



SUMITOMO

CARBIDE - CBN - DIAMOND

Coated Cermet Grade for Steel Turning

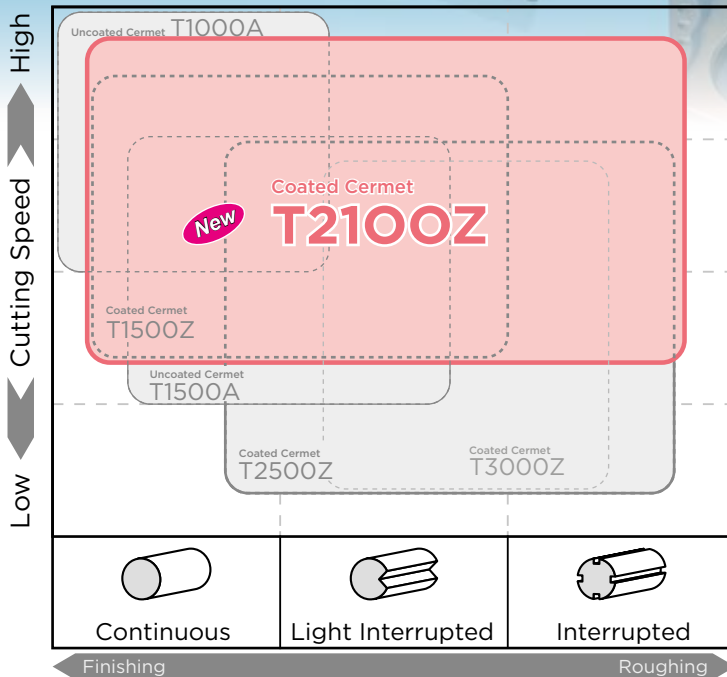
T2100Z

**Introducing a New Coated Cermet
Grade for Finishing with
Outstanding Stability**



Coated Cermet Grade for Steel Turning T2100Z

■ Application Range



T2100Z New Coated

Improved fracture resistance

Fracture Resistance
3x that of conventional grades

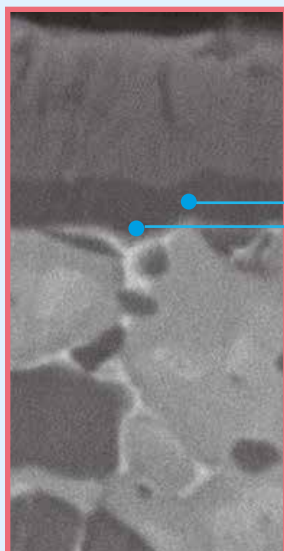
High wear resistance and high-quality finish

General-purpose	Coated Cermet	T1500Z	Coated
Emphasis on Fracture Resistance	Coated Cermet	T2500Z	Coated

Highly economical with reliable finish quality

Emphasis on Wear Resistance	Uncoated Cermet	T1000A	Un Coated
General-purpose	Uncoated Cermet	T1500A	Un Coated

■ Features of T2100Z



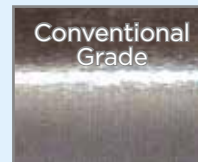
Improved Bonding Strength

Outstanding fracture resistance through a coating technology with excellent adhesion strength



Optimized Cutting Edge Treatment

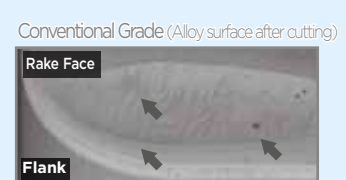
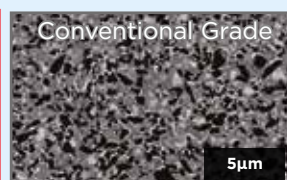
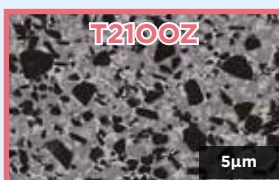
Smooth treatment method improves surface finish quality



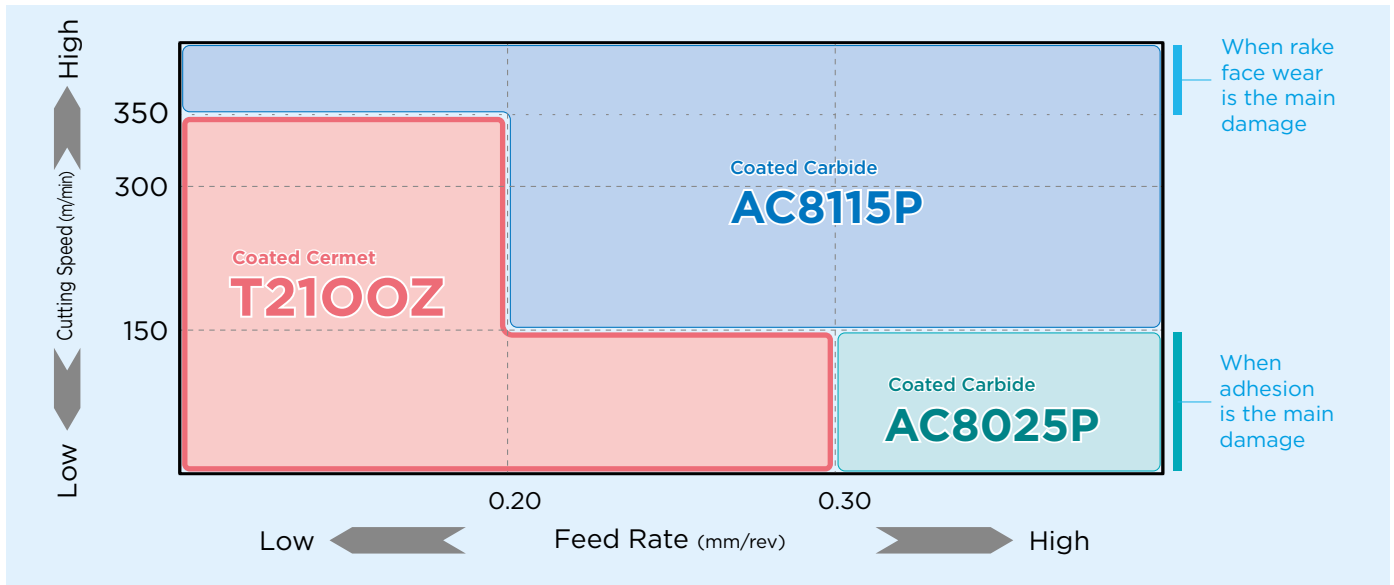
Work Material: 15CrMo5
Cutting Conditions: $v_c = 100\text{m/min}$
 $f = 0.2\text{mm/rev}$
 $a_p = 1.0\text{mm}$ Wet

