Tooling News No.568

SUMITOMO
CARBIDE - CBN - DIAMOND
Global Support, Global Solutions.

Coated Grades for Cast Iron Turning

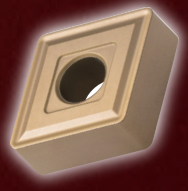
New AC4115K/AC4125K

From Ultra-high-speed Turning of Gray Cast Iron to Heavy Interrupted Turning of High-strength Ductile Cast Iron

2024-014 JTA ECO PRODUCT (AC4125K)

New New Grade for Continuous Turning of Cast Iron

Introducing AC4115K



P M K N S H

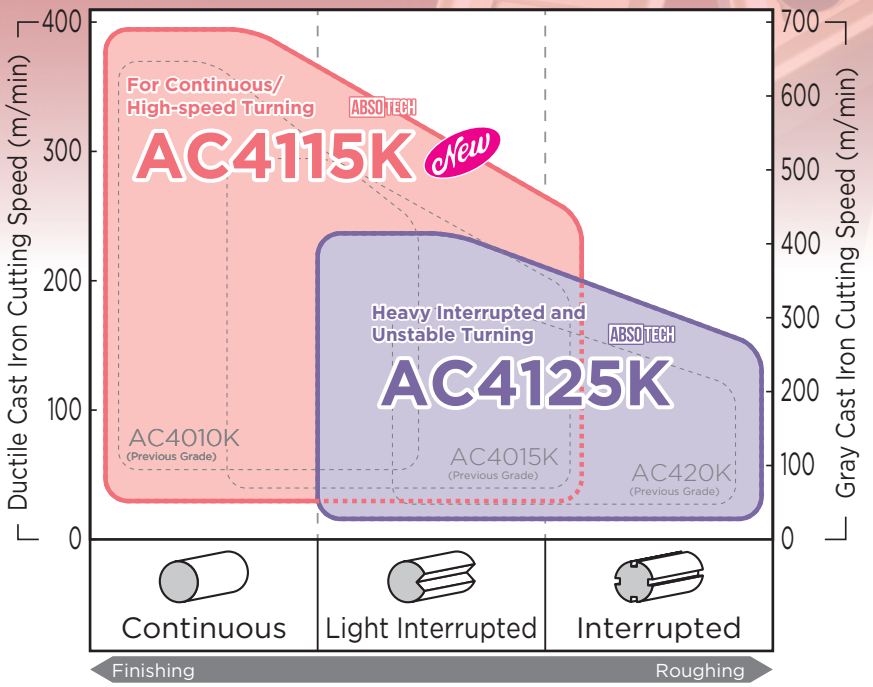
SUMITOMO ELECTRIC GROUP

Coated Grades for Cast Iron Turning

New AC4115K/AC4125K

VIDEO OF CUTTING

■ Application Range



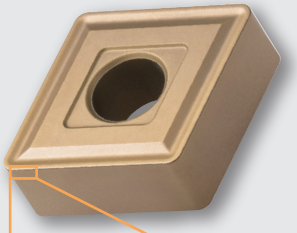
AC4115K New — CVD ABSOTECH

Our 1st recommended grade for turning gray cast iron.
Also ideal for continuous turning of ductile cast iron.
High-strength coating realizes stable and long tool life.

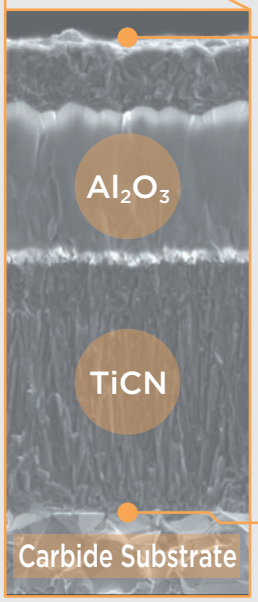
AC4125K — CVD ABSOTECH

Our 1st recommended grade for turning of ductile cast iron.
In particular, stable and long tool life can be achieved in the roughing of differential cases and carrier cases.

■ Features of AC4115K/AC4125K



Utilizing high-adhesion technology between the coating layer and carbide substrate, as well as a technology for micro-structural and crystal orientation control of the Al_2O_3 layer. Furthermore, advancements in stress control technology achieved through special surface treatment provide excellent wear and chipping resistance. In addition, its gold exterior color makes used corners easily identifiable.



