	●		●	●															
			CNMG120404-TM	0.4	●	●	●	●	●														
			CNMG120408-TM	0.8	●	●	●	●	●														
			CNMG120412-TM	1.2	●	●	●	●	●														
			CNMG120416-TM	1.6	●		●	●	●														
			CNMG160612-TM	1.2	●	●	●	●	●														
			CNMG190608-TM	0.8	★	●	●	●	●														
	CNMG190612-TM	1.2	★	●	●	●	●																
Finishing to medium		AM	CNMG120408-AM	0.8	●		●	●															
			CNMG120412-AM	1.2	●		●	●															
			CNMG120416-AM	1.6	●		●	●															

* 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
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE

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



Rhombic, 80°
with hole

Application	Chipbreaker	Designation	Corner radius	Coated				
				T9215	T9105	T9115	T9125	T9135
Finish to Medium cutting		NM CNMG120408-NM	0.8	●	●	●	●	●
		NM CNMG120412-NM	1.2	●	●	●	●	
		ZM CNMG090408E-ZM	0.8	●	●	●		
		ZM CNMG120408-ZM	0.8	●	●	●	●	
		ZM CNMG120412-ZM	1.2	●	●	●	●	
		ZM CNMG120416-ZM	1.6	★	●	●		
Medium cutting		DM CNMG120404-DM	0.4	★	●	●		
		DM CNMG120408-DM	0.8	●	●	●	●	
		DM CNMG120412-DM	1.2	●	●	●	●	
		All-round CNMG090304	0.4	★	●	●		
		All-round CNMG090308	0.8	★	●	●	●	
		All-round CNMG120404	0.4	★	●	●	●	
		All-round CNMG120408	0.8	●	●	●	●	
		All-round CNMG120412	1.2	●	●	●	●	
		All-round CNMG120416	1.6	★	●	●	●	
		All-round CNMG160608	0.8	●	●	●	●	
		All-round CNMG160612	1.2	●	●	●	●	
		All-round CNMG160616	1.6	★	●	●	●	
		All-round CNMG190608	0.8	★	●	●	●	
	All-round CNMG190612	1.2	★	●	●	●		
	All-round CNMG190616	1.6	★	●	●	●		
	Finishing to medium cutting		27 CNMG120404-27	0.4	★	●	●	
27 CNMG120408-27			0.8	★	●	●	●	

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- (with dot) : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE



Rhombic, 80°
with hole

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

Application	Chipbreaker	Designation	Corner radius	Coated																			
				T9215	T9105	T9115	T9125	T9135															
Medium cutting		33 CNMG120416-33	1.6	★	●																		
		CNMG160612-33	1.2	★	●																		
		CNMG190612-33	1.2	★	●																		
		37 CNMG120404-37	0.4	●	●																		
		CNMG120408-37	0.8	●	●																		
		CNMG120412-37	1.2	●	●																		
	38 CNMG120408-38	0.8	★	●																			
Medium to heavy cutting		TH CNMG120408-TH	0.8	●	●	●	●	●															
		CNMG120412-TH	1.2	●	●	●	●	●															
		CNMG120416-TH	1.6	●	●	●	●	●															
		CNMG160612-TH	1.2	●	●	●	●	●															
		CNMG160616-TH	1.6	●	●	●	●	●															
		CNMG190612-TH	1.2	★	●	●	●	●															
		CNMG190616-TH	1.6	●	●	●	●	●															
		THS CNMG120408-THS	0.8	●	●	●	●	●															
		CNMG120412-THS	1.2	●	●	●	●	●															
		CNMG120416-THS	1.6	★	●	●	●	●															
		CNMG160612-THS	1.2	●	●	●	●	●															
		CNMG160616-THS	1.6	★	●	●	●	●															
		CNMG190612-THS	1.2	●	●	●	●	●															
		CNMG190616-THS	1.6	●	●	●	●	●															
	CNMG190624-THS	2.4	★	●	●	●	●																
	CNMG250924-THS	2.4	★	●	●	●	●																

- : Line-up
- (with dot) : New product
- ★ : To be released in 2018




TurnLine - Insert

- : Continuous cutting
- (with dot) : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE

 Rhombic, 55°
with hole

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

Application	Chipbreaker	Designation	Corner radius	Coated																						
				T9215	T9105	T9115	T9125	T9135																		
Finishing		TSF DNMG110404E-TSF	0.4	●		●	●																			
		DNMG110408E-TSF	0.8	●		●	●																			
		DNMG110412E-TSF	1.2	●		●	●																			
		DNMG150404-TSF	0.4	●	●	●	●	●																		
		DNMG150408-TSF	0.8	●	●	●	●	●																		
		DNMG150412-TSF	1.2	●	●	●	●	●																		
		DNMG150604-TSF	0.4	●		●	●																			
		DNMG150608-TSF	0.8	●	●	●	●	●																		
		DNMG150612-TSF	1.2	●	●	●	●	●																		
Finishing (Wiper)		FW DNMG110404E-FW	-	●		●																				
		DNMG110408E-FW	-	●		●																				
		DNMG150404-FW	-	●		●																				
		DNMG150408-FW	-	●		●																				
		DNMG150604-FW	-	●		●																				
		DNMG150608-FW	-	●		●																				
		* Wiper insert																								
Finishing		ZF DNMG110404E-ZF	0.4	●		●	●																			
		DNMG150404-ZF	0.4	●		●	●	●																		
		DNMG150408-ZF	0.8	●		●	●	●																		
		DNMG150412-ZF	1.2	★		●	●	●																		
		DNMG150604-ZF	0.4	★		●	●																			
		DNMG150608-ZF	0.8	★		●	●	●																		
		DNMG150612-ZF	1.2	★		●	●																			
		11 DNMG150408-11	0.8	●		●																				

* 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
- (with dot) : New product
- ★ : To be released in 2018