New Cermet Substrate

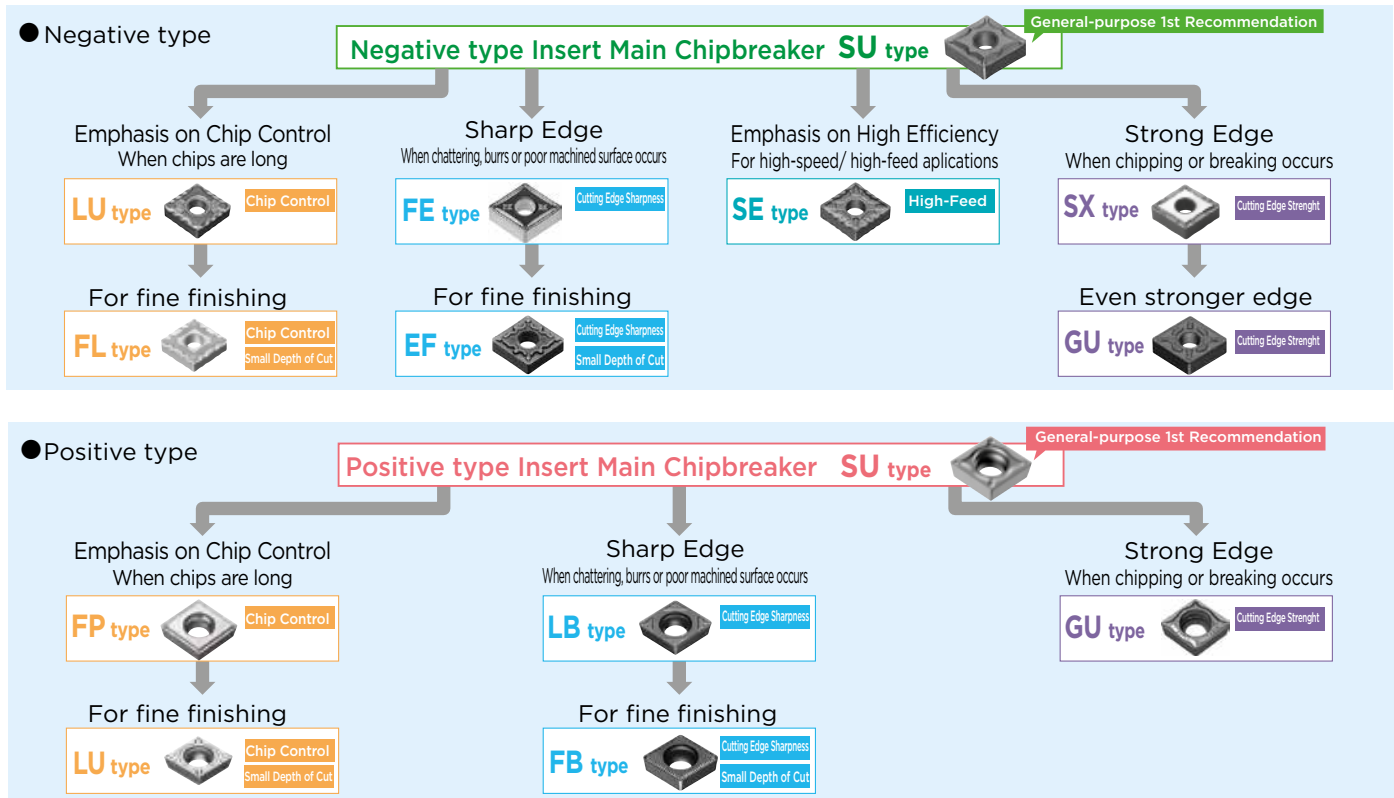
Crack progression dramatically suppressed with new dedicated high-strength alloy



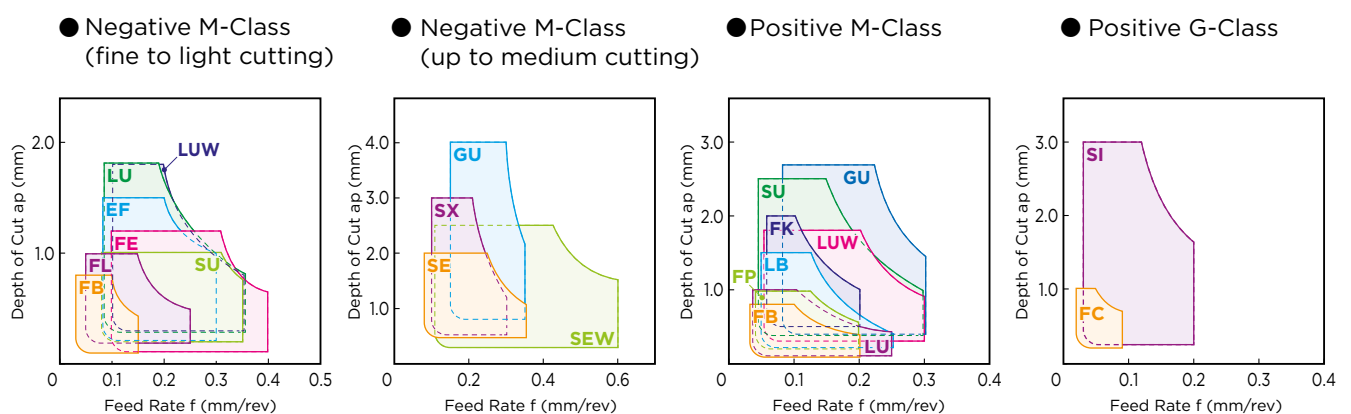
■ Distinguishing from Carbide Grades (example)



■ Chipbreaker Selection



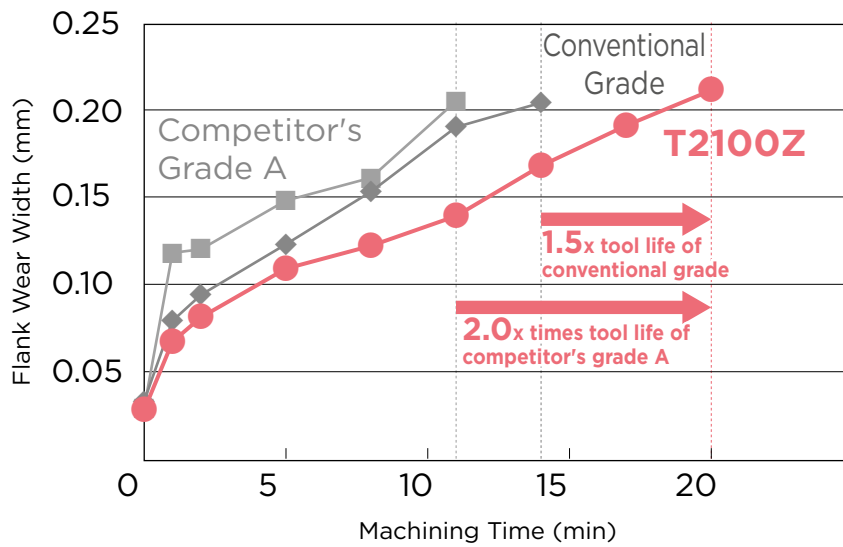
■ Chipbreaker Application Range



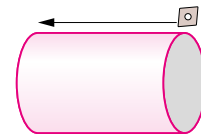
T2100Z

Wear Resistance Through External Continuous Turning (Steel)

When flank wear is the main form of damage, wear resistance is higher compared to conventional grades and competitors' grades



Work Material: 34CrMo4
Continuous External Turning
Insert: CNMG120408
Cutting Conditions: $v_c = 330\text{m/min}$
 $f = 0.2\text{mm/rev}$
 $a_p = 1.5\text{mm}$
Wet



T2100Z



Conventional Grade



Competitor's Grade A

Comparison of Machined Surfaces in Continuous Facing (Steel)

Surface finish quality/surface roughness are equivalent to or better than conventional grade



Machined surface
($v_c = 100\text{m/min}$ or below)



At machining start
 $R_a = 1.6$ $R_z = 6.9$



After wear progresses
 $R_a = 2.5$ $R_z = 15.8$

T2100Z



Machined surface
($v_c = 100\text{m/min}$ or below)