Special Surface Treatment

Significantly improved compressive strength while maintaining its gold exterior.
Chipping resistance: **Twice that of conventional grades.**

Crystal Orientation Controlled Fine Alumina Layer

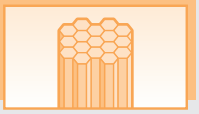


Image of Crystal Orientation

Micro-structural control significantly improves coating strength.
Chipping resistance: **Twice that of conventional grades.**

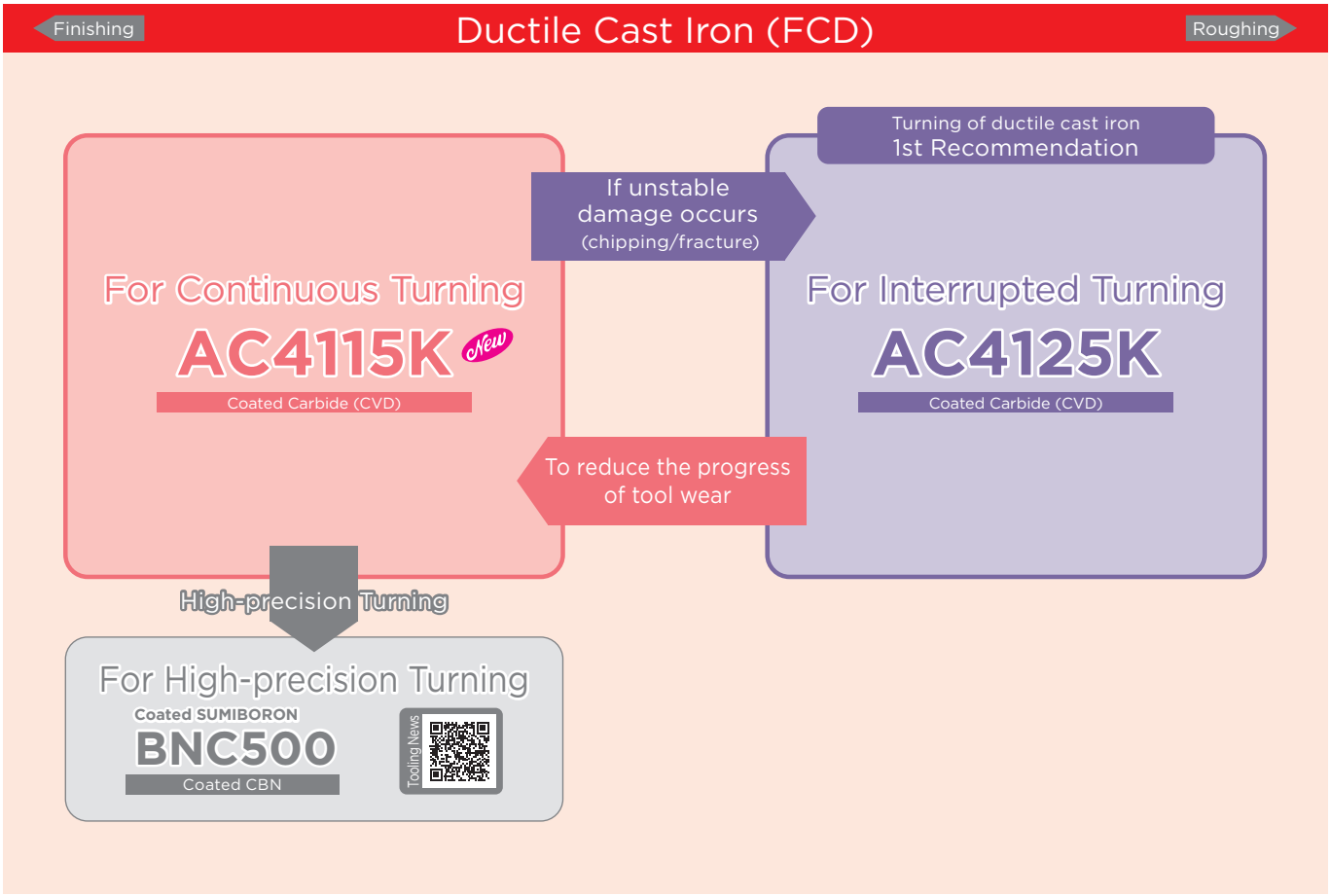
C-rich fine-grained TiCN Layer

Flank wear resistance: **1.5x conventional grades**

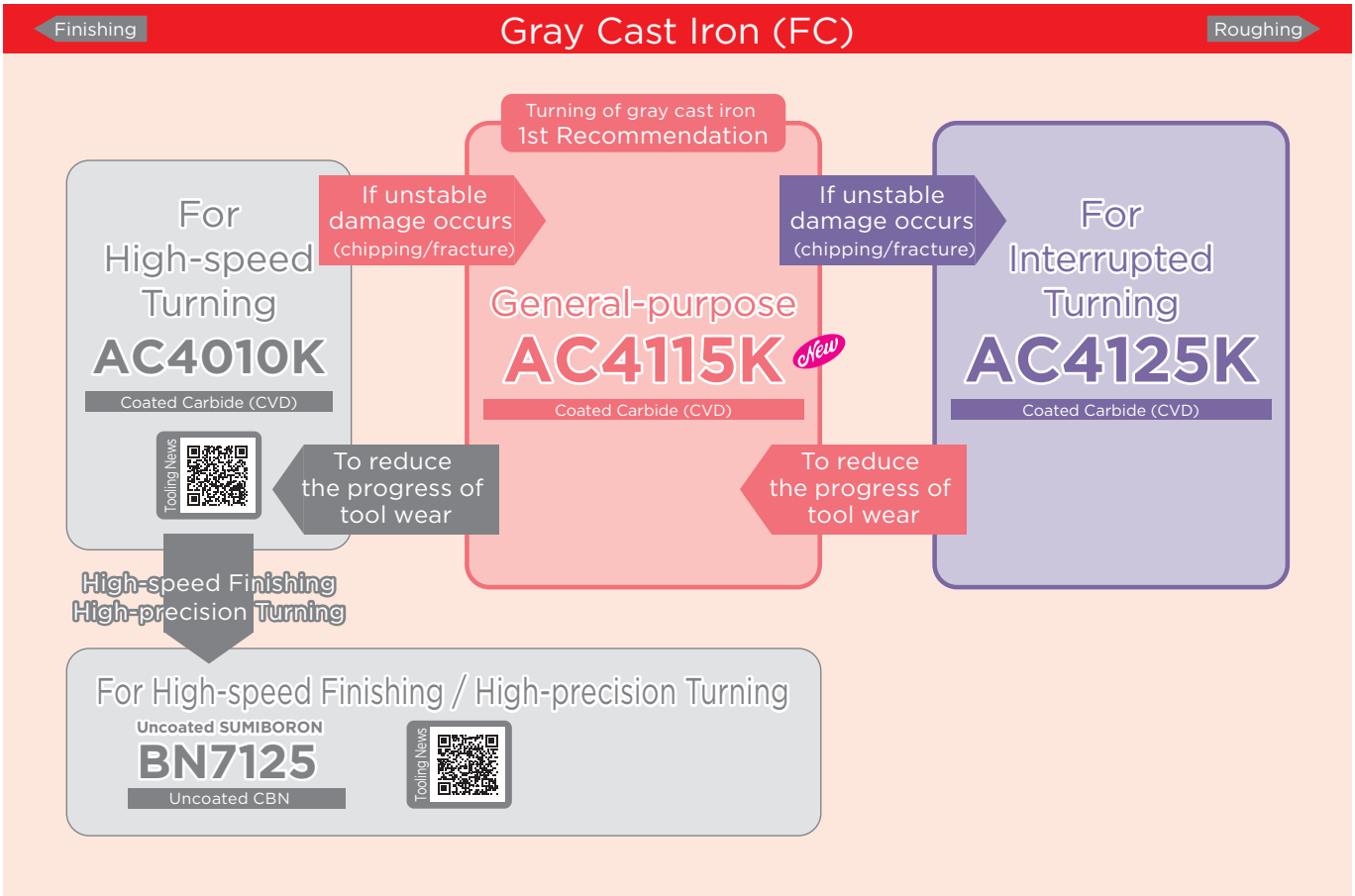
High-adhesion Technology

Smooth cutting edge treatment (**Rz0.15μm→0.07μm**) greatly improves peel-off resistance

■ Applications for Ductile Cast Iron (FCD) Turning (Example)