TurnLine - Insert

● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

NEGATIVE TYPE


**Rhombic, 55°
with hole**

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

Application	Chipbreaker	Designation	Corner radius	Coated																				
				T9215	T9105	T9115	T9125	T9135																
				●	●	●	●	●																
Finishing to medium cutting		DNMG150408-NM	0.8	●	●	●	●																	
		DNMG150412-NM	1.2	●	●	●	●																	
Medium cutting		DNMG110404E-TM	0.4	●	●	●																		
		DNMG110408E-TM	0.8	●	●	●																		
		DNMG110412E-TM	1.2	●	●	●																		
		DNMG110404-TM	0.4	●	●	●	●																	
		DNMG110408-TM	0.8	●	●	●	●																	
		DNMG150404-TM	0.4	●	●	●	●																	
		DNMG150408-TM	0.8	●	●	●	●																	
		DNMG150412-TM	1.2	●	●	●	●																	
		DNMG150416-TM	1.6	●	●	●																		
		DNMG150604-TM	0.4	●	●	●	●																	
		DNMG150608-TM	0.8	●	●	●	●																	
		DNMG150612-TM	1.2	●	●	●	●																	
		DNMG150616-TM	1.6	●	●	●	●																	
		Finishing to medium cutting		DNMG110408E-ZM	0.8	●	●	●																
DNMG150408-ZM	0.8			●	●	●	●																	
DNMG150412-ZM	1.2			●	●	●	●																	
DNMG150608-ZM	0.8			●	●	●	●																	
DNMG150612-ZM	1.2			●	●	●																		
Medium cutting		DNMG150408-DM	0.8	●	●	●	●																	
		DNMG150412-DM	1.2	●	●	●	●																	
		DNMG150604-DM	0.4	★	●																			
		DNMG150608-DM	0.8	★	●	●	●																	
		DNMG150612-DM	1.2	★	●	●	●																	
Finishing to medium cutting		27	DNMG150408-27	0.8	★	●	●																	

TurnLine - Insert

● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

NEGATIVE TYPE



Square, 90°
with hole

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

Application	Chipbreaker	Designation	Corner radius	Coated															
				T9215	T9105	T9115	T9125	T9135											
Medium to heavy cutting		THS	SNMG120408-THS	0.8	★	●	●	●											
			SNMG120412-THS	1.2	★	●	●	●											
			SNMG150612-THS	1.2	★	●	●												
			SNMG150616-THS	1.6	★	●	●												
			SNMG190608-THS	0.8	★	●	●	●											
			SNMG190612-THS	1.2	★	●	●	●											
			SNMG190616-THS	1.6	●	●	●	●											
			SNMG190624-THS	2.4	★	●	●	●											
			SNMG250716-THS	1.6	★	●	●	●											
			SNMG250724-THS	2.4	★	●	●	●											
Medium to heavy cutting (Single sided)		TRS	SNMM150612-TRS	1.2	★	●	●	●											
			SNMM150616-TRS	1.6	★	●	●	●											
			SNMM190616-TRS	1.6	★	●	●	●											
			SNMM190624-TRS	2.4	★	●	●	●											
			SNMM250924-TRS	2.4	★	●	●	●											
Heavy cutting (Single sided)		TU	SNMM250924-TU	2.4	★	●	●												
		TUS	SNMM190612-TUS	1.2	★	●	●	●											
			SNMM190616-TUS	1.6	★	●	●	●											
			SNMM190624-TUS	2.4	★	●	●	●											
			SNMM250724-TUS	2.4	★	●	●	●											
			SNMM250732-TUS	3.2	★	●	●												
			SNMM250924-TUS	2.4	★	●	●	●											
			SNMM250932-TUS	3.2	★	●	●												
Heavy cutting		57	SNMM120408-57	0.8	★	●	●												

● : Line-up
 ● : New product
 ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

NEGATIVE TYPE



Triangular, 60° with hole

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

Application	Chipbreaker	Designation	Corner radius	Coated																																
				T9215	T9105	T9115	T9125	T9135																												
High feed, small depth of cut		TNMG160408-AS	0.8	●	●	●	●	●																												
		TNMG160412-AS	1.2	●	●	●	●																													
Boring (Double sided)		TNMG110304-CB	0.4	●	●																															
		TNMG110308-CB	0.8	★	●																															
Finishing		TNMG160404-NS	0.4	★	●	●																														
		TNMG160408-NS	0.8	★	●	●																														
Medium cutting		TNMG110304-TM	0.4	●	●	●	●																													
		TNMG110308-TM	0.8	●	●	●	●																													
		TNMG110404E-TM	0.4	●	●	●																														
		TNMG110408E-TM	0.8	●	●	●																														
		TNMG110412E-TM	1.2	●	●	●																														
		TNMG160404-TM	0.4	●	●	●	●																													
		TNMG160408-TM	0.8	●	●	●	●																													
		TNMG160412-TM	1.2	●	●	●	●																													
		TNMG220404-TM	0.4	●	●	●																														
		TNMG220408-TM	0.8	●	●	●	●																													
		TNMG220412-TM	1.2	●	●	●	●																													
		TNMG220416-TM	1.6	●	●	●																														
Finishing to medium cutting		TNMG160408-AM	0.8	●	●	●																														
		TNMG160412-AM	1.2	●	●	●																														

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert






- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE



Triangular, 60°
with hole

	P	M	K	N	S	H	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Steel	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Stainless	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Cast iron	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Non-ferrous	●			●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Superalloys				●	●																											
Hard materials						●																										

Application	Chipbreaker	Designation	Corner radius	Coated																											
				T9215	T9105	T9115	T9125	T9135	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Finishing to medium cutting	NM	TNMG160412-NM	1.2	●	●	●																									
																															
	ZM	TNMG160404-ZM	0.4	★	●	●	●																								
		TNMG160408-ZM	0.8	●	●	●	●																								
		TNMG160412-ZM	1.2	●	●	●	●																								
Medium cutting	DM	TNMG160408-DM	0.8	●	●	●	●	●																							
		TNMG160412-DM	1.2	●	●	●																									
	All-round	TNMG110304	0.4	★	●	●																									
		TNMG110308	0.8	★	●	●																									
		TNMG160404	0.4	★	●	●	●	●																							
		TNMG160408	0.8	★	●	●	●	●																							
		TNMG160412	1.2	●	●	●	●	●																							
		TNMG160416	1.6	★	●	●	●	●																							
		TNMG160420	2.0	●	●	●	●																								
		TNMG220408	0.8	★	●	●	●	●																							
		TNMG220412	1.2	★	●	●	●	●																							
	TNMG220416	1.6	★	●	●																										
Finishing to medium cutting	27	TNMG160404-27	0.4	★	●	●																									
		TNMG160408-27	0.8	●	●	●																									
		TNMG160412-27	1.2	★	●	●																									

- : Line-up
- : New product
- ★ : To be released in 2018

T9215

TUNGALOY

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ⚡ : Heavy interrupted cutting