At machining start
 $R_a = 1.9$ $R_z = 8.2$



After wear progresses
 $R_a = 2.5$ $R_z = 14.1$

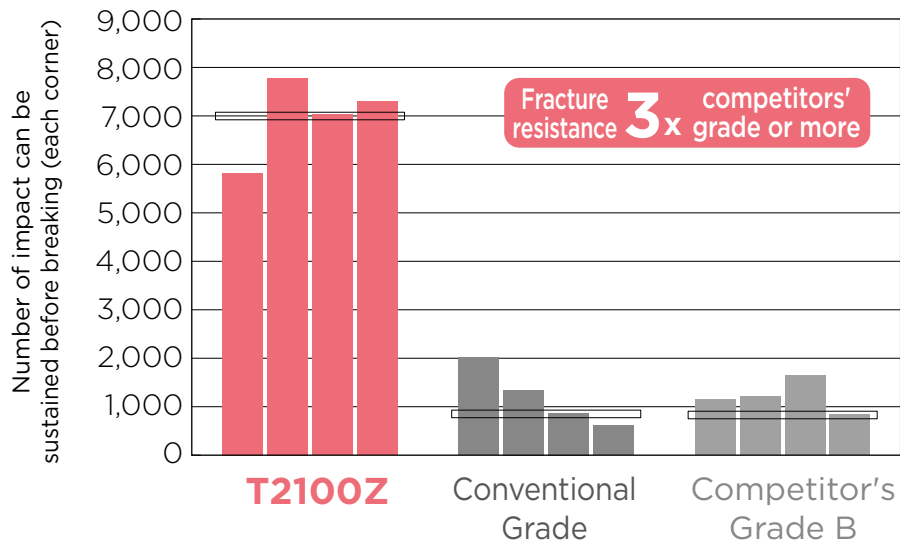
Conventional Grade

Work Material: 15CrMo Continuous facing Insert: CNMG120408 Cutting Conditions: $v_c = 0-100\text{m/min}$ (constant spindle speed) $f = 0.2\text{mm/rev}$ $a_p = 1.0\text{mm}$ Wet

T2100Z

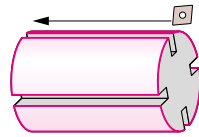
■ Fracture Resistance Through Interrupted External Turning (Steel)

Significantly Improved fracture resistance compared to conventional grades and competitors' grades



Work Material: 34CrMo4
External
Turning

Insert: CNMG120408
Cutting Conditions: $v_c = 250\text{m/min}$
 $f = 0.25\text{mm/rev}$
 $a_p = 1.5\text{mm}$
Wet



80° Diamond type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	CNMG 120402N-FB	○				0.2
	120404N-FB	●	12.7	4.76	5.16	0.4
	120408N-FB	○				0.8
	CNMG 120402N-FA	●				0.2
	120404N-FA	●	12.7	4.76	5.16	0.4
	120408N-FA	○				0.8
	CNMG 120404N-FL	●	12.7	4.76	5.16	0.4
	120408N-FL	●				0.8
	CNMG 090304N-FE	○	9.525	3.18	3.81	0.4
	090308N-FE	○				0.8
	CNMG 090408N-FE	○	9.525	4.76	3.81	0.8
	CNMG 120402N-FE	○				0.2
	120404N-FE	●	12.7	4.76	5.16	0.4
	120408N-FE	●				0.8
	CNMG 090304N-LU	○	9.525	3.18	3.81	0.4
	090308N-LU	●				0.8
	CNMG 120402N-LU	○				0.2
	120404N-LU	●	12.7	4.76	5.16	0.4
	120408N-LU	●				0.8
	120412N-LU	○				1.2
	CNMG 120404N-LUW	●	12.7	4.76	5.16	0.4
	120408N-LUW	●				0.8
	120412N-LUW	○				1.2
	CNMG 090408N-SU	○	9.525	4.76	3.81	0.8
	CNMG 120402N-SU	○				0.2
	120404N-SU	●	12.7	4.76	5.16	0.4
	120408N-SU	○				0.8
	120412N-SU	○				1.2
	CNMG 120404N-SE	●	12.7	4.76	5.16	0.4
	120408N-SE	●				0.8
	CNMG 120404N-SEW	○	12.7	4.76	5.16	0.4
	120408N-SEW	●				0.8
	CNMG 120404N-EF	○	12.7	4.76	5.16	0.4
	120408N-EF	●				0.8
	CNMG 120404N-SX	●	12.7	4.76	5.16	0.4
	120408N-SX	●				0.8
	CNMG 090408N-GU	○	9.525	4.76	3.81	0.8
	CNMG 120404N-GU	●	12.7	4.76	5.16	0.4
	120408N-GU	●				0.8

55° Diamond type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	DNMG 110404N-FB	○				0.4
	110408N-FB	○	9.525	4.76	3.81	0.8
	DNMG 150404N-FB	○	12.7	4.76	5.16	0.4
	150408N-FB	○				0.8
	DNMG 150604N-FB	●	12.7	6.35	5.16	0.4
	150608N-FB	●				0.8
	DNMG 150404N-FA	○	12.7	4.76	5.16	0.4
	150408N-FA	○				0.8
	DNMG 150604N-FA	●	12.7	6.35	5.16	0.4
	150608N-FA	●				0.8
	DNMG 150404N-FL	○	12.7	4.76	5.16	0.4
	150408N-FL	○				0.8
	DNMG 110404N-FE	●	9.525	4.76	3.81	0.4
	110408N-FE	○				0.8
	DNMG 150402N-FE	○				0.2
	150404N-FE	○	12.7	4.76	5.16	0.4
	150408N-FE	○				0.8
	150412N-FE	○				1.2
	DNMG 150602N-FE	○				0.2
	150604N-FE	○	12.7	6.35	5.16	0.4
	150608N-FE	●				0.8
	150612N-FE	○				1.2
	DNMG 110404N-LU	●	9.525	4.76	3.81	0.4
	110408N-LU	●				0.8
	DNMG 150402N-LU	○				0.2
	150404N-LU	○	12.7	4.76	5.16	0.4
	150408N-LU	●				0.8
	150412N-LU	○				1.2
	DNMG 110404N-SU	●	9.525	4.76	3.81	0.4
	110408N-SU	●				0.8
	DNMG 150402N-SU	○				0.2
	150404N-SU	○	12.7	4.76	5.16	0.4
	150408N-SU	○				0.8
	150412N-SU	○				1.2
	DNMG 150604N-SU	●	12.7	6.35	5.16	0.4
	150608N-SU	●				0.8
	DNMG 150404N-SE	○	12.7	4.76	5.16	0.4
	150408N-SE	●				0.8
	150412N-SE	○				1.2
	DNMX 150404N-SEW	○	12.7	4.76	5.16	0.4
	150408N-SEW	○				0.8
	DNMG 150404N-EF	○	12.7	4.76	5.16	0.4
	150408N-EF	○				0.8
	DNMG 150604N-EF	○	12.7	6.35	5.16	0.4
	150608N-EF	○				0.8
	DNMG 150404N-SX	○	12.7	4.76	5.16	0.4
	150408N-SX	●				0.8
	DNMG 150604N-SX	○	12.7	6.35	5.16	0.4
	150608N-SX	○				0.8
	DNMG 150404N-GU	○	12.7	4.76	5.16	0.4
	150408N-GU	○				0.8
	150412N-GU	○				1.2
	DNMG 150404R-UM	○				0.4
	150404L-UM	○	12.7	4.76	5.16	0.4
	150408R-UM	○				0.8
	150408L-UM	○				0.8