NEGATIVE TYPE



**Trigon, 80°
with hole**

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

Application	Chipbreaker	Designation	Corner radius	Coated																																																							
				T9215	T9105	T9115	T9125	T9135																																																			
				●	●	●	●	●																																																			
Medium to heavy cutting	TH	WNMG080408-TH	0.8	●	●	●	●	●																																																			
		WNMG080412-TH	1.2	●	●	●	●	●																																																			
		WNMG080416-TH	1.6	★	●	●	●	●																																																			
		WNMG100612-TH	1.2	●	●	●	●	●																																																			
		WNMG100616-TH	1.6	★	●	●	●	●																																																			
					●	●	●	●	●																																																		
		THS	WNMG080408-THS	0.8	★	●	●	●	●																																																		
			WNMG080412-THS	1.2	●	●	●	●	●																																																		
			WNMG080416-THS	1.6	★	●	●	●	●																																																		
			WNMG100612-THS	1.2	★	●	●	●	●																																																		
		WNMG100616-THS	1.6	★	●	●	●	●																																																			

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



Rhombic, 80°
with hole
Positive 7°

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

Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
Finishing		PSF CCMT060204-PSF	0.4	★	●	●																
		CCMT09T304-PSF	0.4	●	●	●																
		CCMT09T308-PSF	0.8	★	●	●																
Finishing to light cutting		PSS CCMT060204-PSS	0.4	★	●	●																
		CCMT060208-PSS	0.8	★	●	●																
		CCMT09T304-PSS	0.4	●	●	●																
		CCMT09T308-PSS	0.8	●	●	●																
		CCMT120404-PSS	0.4	★	●	●																
		CCMT120408-PSS	0.8	★	●	●																
		CCMT120412-PSS	1.2	★	●	●																
Finishing to medium cutting		PS CCMT060202-PS	0.2	●	●	●																
		CCMT060204-PS	0.4	●	●	●																
		CCMT060208-PS	0.8	●	●	●																
		CCMT09T302-PS	0.2	●	●	●																
		CCMT09T304-PS	0.4	●	●	●																
		CCMT09T308-PS	0.8	●	●	●																
		CCMT120404-PS	0.4	★	●	●																
		CCMT120408-PS	0.8	★	●	●																
		CCMT120412-PS	1.2	★	●	●																

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



**Rhombic, 80°
with hole
Positive 7°**

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

Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
medium (Wiper)		SW CCMT060204-SW	0.4	●	●	●																
		CCMT060208-SW	0.8	●	●	●																
		CCMT09T304-SW	0.4	●	●	●																
		CCMT09T308-SW	0.8	●	●	●																
		*Wiper insert																				
Medium cutting		24 CCMT060204-24	0.4	●	●	●																
		CCMT060208-24	0.8	★	●	●																
		CCMT09T304-24	0.4	●	●	●																
		CCMT09T308-24	0.8	●	●	●																
		CCMT120408-24	0.8	●	●	●																
Medium cutting		PM CCMT060204-PM	0.4	●	●	●																
		CCMT060208-PM	0.8	●	●	●																
		CCMT09T304-PM	0.4	●	●	●																
		CCMT09T308-PM	0.8	●	●	●																
		CCMT09T312-PM	1.2	●	●	●																

* 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
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



**Rhombic, 80°
with hole
Positive 11°**

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

Application	Chipbreaker	Designation	Corner radius	Coated		
				T9215	T9115	T9125
Finishing		PSF CPMT060204-PSF	0.4	★	●	●
		CPMT080204-PSF	0.4	★	●	●
		CPMT090304-PSF	0.4	★	●	●
		CPMT09T304-PSF	0.4	★	●	●
Finishing to light cutting		PSS CPMT060204-PSS	0.4	★	●	●
		CPMT080204-PSS	0.4	★	●	●
		CPMT080208-PSS	0.8	★	●	●
		CPMT090304-PSS	0.4	★	●	●
		CPMT090308-PSS	0.8	★	●	●
		CPMT09T304-PSS	0.4	★	●	●
		CPMT09T308-PSS	0.8	★	●	●
Finishing to medium cutting		PS CPMT060202-PS	0.2	●	●	●
		CPMT060204-PS	0.4	★	●	●
		CPMT080202-PS	0.2	★	●	●
		CPMT080204-PS	0.4	●	●	●
		CPMT080208-PS	0.8	★	●	●
		CPMT090304-PS	0.4	★	●	●
		CPMT090308-PS	0.8	★	●	●
		CPMT09T302-PS	0.2	★	●	●
		CPMT09T304-PS	0.4	★	●	●
		CPMT09T308-PS	0.8	★	●	●
Medium cutting		24 CPMT080204-24	0.4	★	●	●

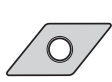
- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE

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



**Rhombic, 55°
with hole
Positive 7°**

Application			Coated																						
			T9215	T9115	T9125																				
Application	Chipbreaker	Designation	Corner radius																						
				Finishing		PSF	DCMT070204-PSF	0.4	✱	●	●														
	DCMT11T304-PSF	0.4	●			●	●																		
	DCMT11T308-PSF	0.8	✱			●	●																		
Finishing to light cutting		PSS	DCMT070204-PSS	0.4	✱	●	●																		
			DCMT070208-PSS	0.8	●	●	●																		
			DCMT11T304-PSS	0.4	●	●	●																		
			DCMT11T308-PSS	0.8	●	●	●																		
			DCMT11T312-PSS	1.2	✱	●	●																		
Finishing to medium cutting		PS	DCMT070202-PS	0.2	✱	●	●																		
			DCMT070204-PS	0.4	●	●	●																		
			DCMT070208-PS	0.8	●	●	●																		
			DCMT11T302-PS	0.2	●	●	●																		
			DCMT11T304-PS	0.4	●	●	●																		
			DCMT11T308-PS	0.8	●	●	●																		
			DCMT11T312-PS	1.2	✱	●	●																		
Medium cutting		24	DCMT070204-24	0.4	●	●	●																		
			DCMT11T304-24	0.4	✱	●	●																		
			DCMT11T308-24	0.8	✱	●	●																		
		PM	DCMT070204-PM	0.4	●	●	●																		
			DCMT070208-PM	0.8	✱	●	●																		
			DCMT11T304-PM	0.4	●	●	●																		
			DCMT11T308-PM	0.8	●	●	●																		

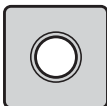
- : Line-up
- : New product
- ✱ : To be released in 2018

● : Continuous cutting
 ● : Light interrupted cutting
 ★ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE

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



Square, 90°
with hole
Positive 7°

Application		Chipbreaker	Designation	Corner radius	Coated																		
					T9215	T9115	T9125																
Finishing to medium cutting		PS	SCMT09T304-PS	0.4	●	●	●																
			SCMT09T308-PS	0.8	●	●	●																
			SCMT120404-PS	0.4	★	●	●																
			SCMT120408-PS	0.8	●	●	●																
Medium cutting		24	SCMT09T308-24	0.8	★	●	●																
		PM	SCMT09T304-PM	0.4	★	●	●																
			SCMT09T308-PM	0.8	●	●	●																
			SCMT120408-PM	0.8	★	●	●																

● : Line-up
 ● : New product
 ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



**Square, 90°
with hole
Positive 11°**

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

Application	Chipbreaker	Designation	Corner radius	Coated														
				T9215	T9115	T9125												
Finishing to medium cutting	PS	SPMT090304-PS	0.4	★	●	●												
		SPMT090308-PS	0.8	★	●	●												
		SPMT120404-PS	0.4	★	●	●												
		SPMT120408-PS	0.8	★	●	●												

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



Triangular, 60°
with hole
Positive 7°

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

Application	Chipbreaker	Designation	Corner radius	Coated																					
				T9215	T9115	T9125																			
Finishing		PSF TCMT090204-PSF	0.4	★	●	●																			
		TCMT110204-PSF	0.4	★	●	●																			
		TCMT110304-PSF	0.4	★	●	●																			
		TCMT16T304-PSF	0.4	★	●	●																			
Finishing to light cutting		PSS TCMT090204-PSS	0.4	★	●	●																			
		TCMT090208-PSS	0.8	★	●	●																			
		TCMT110204-PSS	0.4	★	●	●																			
		TCMT110208-PSS	0.8	★	●	●																			
		TCMT110304-PSS	0.4	★	●	●																			
		TCMT110308-PSS	0.8	★	●	●																			
		TCMT16T304-PSS	0.4	●	●	●																			
		TCMT16T308-PSS	0.8	●	●	●																			
TCMT16T312-PSS	1.2	★	●	●																					
Finishing to medium cutting		PS TCMT110202-PS	0.2	★	●	●																			
		TCMT110204-PS	0.4	●	●	●																			
		TCMT110208-PS	0.8	★	●	●																			
		TCMT110302-PS	0.2	★	●	●																			
		TCMT110304-PS	0.4	●	●	●																			
		TCMT110308-PS	0.8	★	●	●																			
		TCMT16T302-PS	0.2	★	●	●																			
		TCMT16T304-PS	0.4	●	●	●																			
		TCMT16T308-PS	0.8	●	●	●																			
Medium cutting		24 TCMT090204-24	0.4	★	●	●																			
		TCMT110204-24	0.4	★	●	●																			
		TCMT16T304-24	0.4	★	●	●																			
		TCMT16T308-24	0.8	★	●	●																			

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

POSITIVE TYPE



Triangular, 60°
with hole
Positive 11°

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

Application	Chipbreaker	Designation	Corner radius	Coated																															
				T9215	T9115	T9125																													
Finishing		PSF TPMT090204-PSF	0.4	★	●	●																													
		TPMT110204-PSF	0.4	★	●	●																													
		TPMT110304-PSF	0.4	●	●	●																													
		TPMT130304-PSF	0.4	★	●	●																													
		TPMT16T304-PSF	0.4	★	●	●																													
Finishing to light cutting		PSS TPMT090204-PSS	0.4	★	●	●																													
		TPMT090208-PSS	0.8	★	●	●																													
		TPMT110204-PSS	0.4	★	●	●																													
		TPMT110208-PSS	0.8	★	●	●																													
		TPMT110304-PSS	0.4	★	●	●																													
		TPMT110308-PSS	0.8	●	●	●																													
		TPMT130304-PSS	0.4	★	●	●																													
		TPMT130308-PSS	0.8	★	●	●																													
		TPMT16T304-PSS	0.4	★	●	●																													
		TPMT16T308-PSS	0.8	●	●	●																													

- : Line-up
- : New product
- ★ : To be released in 2018

- : Continuous cutting
- ◐ : Light interrupted cutting
- ⊛ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE



Triangular, 60°
with hole
Positive 11°

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

Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
Finishing to medium cutting		PS TPMT090202-PS	0.2	★	●	●																
		TPMT090204-PS	0.4	★	●	●																
		TPMT090208-PS	0.8	●	●	●																
		TPMT110202-PS	0.2	★	●	●																
		TPMT110204-PS	0.4	●	●	●																
		TPMT110208-PS	0.8	★	●	●																
		TPMT110304-PS	0.4	●	●	●																
		TPMT110308-PS	0.8	●	●	●																
		TPMT130302-PS	0.2	★	●	●																
		TPMT130304-PS	0.4	●	●	●																
		TPMT130308-PS	0.8	★	●	●																
		TPMT16T304-PS	0.4	●	●	●																
		TPMT16T308-PS	0.8	●	●	●																
Medium cutting		PM TPMT110204-PM	0.4	★	●	●																
		TPMT110208-PM	0.8	★	●	●																
		TPMT110304-PM	0.4	★	●	●																
		TPMT110308-PM	0.8	★	●	●																

- : Line-up
- : New product
- ★ : To be released in 2018

T9215

TUNGALOY

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

TurnLine - Insert

POSITIVE TYPE



Triangular, 60°
without hole
Positive 11°

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

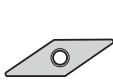
Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
Finishing to medium cutting	23	TPMR110304-23	0.4	★	●	●																
		TPMR160304-23	0.4	★	●	●																
	24	TPMR160304-24	0.4	★	●	●																
		TPMR160308-24	0.8	★	●	●																

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



Rhombic, 35°
with hole
Positive 5°

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

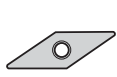
Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
Finishing		VBMT110304-PSF	0.4	★	●	●																
		VBMT160404-PSF	0.4	●	●																	
Finishing to light cutting		VBMT110304-PSS	0.4	★	●	●																
		VBMT110308-PSS	0.8	●	●																	
		VBMT160404-PSS	0.4	●	●																	
		VBMT160408-PSS	0.8	●	●																	
		VBMT160412-PSS	1.2	●	●																	
Finishing to medium cutting		VBMT110302-PS	0.2	★	●	●																
		VBMT110304-PS	0.4	●	●																	
		VBMT110308-PS	0.8	●	●																	
		VBMT160402-PS	0.2	★	●	●																
		VBMT160404-PS	0.4	●	●																	
		VBMT160408-PS	0.8	●	●																	
Medium cutting		VBMT160404-24	0.4	★	●	●																
		VBMT160408-24	0.8	★	●	●																