● = Euro stock

○ = Japan stock

 Square type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FB	SNMG 120404N-FB	○	12.7	4.76	5.16	0.4
	120408N-FB	○				0.8
 FL	SNMG 120408N-FL	○	12.7	4.76	5.16	0.8
 FE	SNMG 120404N-FE	○	12.7	4.76	5.16	0.4
	120408N-FE	○				0.8
	120412N-FE	○				1.2
 LU	SNMG 120408N-LU	●	12.7	4.76	5.16	0.8
	120412N-LU	●				1.2
 SU	SNMG 120408N-SU	○	12.7	4.76	5.16	0.8
 EF	SNMG 120404N-EF	○	12.7	4.76	5.16	0.4
	120408N-EF	○				0.8
 SJ	SNMG 090304N-SJ	○	9.525	3.18	3.81	0.4
	SNMG 120404N-SJ	○	12.7	4.76	5.16	0.4
 SX	SNMG 120404N-SX	○	12.7	4.76	5.16	0.4
	120408N-SX	●				0.8
 GU	SNMG 090308N-GU	○	9.525	3.18	3.81	0.8
	SNMG 120404N-GU	●	12.7	4.76	5.16	0.4
	120408N-GU	●				0.8
 UM	SNMG 120404R-UM	○				0.4
	120404L-UM	○				0.4
	120408R-UM	○				0.8
	120408L-UM	○				0.8
	120412R-UM	○				1.2
	120412L-UM	○				1.2

 35° Diamond type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FB	VNMG 160404N-FB	○	9.525	4.76	3.81	0.4
	160408N-FB	○				0.8
 FA	VNMG 160404N-FA	○	9.525	4.76	3.81	0.4
	160408N-FA	○				0.8
 FL	VNMG 160404N-FL	○	9.525	4.76	3.81	0.4
	160408N-FL	○				0.8
 FE	VNMG 160402N-FE	○	9.525	4.76	3.81	0.2
	160404N-FE	●				0.4
	160408N-FE	●				0.8
	160412N-FE	○				1.2
 LU	VNMG 160402N-LU	●	9.525	4.76	3.81	0.2
	160404N-LU	●				0.4
	160408N-LU	●				0.8
 SU	VNMG 160402N-SU	○	9.525	4.76	3.81	0.2
	160404N-SU	●				0.4
	160408N-SU	●				0.8
 SE	VNMG 160404N-SE	○	9.525	4.76	3.81	0.4
	160408N-SE	●				0.8
 EF	VNMG 160402N-EF	○	9.525	4.76	3.81	0.2
	160404N-EF	○				0.4
	160408N-EF	○				0.8
 SX	VNMG 160404N-SX	○	9.525	4.76	3.81	0.4
	160408N-SX	●				0.8
 GU	VNMG 160404N-GU	○	9.525	4.76	3.81	0.4
	160408N-GU	●				0.8

 Triangular type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FB	TNMG 160402N-FB	○	9.525	4.76	3.81	0.2
	160404N-FB	○				0.4
	160408N-FB	●				0.8
 FA	TNMG 160402N-FA	●	9.525	4.76	3.81	0.2
	160404N-FA	○				0.4
	160408N-FA	○				0.8
 FL	TNMG 160404N-FL	○	9.525	4.76	3.81	0.4
	160408N-FL	○				0.8
 FE	TNMG 160402N-FE	○	9.525	4.76	3.81	0.2
	160404N-FE	○				0.4
	160408N-FE	○				0.8
	160412N-FE	○				1.2
 LU	TNMG 160402N-LU	○	9.525	4.76	3.81	0.2
	160404N-LU	●				0.4
	160408N-LU	●				0.8
	160412N-LU	●				1.2
 SU	TNMG 160402N-SU	○	9.525	4.76	3.81	0.2
	160404N-SU	●				0.4
	160408N-SU	●				0.8
	160412N-SU	○				1.2
 SE	TNMG 160404N-SE	○	9.525	4.76	3.81	0.4
	160408N-SE	○				0.8
 EF	TNMG 160404N-EF	●	9.525	4.76	3.81	0.4
	160408N-EF	●				0.8
 SX	TNMG 160404N-SX	○	9.525	4.76	3.81	0.4
	160408N-SX	●				0.8
 GU	TNMG 160404N-GU	●	9.525	4.76	3.81	0.4
	160408N-GU	●				0.8
 UM	TNMG 160404R-UM	○	9.525	4.76	3.81	0.4
	160404L-UM	○				0.4
	160408R-UM	○				0.8
	160408L-UM	○				0.8

● = Euro stock

○ = Japan stock

Trigon type Negative Inserts / M-class

Shape	Cat. No.	Stock	Dimensions (mm)			
		T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FB	WNMG 060408N-FB	○	9.525	4.76	3.81	0.8
	WNMG 080402N-FB	○				0.2
	080404N-FB	○	12.7	4.76	5.16	0.4
	080408N-FB	○				0.8
 FA	WNMG 080402N-FA	●				0.2
	080404N-FA	●	12.7	4.76	5.16	0.4
	080408N-FA	○				0.8
	WNMG 080404N-FL	●	12.7	4.76	5.16	0.4
 FL	080408N-FL	○				0.8
	WNMG 060404N-FE	○	9.525	4.76	3.81	0.4
	060408N-FE	○				0.8
	WNMG 080402N-FE	○				0.2
 FE	080404N-FE	●	12.7	4.76	5.16	0.4
	080408N-FE	●				0.8
	080412N-FE	○				1.2
	WNMG 060404N-LU	●	9.525	4.76	3.81	0.4
 LU	060408N-LU	○				0.8
	WNMG 080404N-LU	●	12.7	4.76	5.16	0.4
	080408N-LU	●				0.8
	080412N-LU	○				1.2
 LUW	WNMG 060404N-LUW	●	9.525	4.76	3.81	0.4
	060408N-LUW	●				0.8
	WNMG 080404N-LUW	○	12.7	4.76	5.16	0.4
	080408N-LUW	●				0.8
 SU	080412N-LUW	○				1.2
	WNMG 060404N-SU	●	9.525	4.76	3.81	0.4
	060408N-SU	●				0.8
	WNMG 080404N-SU	●	12.7	4.76	5.16	0.4
 SE	080408N-SU	○				0.8
	080412N-SU	○				1.2
	WNMG 080404N-SE	○	12.7	4.76	5.16	0.4
	080408N-SE	●				0.8
 SEW	WNMG 080404N-SEW	●	12.7	4.76	5.16	0.4
	080408N-SEW	○				0.8
 EF	WNMG 060404N-EF	○	9.525	4.76	3.81	0.4
	060408N-EF	○				0.8
	WNMG 080404N-EF	●	12.7	4.76	5.16	0.4
	080408N-EF	○				0.8
 SX	WNMG 080404N-SX	○	12.7	4.76	5.16	0.4
	080408N-SX	●				0.8
 GU	WNMG 060408N-GU	○	9.525	4.76	3.81	0.8
	WNMG 080404N-GU	●	12.7	4.76	5.16	0.4
	080408N-GU	●				0.8

80° Diamond type Positive Inserts / G-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FC	7°	CCGT 060201MN-FC	○				< 0.1
		060202MN-FC	○	6.35	2.38	2.8	< 0.2
		060204MN-FC	○				< 0.4
		CCGT 09T301MN-FC	○				< 0.1
 SI	7°	09T302MN-FC	○	9.525	3.97	4.4	< 0.2
		09T304MN-FC	○				< 0.4
		CCGT 09T301MN-SI	○				< 0.1
		09T302MN-SI	●	9.525	3.97	4.4	< 0.2
 SC	7°	09T304MN-SI	●				< 0.4
		CCGT 060201MN-SC	○				< 0.1
		060202MN-SC	●	9.525	3.97	4.4	< 0.2
		060204MN-SC	●				< 0.4
 SC	7°	CCGT 080201MN-SC	○	9.525	3.97	4.4	< 0.1
		080202MN-SC	○				< 0.2
		CCGT 090301MN-SC	○	9.525	3.97	4.4	< 0.1
		090302MN-SC	●				< 0.2
 SC	7°	CCGT 09T301MN-SC	○				< 0.1
		09T302MN-SC	●	9.525	3.97	4.4	< 0.2
		09T304MN-SC	●				< 0.4

80° Diamond type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 FB	7°	CCMT 060202N-FB	●	6.35	2.38	2.8	0.2
		060204N-FB	●				0.4
		CCMT 09T302N-FB	○				0.2
		09T304N-FB	○	9.525	3.97	4.4	0.4
 FB	7°	09T308N-FB	○				0.8
		CCMT 060202N-LU	○	6.35	2.38	2.8	0.2
		060204N-LU	○				0.4
		CCMT 09T304N-LU	○	9.525	3.97	4.4	0.4
 LU	7°	09T308N-LU	●				0.8
		CCMT 09T304N-LUW	○	9.525	3.97	4.4	0.4
		09T308N-LUW	●				0.8
		CCMT 060202N-FP	○	6.35	2.38	2.8	0.2
 FP	7°	060208N-FP	○				0.8
		CCMT 09T302N-FP	○	9.525	3.97	4.4	0.2
		09T304N-FP	○				0.4
		CCMT 120404N-FP	○	12.7	4.76	5.5	0.4
 FP	7°	120408N-FP	○				0.8
		CCMT 060202N-LB	○	6.35	2.38	2.8	0.2
		060204N-LB	○				0.4
		060208N-LB	○				0.8
 LB	7°	CCMT 09T302N-LB	○	9.525	3.97	4.4	0.2
		09T304N-LB	○				0.4
		09T308N-LB	●				0.8
		CCMT 060202N-SU	○	6.35	2.38	2.8	0.2
 SU	7°	060204N-SU	●				0.4
		060208N-SU	●				0.8
		CCMT 09T302N-SU	○	9.525	3.97	4.4	0.2
		09T304N-SU	○				0.4
 SU	7°	09T308N-SU	●				0.8
		CCMT 060204N-GU	○	6.35	2.38	2.8	0.4
		060208N-GU	○				0.8
		CCMT 09T304N-GU	○	9.525	3.97	4.4	0.4
 GU	7°	09T308N-GU	●				0.8
		CPMT 080204N-FB	○	7.94	2.38	3.4	0.4
		CPMT 090304N-FB	○	9.525	3.18	4.4	0.4
		090308N-FB	○				0.8
 FB	11°	CPMT 080204N-LU	○	7.94	2.38	3.4	0.4
		CPMT 090304N-LU	○	9.525	3.18	4.4	0.4
		090308N-LU	○				0.8
		CPMT 090304N-LUW	○	9.525	3.18	4.4	0.4
 LU	11°	090308N-LUW	●				0.8
		CPMT 080204N-LB	○	7.94	2.38	3.4	0.4
		CPMT 090304N-LB	○	9.525	3.18	4.4	0.4
		090308N-LB	○				0.8
 LB	11°	CPMT 080204N-SU	○	7.94	2.38	3.4	0.4
		CPMT 090304N-SU	○	9.525	3.18	4.4	0.4
		090308N-SU	○				0.8
		CPMT 090304N-SU	●	9.525	3.18	4.4	0.4
 SU	11°	090308N-SU	●				0.8
		CPMT 090304N-GU	○	9.525	3.18	4.4	0.4
		090308N-GU	○				0.8
		CPMT 090304N-GU	●				0.8

● = Euro stock

○ = Japan stock

A "<" next to the corner radius indicates negative tolerance.

T2100Z

 55° Diamond type Positive Inserts / G-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)					
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius		
 FC	7°	DCGT 070201MN-FC	○	6.35	2.38	2.8	< 0.1		
		070202MN-FC	○				< 0.2		
		070204MN-FC	○				< 0.4		
 FC	7°	DCGT 11T301MN-FC	○	9.525	3.97	4.4	< 0.1		
		11T302MN-FC	○				< 0.2		
		11T304MN-FC	○				< 0.4		
 SI	7°	DCGT 070201MN-SI	○	6.35	2.38	2.8	< 0.1		
		070202MN-SI	●				< 0.2		
		070204MN-SI	●				< 0.4		
	7°	DCGT 11T301MN-SI	○	9.525	3.97	4.4	< 0.1		
		11T302MN-SI	●				< 0.2		
		11T304MN-SI	●				< 0.4		
 SC	7°	DCGT 070201MN-SC	○	6.35	2.38	2.8	< 0.1		
		070202MN-SC	●				< 0.2		
		070204MN-SC	●				< 0.4		
	7°	DCGT 090201MN-SC	○	6.35	2.38	2.8	< 0.1		
		090202MN-SC	○				< 0.2		
	7°	DCGT 110301MN-SC	○	6.35	2.38	2.8	< 0.1		
		110302MN-SC	○				< 0.2		
DCGT 11T3003MN-SC		○	9.525				3.97	4.4	< 0.03
11T301MN-SC		○							< 0.1
11T302MN-SC	●	< 0.2							
	11T304MN-SC	●	< 0.4						
	11T308MN-SC	●	< 0.8						

 Square type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	SCMT 09T304N-FB	○				0.4
		09T308N-FB	●	9.525	3.97	4.4	0.8
	7°	SCMT 09T304N-LU	○				0.4
		09T308N-LU	○	9.525	3.97	4.4	0.8
	7°	SCMT 09T304N-FP	●				0.4
		09T308N-FP	○	9.525	3.97	4.4	0.8
	7°	SCMT 120404N-FP	○				0.4
		120408N-FP	○	12.7	4.76	5.5	0.8
	7°	SCMT 09T304N-LB	○				0.4
		09T308N-LB	○	9.525	3.97	4.4	0.8
	11°	SPMT 090304N-FB	○				0.4
		090308N-FB	○	9.525	3.18	3.4	0.8
	11°	SPMT 090304N-LU	○				0.4
		090308N-LU	○	9.525	3.18	3.4	0.8
	11°	SPMT 090304N-LB	○				0.4
		090308N-LB	○	9.525	3.18	3.4	0.8