- : Line-up
- : New product
- ★ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting

POSITIVE TYPE



Rhombic, 35°
with hole
Positive 7°

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

Application	Chipbreaker	Designation	Corner radius	Coated																		
				T9215	T9115	T9125																
Finishing		PSF VCMT080204-PSF	0.4	✱	●	●																
		VCMT110304-PSF	0.4	✱	●	●																
		VCMT160404-PSF	0.4	✱	●	●																
		VCMT160408-PSF	0.8	✱	●	●																
Finishing to light cutting		PSS VCMT110304-PSS	0.4	✱	●	●																
		VCMT110308-PSS	0.8	✱	●	●																
		VCMT160404-PSS	0.4	●	●	●																
		VCMT160408-PSS	0.8	●	●	●																
Finishing to medium cutting		PS VCMT110302-PS	0.2	✱	●	●																
		VCMT110304-PS	0.4	●	●	●																
		VCMT110308-PS	0.8	●	●	●																
		VCMT160404-PS	0.4	●	●	●																
		VCMT160408-PS	0.8	●	●	●																
Medium cutting		24 VCMT160404-24	0.4	✱	●	●																
		VCMT160408-24	0.8	✱	●	●																

- : Line-up
- : New product
- ✱ : To be released in 2018

TurnLine - Insert

- : Continuous cutting
- ◐ : Light interrupted cutting
- ✱ : Heavy interrupted cutting



**Trigon, 80°
with hole
Positive11°**

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

Application	Chipbreaker	Designation	Corner radius	Coated															
				T9215	T9115	T9125													
Heavy cutting	ML	WPMT090725ZPR-ML	2.5	★	●	●													
		WPMT090725ZPL-ML	2.5	★	●	●													



- : Line-up
- : New product
- ★ : To be released in 2018

Standard cutting conditions

For Negative Inserts

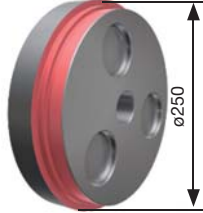
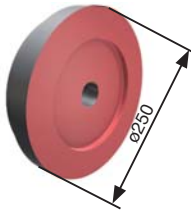
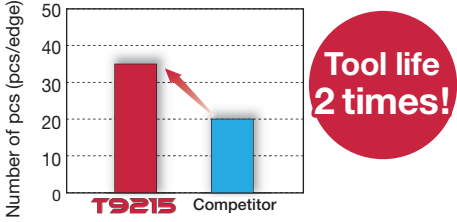
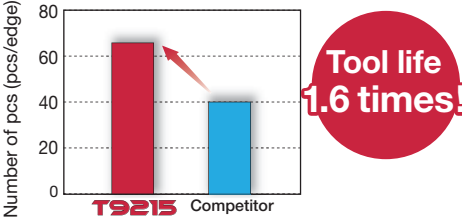
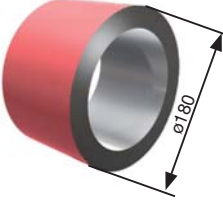

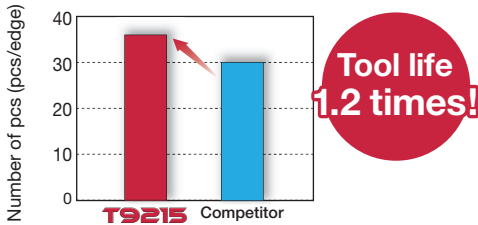
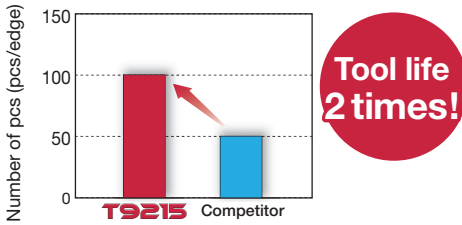
ISO	Operation	Chipbreaker	Grades	Depth of cut a_p (mm)	Feed f (mm/rev)	Cutting speed: V_c (m/min)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	TSF	T9215	0.2 - 1.5	0.08 - 0.4	150 - 400	150 - 400	120 - 300
		AS	T9215	0.5 - 2.0	0.2 - 0.6	150 - 400	150 - 400	120 - 300
		TS	T9215	0.5 - 1.5	0.08 - 0.2	150 - 400	150 - 400	120 - 300
		FW	T9215	0.5 - 1.5	0.2 - 0.4	150 - 400	150 - 400	120 - 300
	Medium	TM	T9215	1 - 5	0.2 - 0.5	150 - 400	150 - 400	120 - 300
		AM	T9215	1 - 5	0.2 - 0.6	150 - 400	150 - 400	120 - 300
		DM	T9215	1 - 5	0.2 - 0.5	150 - 400	150 - 400	120 - 300
		SW	T9215	0.5 - 2	0.3 - 0.6	150 - 400	150 - 400	120 - 300
Medium to heavy	TH	T9215	3 - 6	0.3 - 0.6	150 - 400	150 - 400	120 - 300	
M	Finishing	TSF	T9215	0.2 - 1.5	0.08 - 0.4	Stainless steel		
	Medium	TM	T9215	1 - 5	0.2 - 0.5	100 - 250		
K	Finishing	TSF	T9215	0.2 - 1.5	0.08 - 0.4	Cast iron		
	Medium	TM	T9215	1 - 5	0.2 - 0.5	140 - 500		
		AR	T9215	1 - 5	0.2 - 0.5	140 - 500		