 55° Diamond type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	DCMT 070202N-FB	●				0.2
		070204N-FB	●	6.35	2.38	2.8	0.4
		070208N-FB	●				0.8
	7°	DCMT 11T302N-FB	●				0.2
		11T304N-FB	●	9.525	3.97	4.4	0.4
		11T308N-FB	●				0.8
	7°	DCMT 070202N-LU	○				0.2
		070204N-LU	○	6.35	2.38	2.8	0.4
	7°	DCMT 11T302N-LU	●				0.2
		11T304N-LU	○	9.525	3.97	4.4	0.4
		11T308N-LU	●				0.8
	7°	DCMT 070202N-FP	●				0.2
		070204N-FP	●	6.35	2.38	2.8	0.4
	7°	DCMT 11T308N-FP	●	9.525	3.97	4.4	0.8
	7°	DCMT 070202N-LB	○				0.2
		070204N-LB	●	6.35	2.38	2.8	0.4
	7°	070208N-LB	●				0.8
		DCMT 11T302N-LB	●				0.2
	7°	11T304N-LB	●	9.525	3.97	4.4	0.4
		11T308N-LB	●				0.8
	7°	DCMT 070202N-SU	●				0.2
		070204N-SU	●	6.35	2.38	2.8	0.4
	7°	070208N-SU	●				0.8
		DCMT 11T302N-SU	●				0.2
	7°	11T304N-SU	●	9.525	3.97	4.4	0.4
		11T308N-SU	●				0.8
	7°	DCMT 070204N-GU	○				0.4
		070208N-GU	○	6.35	2.38	2.8	0.8
	7°	DCMT 11T302N-GU	○				0.2
		11T304N-GU	●	9.525	3.97	4.4	0.4
		11T308N-GU	●				0.8

 Square type Positive Inserts / G-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	SCGT 070201MN-SC	○				< 0.1
		070202MN-SC	○	7.94	2.38	4.4	< 0.2
	7°	SCGT 090301MN-SC	○				< 0.1
	7°	090302MN-SC	○	9.525	3.18	4.4	< 0.2
		SCGT 09T301MN-SC	○				< 0.1
	7°	09T302MN-SC	○	9.525	3.97	4.4	< 0.2

● = Euro stock

○ = Japan stock

A "<" next to the corner radius indicates negative tolerance.

T2100Z**△ Triangular type Positive Inserts / G-class**

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	TPGT 110302MN-FC	○	6.35	3.18	3.4	< 0.2
		110304MN-FC	○				< 0.4

△ Triangular type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	TCMT 110204N-FB	●	6.35	2.38	2.8	0.4
		110208N-FB	○				0.8
	7°	TCMT 110204N-LU	○	6.35	2.38	2.8	0.4
		110208N-LU	○				0.8
	7°	TCMT 110204N-FP	●	6.35	2.38	2.8	0.4
		110208N-FP	●				0.8
	7°	TCMT 16T304N-FP	●	9.525	3.97	4.3	0.4
		16T308N-FP	●				0.8
	7°	TCMT 110204N-LB	○	6.35	2.38	2.8	0.4
		110208N-LB	○				0.8
	11°	TPMT 080202N-FB	○	4.76	2.38	2.4	0.2
		080204N-FB	○				0.4
	11°	TPMT 090202N-FB	○	5.56	2.38	2.8	0.2
		090204N-FB	●				0.4
	11°	TPMT 110302N-FB	○	6.35	3.18	3.4	0.2
		110304N-FB	●				0.4
	11°	TPMT 110308N-FB	●				0.8
		110308N-FB	●				0.8
	11°	TPMT 160304N-FB	○	9.525	3.18	4.4	0.4
		160308N-FB	○				0.8
	11°	TPMT 160404N-FB	○	9.525	4.76	4.4	0.4
		160408N-FB	○				0.8
	11°	TPMT 080202N-LU	○	4.76	2.38	2.4	0.2
		080204N-LU	○				0.4
	11°	TPMT 090202N-LU	○	5.56	2.38	2.8	0.2
		090204N-LU	○				0.4
	11°	TPMT 110302N-LU	○	6.35	3.18	3.4	0.2
		110304N-LU	○				0.4
	11°	TPMT 110308N-LU	○				0.8
		110308N-LU	○				0.8
	11°	TPMT 110308N-FK	○	6.35	3.18	3.4	0.8
		110308N-FK	○				0.8
	11°	TPMT 160404N-FK	○	9.525	4.76	4.4	0.4
		160408N-FK	○				0.8
	11°	TPMT 080202N-LB	○	4.76	2.38	2.4	0.2
		080204N-LB	○				0.4
	11°	TPMT 090202N-LB	●	5.56	2.38	2.8	0.2
		090204N-LB	○				0.4
	11°	TPMT 110302N-LB	○	6.35	3.18	3.4	0.2
		110304N-LB	○				0.4
	11°	TPMT 110308N-LB	○	9.525	3.18	4.4	0.8
		110308N-LB	○				0.8
	11°	TPMT 160404N-LB	○	9.525	4.76	4.4	0.4
		160408N-LB	○				0.8
	11°	TPMT 080202N-SU	○	4.76	2.38	2.4	0.2
		080204N-SU	○				0.4
	11°	TPMT 110302N-SU	○	6.35	3.18	3.4	0.2
		110304N-SU	●				0.4
	11°	TPMT 110308N-SU	○				0.8
		110308N-SU	○				0.8
	11°	TPMT 160404N-SU	○	9.525	4.76	4.4	0.4
		160408N-SU	●				0.8
	11°	TPMT 110304N-GU	○	6.35	3.18	3.4	0.4
		110308N-GU	○				0.8
	11°	TPMT 160404N-GU	○	9.525	4.76	4.4	0.4
		160408N-GU	○				0.8

● = Euro stock

○ = Japan stock

A "<" next to the corner radius indicates negative tolerance.

△ Triangular type Positive Inserts / G-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	TCGT 080201MN-SC	○	4.76	2.38	2.3	< 0.1
		080202MN-SC	○				< 0.2
	7°	TCGT 090201MN-SC	○	5.56	2.38	2.5	< 0.1
		090202MN-SC	○				< 0.2
	7°	TCGT 110201MN-SC	○	6.35	2.38	2.8	< 0.1
		110202MN-SC	○				< 0.2
	7°	TCGT 110204MN-SC	○				< 0.4
		110204MN-SC	○				< 0.4
	7°	TCGT 110301MN-SC	○	6.35	3.18	2.8	< 0.1
		110302MN-SC	○				< 0.2

◇ 35° Diamond type Positive Inserts / G-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	VCGT 110301MN-FC	○	6.35	3.18	2.8	< 0.1
		110302MN-FC	○				< 0.2
		110304MN-FC	○				< 0.4
	7°	VCGT 110301MN-SI	○	6.35	3.18	2.8	< 0.1
		110302MN-SI	●				< 0.2
		110304MN-SI	●				< 0.4
	7°	110308MN-SI	●				< 0.8
		VCGT 160402MN-SI	●	9.525	4.76	4.4	< 0.2
	7°	160404MN-SI	●				< 0.4

◇ 35° Diamond type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	5°	VBMT 110302N-FB	●	6.35	3.18	2.8	0.2
		110304N-FB	●				0.4
		110308N-FB	●				0.8
	5°	VBMT 160404N-FB	●	9.525	4.76	4.4	0.4
		160408N-FB	●				0.8
		160408N-FB	●				0.8
	5°	VBMT 110302N-LU	○	6.35	3.18	2.8	0.2
		110304N-LU	○				0.4
		110304N-LU	○				0.4
	5°	VBMT 160404N-LU	○	9.525	4.76	4.4	0.4
		160408N-LU	○				0.8
		160408N-LU	○				0.8
	5°	VBMT 110302N-LB	○	6.35	3.18	2.8	0.2
		110304N-LB	○				0.4
		110308N-LB	○				0.8
	5°	VBMT 160404N-LB	●	9.525	4.76	4.4	0.4
		160408N-LB	●				0.8
		160412N-LB	●				1.2
	5°	VBMT 160404N-SU	●	9.525	4.76	4.4	0.4
		160408N-SU	●				0.8
	5°	VBMT 110304N-GU	○	6.35	3.18	2.8	0.4
		110308N-GU	○				0.8
		110308N-GU	○				0.8
	7°	VCMT 080202N-FB	○	4.76	2.38	2.3	0.2
		080204N-FB	●				< 0.4
		VCMT 160404N-FB	●	9.525	4.76	4.4	0.4
	7°	VCMT 160408N-FB	●				0.8
		160404N-LU	●	9.525	4.76	4.4	0.4
		160408N-LU	●				0.8
	7°	VCMT 080202N-LB	○	4.76	2.38	2.3	0.2
		080204N-LB	○				0.4
		VCMT 160404N-LB	○	9.525	4.76	4.4	0.4
	7°	160408N-LB	○				0.8