For Positive Inserts

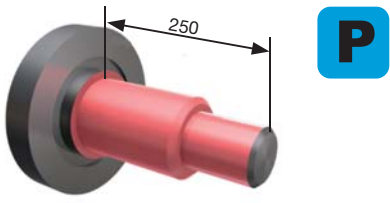
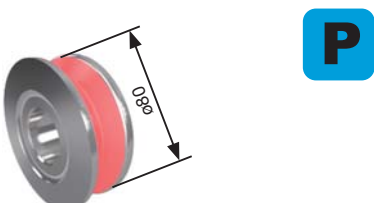
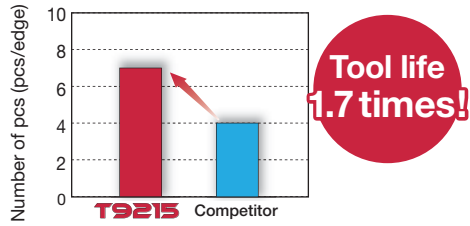
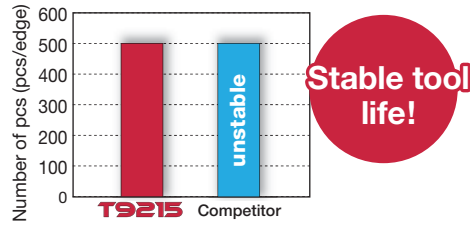
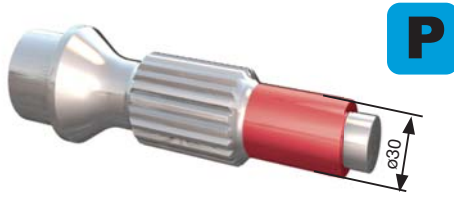
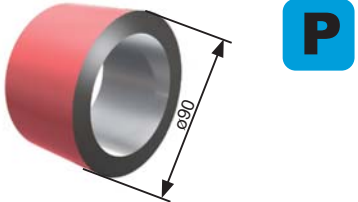
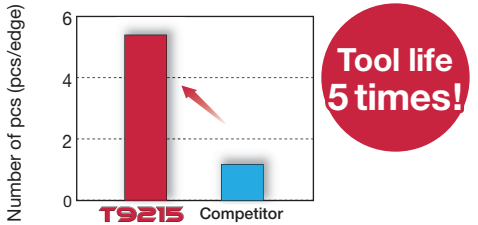
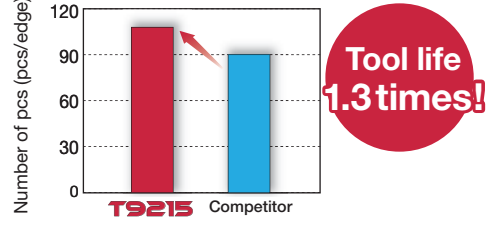
ISO	Operation	Chipbreaker	Grades	Depth of cut ap (mm)	Feed f (mm/rev)	Cutting speed: Vc (m/min)		
						Low carbon steels, alloy steels	Medium carbon steels, alloy steels	High carbon steels, alloy steels
P	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3	120 - 350	100 - 350	80 - 250
	Medium	PS	T9215	0.5 - 2.5	0.08 - 0.3	120 - 300	100 - 300	80 - 250
		SW	T9215	0.5 - 2	0.15 - 0.4	150 - 350	150 - 350	120 - 300
	Medium to heavy	PM	T9215	1 - 3	0.15 - 0.3	120 - 300	100 - 300	80 - 200
Stainless steel								
M	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3		50 - 200	
	Medium	PS	T9215	0.5 - 2.5	0.08 - 0.3		50 - 200	
Cast iron								
K	Finishing	PSF	T9215	0.1 - 0.5	0.05 - 0.3		100 - 350	
	Medium	PS	T9215	0.5 - 2.5	0.08 - 0.3		100 - 350	