T2100Z

Trigon type Positive Inserts / M-class

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	WPMT 110204N-LB	○	6.35	2.38	2.8	0.4
	11°	WPMT 160308N-LB	○	9.525	3.18	4.4	0.8

Square type Positive Inserts / M-class (Without Hole)

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	SPMR 090304N-FK	○	9.525	3.18	-	0.4
		090308N-FK	○				0.8
	11°	SPMR 120304N-FK	○	12.7	3.18	-	0.4
		120308N-FK	○				0.8

Triangular type Positive Inserts / M-class (Without Hole)

Shape	Relief Angle	Cat. No.	Stock	Dimensions (mm)			
			T2100Z	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	TPMR 090204N-FK	○	5.56	2.38	-	0.4
	11°	TPMR 110302N-FK	○	6.35	3.18	-	0.2
		110304N-FK	○				0.4
		110308N-FK	○				0.8
		TPMR 160304N-FK	○				0.4
	11°	160308N-FK	○	9.525	3.18	-	0.8
		160312N-FK	○				1.2

T2100Z

Application Examples

20CrMo4 Shaft P Fracture suppressed for stable machining compared to competitor's coated cermet T2100Z+FE (400 pcs/C) Competitor's Grade A (P20 CVD cermet) (200 pcs/C) Tool: DNMG150408N-FE (T2100Z) Continuous turning Cutting Conditions: $vc = 350\text{m/min}$ $f = 0.2\text{-}0.5\text{mm/rev}$ $ap = 0.2\text{-}0.8\text{mm}$ Wet	20CrMo4 Shaft P Flank wear suppressed compared to conventional coated cermet T2100Z+FE (400 pcs/C) Conventional Grade (P20 PVD cermet) (400 pcs/C) Flank Wear Width: 160µm Flank Wear Width: 230µm Tool: DNMG150408N-FE (T2100Z) Continuous turning Cutting Conditions: $vc = 350\text{m/min}$ $f = 0.2\text{-}0.3\text{mm/rev}$ $ap = 0.2\text{-}1.0\text{mm}$ Wet						
20CrMo4 Shaft Automotive Component P Flank wear suppressed compared to competitor's coated cermet T2100Z+SE (100 pcs/C) Competitor's Grade B (P20 CVD cermet) (100 pcs/C) Flank Wear Width: 60µm Flank Wear Width: 140µm Tool: DNMG150408N-SE (T2100Z) Continuous turning Cutting Conditions: $vc = 260\text{m/min}$ $f = 0.1\text{-}0.2\text{mm/rev}$ $ap = 0.33\text{mm}$ Wet	Ck53 Hub P Stable and 10% longer tool life compared to conventional coated cermet (P30) <table border="1"> <thead> <tr> <th>Material</th> <th>No. of Workpieces (pcs/C)</th> </tr> </thead> <tbody> <tr> <td>T2100Z+FL (325 pcs/C)</td> <td>325</td> </tr> <tr> <td>Conventional Grade (P30 PVD cermet) (300 pcs/C)</td> <td>300</td> </tr> </tbody> </table> Tool: DNMG150408N-FL (T2100Z) Continuous turning Cutting Conditions: $vc = 300\text{m/min}$ $f = 0.3\text{mm/rev}$ $ap = 0.15\text{mm}$ Wet	Material	No. of Workpieces (pcs/C)	T2100Z+FL (325 pcs/C)	325	Conventional Grade (P30 PVD cermet) (300 pcs/C)	300
Material	No. of Workpieces (pcs/C)						
T2100Z+FL (325 pcs/C)	325						
Conventional Grade (P30 PVD cermet) (300 pcs/C)	300						
SPHD Frame P Stable machining and flank wear suppressed compared to coated carbide (P20) T2100Z+SE (120 pcs/C) Conventional Grade (P20 CVD cermet) (120 pcs/C) Tool: DNMG150404N-SE (T2100Z) Continuous turning Cutting Conditions: $vc = 350\text{m/min}$ $f = 0.1\text{-}0.2\text{mm/rev}$ $ap = 1.0\text{mm}$ Wet	SPHD Frame P Flank wear suppressed compared to conventional coated cermet T2100Z+LU (50 pcs/C) Conventional Grade (P20 PVD cermet) (50 pcs/C) Tool: DNMG150408N-LU (T2100Z) Continuous turning Cutting Conditions: $vc = 300\text{m/min}$ $f = 0.1\text{-}0.3\text{mm/rev}$ $ap = 0.3\text{mm}$ Wet						

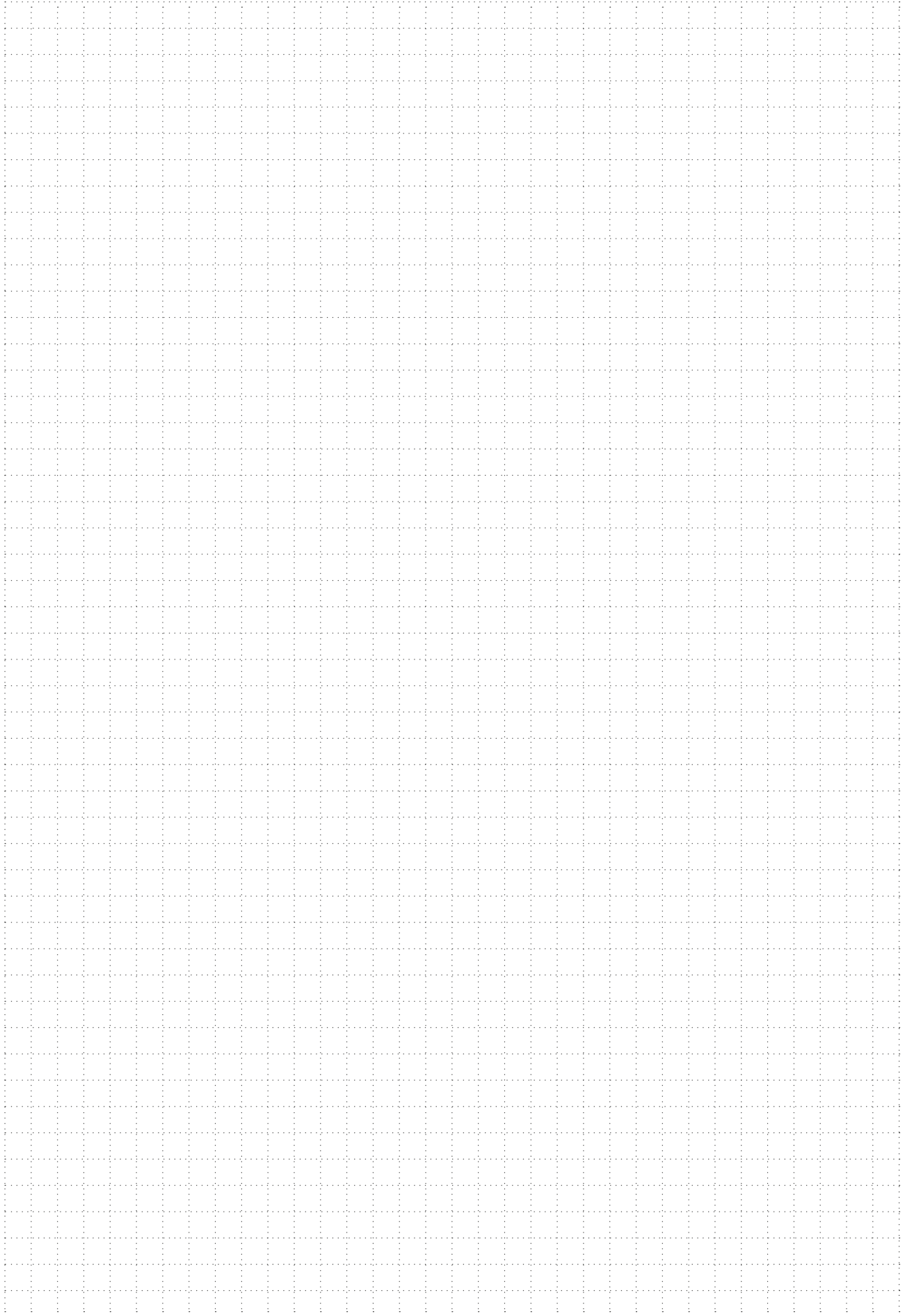
■ Recommended Cutting Conditions

Work Material	Application	Grade	Cutting Conditions			Min - Optimum - Max
			Depth of Cut ap (mm)	Feed Rate f (mm/rev)	Cutting Speed vc (m/min)	
Mild Steel (S235J, etc.)	Continuous to General-purpose	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.25	50 - 250 - 400	
	Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.30	50 - 200 - 350	
	Heavy Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.10 - 0.15 - 0.35	50 - 200 - 300	
Low Carbon Steel Low-alloy Steel (C10, 15CrMo5, etc.)	Continuous to General-purpose	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.25	50 - 200 - 350	
	Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.30	50 - 180 - 300	
	Heavy Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.10 - 0.15 - 0.35	50 - 180 - 280	
High Carbon Steel High-alloy Steel (C45, 24CrMo5, etc.)	Continuous to General-purpose	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.25	50 - 180 - 300	
	Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.05 - 0.15 - 0.30	50 - 150 - 280	
	Heavy Interrupted	T2100Z	0.2 - 1.0 - 2.5	0.10 - 0.15 - 0.35	50 - 150 - 250	

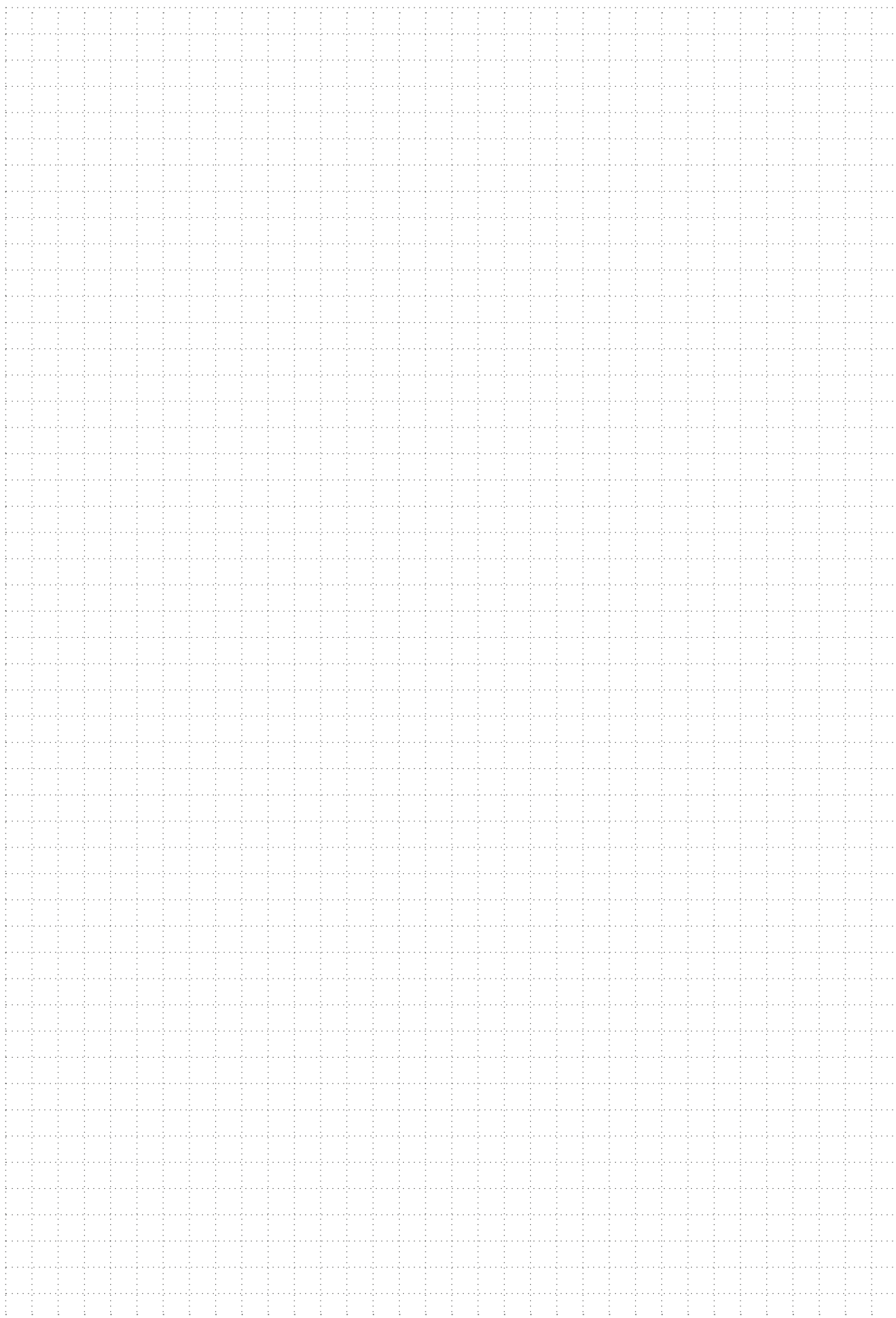
■ Characteristics Values

Work Material	Grade	Hardness (HRA)	TRS (GPa)	Coating type	Coating Thickness (μm)	Features
	T2100Z	92.0	2.2	ABSOTECH	3	- Our 1st recommended cermet grade for turning steel - With high stability through the use of a tough new substrate, this general-purpose grade supports various kinds of machining

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SUMITOMO ELECTRIC Hartmetall GmbH
Konrad-Zuse-Straße 9 | 47877 Willich | Germany
T +49 2154 4992-0
info@sumitomotool.com
www.sumitomotool.com



SUMITOMO ELECTRIC Hardmetal Ltd.
2 Devon Way | Longbridge Technology Park
Birmingham B31 2 TS | UK
T +44 121 6613650
salesUK@sumitomotool.com



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