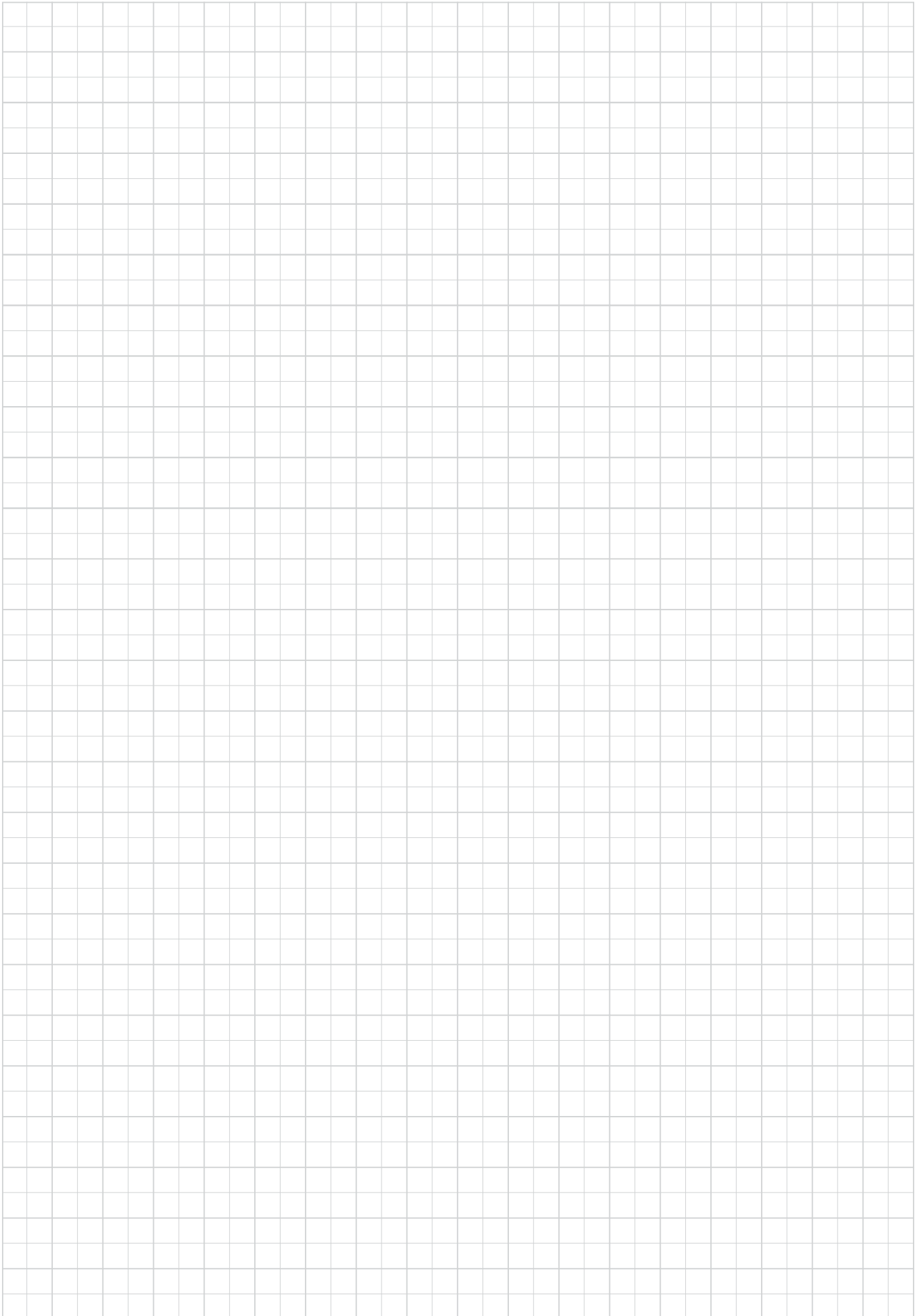
PRACTICAL EXAMPLES

Workpiece type		Automotive part	Automotive part
Insert		WNMG080408-AM	WNMG080408-AM
Grade		T9215	T9215
		S55C / C55	S55C / C55
		 P	 P
Cutting conditions	Cutting speed: V_c (m/min)	300	300
	Feed : f (mm/rev)	0.25	0.3
	Depth of cut : a_p (mm)	1.5	1.0
	Coolant	Wet	Wet
Results		 <p>T9215 our newest grade with outstanding wear resistance, which extended tool life by 2.0 times.</p>	 <p>T9215 our newest grade with outstanding wear resistance, which extended tool life by 1.6 times.</p>
Workpiece type		Carrier	Top shaft
Insert		WNMG080408-SW	CNMG120408-AM
Grade		T9215	T9215
		S45C / C45	Alloy steel
Workpiece material		 P	 P
Cutting conditions	Cutting speed: V_c (m/min)	300	250
	Feed : f (mm/rev)	0.4	0.25 - 0.35
	Depth of cut : a_p (mm)	1.0	2.0
	Coolant	Wet	Wet
Results		 <p>Combination of T9215 and the latest Wiper series realizes a stable longer tool life of about 1.2 times that of the current product!</p>	 <p>T9215 is superior in wear resistance and fracture resistance, realizing twice the stable long life as the current product!</p>

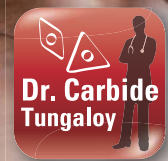
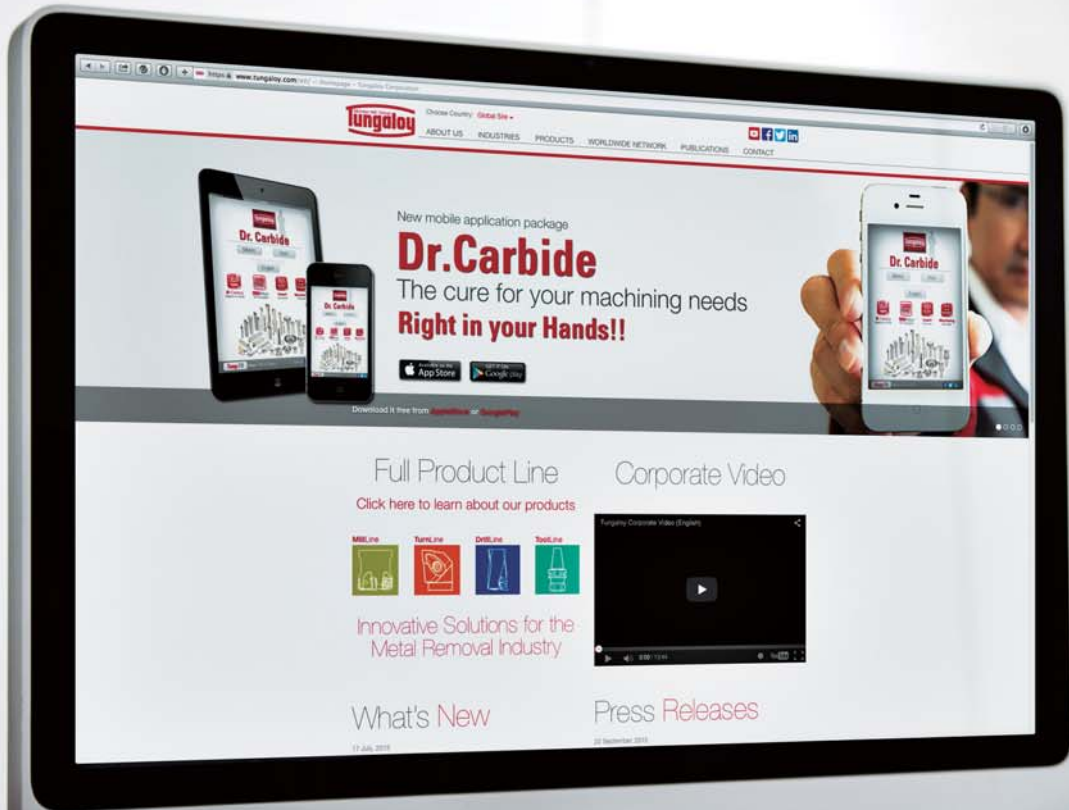
PRACTICAL EXAMPLES

Workpiece type		Shaft	Bearing part
Insert		CNMG120408-TM	DNMG150408-AM
Grade		T9215	T9215
		SCM440 / 42CrMo4	SUJ2 / B1
			
Cutting conditions	Cutting speed: V_c (m/min)	250	250
	Feed : f (mm/rev)	0.3	0.25 - 0.35
	Depth of cut : a_p (mm)	3.5	0.25
	Coolant	Wet	Wet
Results		 <p>Tool life 1.7 times!</p> <p>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!</p>	 <p>Stable tool life!</p> <p>T9215 provides decreasing the occurrence of sudden breakage and achieves stable processing!</p>
Workpiece type		Shaft	Pipe
Insert		DNMG150412-TM	DNMG150608-TM
Grade		T9215	T9215
		SCM440 / 42CrMo4	SM490 / E355D
Workpiece material			
Cutting conditions	Cutting speed: V_c (m/min)	140	200
	Feed : f (mm/rev)	0.38	0.35
	Depth of cut : a_p (mm)	4mm x 6 pass	3
	Coolant	Wet	Wet
Results		 <p>Tool life 5 times!</p> <p>T9215 demonstrates overwhelming wear resistance, combined with optimization of toolpath, achieves a stable long life of about 5 times that of the current product!</p>	 <p>Tool life 1.3 times!</p> <p>With overwhelming wear resistance and optimization of processing conditions, T9215 achieves about 1.3 times longer lifetime than the current product! In addition, we succeeded in greatly shortening machining time!</p>

MEMO



Check our site and our App to get more info!



Tungaloy Corporation (Head office)

11-1 Yoshima-Kogyodanchi
Iwaki-city, Fukushima, 970-1144 Japan
Phone: +81-246-36-8501
Fax: +81-246-36-8542
www.tungaloy.co.jp

Tungaloy America, Inc.

3726 N Ventura Drive
Arlington Heights, IL 60004, U.S.A.
Phone: +1-888-554-8394
Fax: +1-888-554-8392
www.tungaloyamerica.com

Tungaloy Canada

432 Elgin St. Unit 3
Brantford, Ontario N3S 7P7, Canada
Phone: +1-519-758-5779
Fax: +1-519-758-5791
www.tungaloy.co.jp/ca

Tungaloy de Mexico S.A.

C Los Arellano 113,
Parque Industrial Siglo XXI
Aguascalientes, AGS, Mexico 20290
Phone: +52-449-929-5410
Fax: +52-449-929-5411
www.tungaloy.co.jp/mx

Tungaloy do Brasil Ltda.

Avd. Independencia N4158 Residencial Flora
13280-000 Vinhedo, São Paulo, Brasil
Phone: +55-19-38262757
Fax: +55-19-38262757
www.tungaloy.com.br

Tungaloy Germany GmbH

An der Alten Ziegelei 1
D-40789 Monheim, Germany
Phone: +49-2173-90420-0
Fax: +49-2173-90420-19
www.tungaloy.de

Tungaloy France S.A.S.

ZA Courtaboeuf - Le Rio
1 rue de la Terre de feu
F-91952 Courtaboeuf Cedex, France
Phone: +33-1-6486-4300
Fax: +33-1-6907-7817
www.tungaloy.fr

Tungaloy Italia S.r.l.

Via E. Andolfato 10
I-20126 Milano, Italy
Phone: +39-02-252012-1
Fax: +39-02-252012-65
www.tungaloy.it

Tungaloy Czech s.r.o.

Turanka 115
CZ-627 00 Brno, Czech Republic
Phone: +420-532 123 391
Fax: +420-532 123 392
www.tungaloy.cz

Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7
Pol. Ind. Bufalvent
ES-08243 Manresa (BCN), Spain
Phone: +34 93 113 1360
Fax: +34 93 876 2798
www.tungaloy.es

Tungaloy Scandinavia AB

Bultgatan 38
442 40 Kungälv, Sweden
Phone: +46-462119200
www.tungaloy.se

Tungaloy Rus, LLC

Andropova avenue, h.18/7,
11 floor, office 3, 115432,
Moscow, Russia
Phone: +7-499-683-01-80
Fax: +7-499-683-01-81
www.tungaloy.co.jp/ru

Tungaloy East LLC

620075, Russian Federation, Sverdlovsk
Region, Ekaterinburg, Mamina-Sibiryaka str.,
bldg. 101, room 202
Phone: +7-343-286-48-23/24
Fax: +7-912-284-91-69
www.tungaloy.co.jp/ru

Tungaloy Polska Sp. z o.o.

ul. Genewska 24
03-963 Warszawa, Poland
Phone: +48-22-617-0890
Fax: +48-22-617-0890
www.tungaloy.co.jp/pl

Tungaloy U.K. Ltd

The Technology Centre,
Wolverhampton Science Park
Glaisher Drive, Wolverhampton
West Midlands WV10 9RU, UK
Phone: +44 121 4000 231
Fax: +44 121 270 9694
www.tungaloy.co.uk
salesinfo@tungaloyuk.co.uk

Tungaloy Hungary Kft

Erzsébet királyné útja 125
H-1142 Budapest, Hungary
Phone: +36 1 781-6846
Fax: +36 1 781-6866
www.tungaloy.co.jp/hu
info@tungaloytools.hu

Tungaloy Turkey

Dudullu, OSB 4. Cad No:4
34776 Umraniye Istanbul, TURKEY
Phone: +90 216 540 04 67
Fax: +90 216 540 04 87
www.tungaloy.com.tr
info@tungaloy.com.tr

Tungaloy Benelux b.v.

Tjalk 70
NL-2411 NZ Bodegraven, Netherlands
Phone: +31 172 630 420
Fax: +31 172 630 429
www.tungaloy-benelux.com

Tungaloy Croatia

Josipa Kozarca 4
10432 Bregana, Croatia
Phone: +385 1 3326 604
Fax: +385 1 3327 683
www.tungaloy.hr

Tungaloy Cutting Tool (Shanghai) Co.,Ltd.

Rm No 401 No.88 Zhabei
Jiangchang No.3 Rd
Shanghai 200436, China
Phone: +86-21-3632-1880
Fax: +86-21-3621-1918
www.tungaloy.co.jp/tcts

Tungaloy Cutting Tool (Thailand) Co.,Ltd.

Interlink tower 4th Fl.
1858/5-7 Bangna-Trad Road
km.5 Bangna, Bangna, Bangkok 10260
Thailand
Phone: +66-2-751-5711
Fax: +66-2-751-5715
www.tungaloy.co.th

Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1, #06-11 Oxley BizHub 2
Singapore 408734
Phone: +65-6391-1833
Fax: +65-6299-4557
www.tungaloy.co.jp/tspl

Tungaloy Vietnam

LE 04-38, Lexington Residence
67 Mai Chi Tho, Dist. 2,
Ho Chi Minh City, Vietnam
Phone: +84-8-37406660
Fax: +84-8-37406662
www.tungaloy.co.jp/tspl

Tungaloy India Pvt. Ltd.

Indiabulls Finance Centre,
Unit # 902-A, 9th Floor,
Tower 1, Senapati Bapat Marg,
Elphinstone Road (West),
Mumbai -400013, India
Phone: +91-22-6124-8804
Fax: +91-22-6124-8899
www.tungaloy.co.jp/in

Tungaloy Korea Co., Ltd

#1312, Byucksan Digital Valley 5-cha
Beotkkot-ro 244, Geumcheon-gu
153-788 Seoul, Korea
Phone: +82-2-2621-6161
Fax: +82-2-6393-8952
www.tungaloy.co.jp/kr

Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan SS6/14
Kelana Jaya, 47301
Petaling Jaya, Selangor Darul Ehsan
Malaysia
Phone: +603-7805-3222
Fax: +603-7804-8563
www.tungaloy.co.jp/my

Tungaloy Australia Pty Ltd

PO Box 2232, Rowville,
Victoria 3178, Australia
Phone: +61-3-9755-8147
Fax: +61-3-9755-6070
www.tungaloy.com.au

PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10 No.3-5
Cibitung
Bekasi 17510, Indonesia
Phone: +62-21-8261-5808
Fax: +62-21-8261-5809
www.tungaloy.co.jp/id



www.tungaloy.com

follow us at:
facebook.com/tungaloyjapan
twitter.com/tungaloyjapan

To see this product in action visit:

Tung-TV

www.youtube.com/tungaloycorporation

Distributed by:



DOWNLOAD
Dr. Carbide App



Available on the
App Store



GET IT ON
Google play



AS9100 Certified
78006
2015.11.04
ISO14001 Certified
EC97J1123
1997.11.26