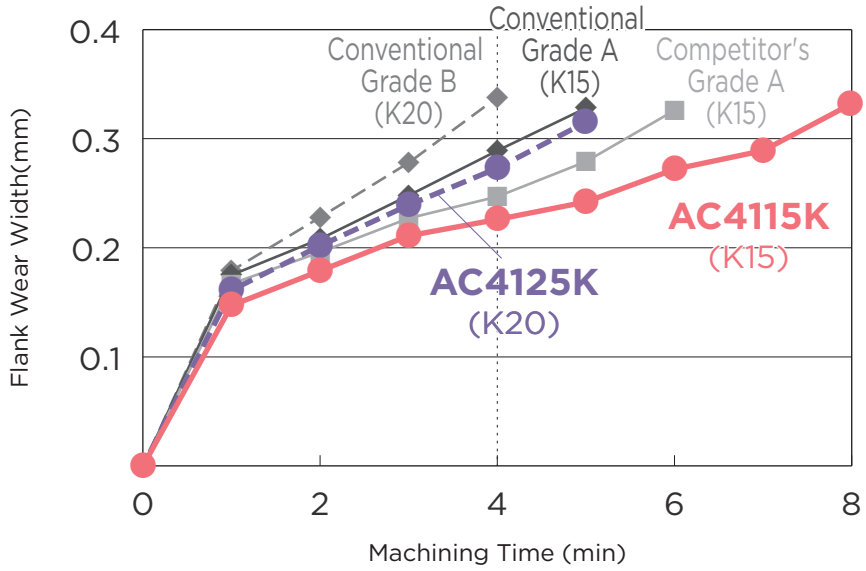
■ Applications for Gray Cast Iron (FC) Turning (Example)



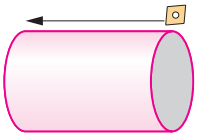
AC4115K/AC4125K

■ Wear Resistance of AC4115K/AC4125K (Continuous Turning of Ductile Cast Iron)

Significantly suppresses flank wear compared to conventional and competitors' equivalent grades



Work Material	: FCD500
	Continuous Turning
Insert	: CNMG120408
Cutting Conditions	: vc = 200m/min
	f = 0.3mm/rev
	ap = 1.5mm
	Wet

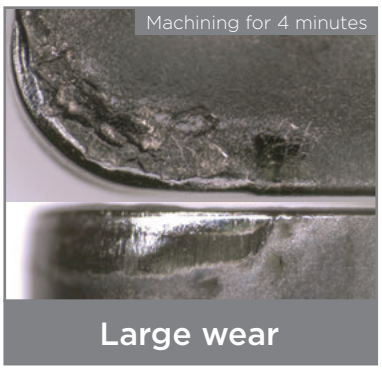


New **AC4115K+GZ**(K15)

AC4125K+GZ(K20)

Conventional Grade A (K15)

Competitor's Grade A (K15)

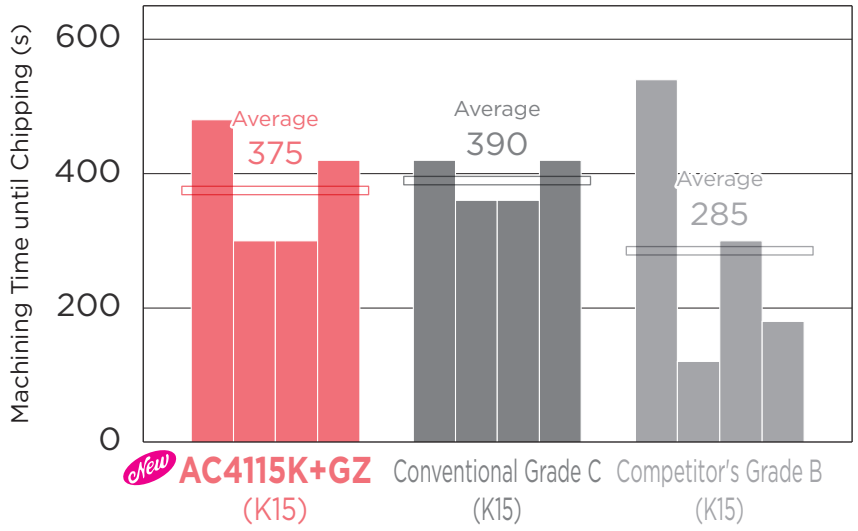


Conventional Grade B (K20)

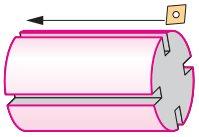
AC4115K/AC4125K

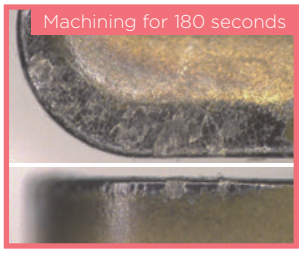
■ Chipping Resistance of AC4115K (Interrupted Turning of Ductile Cast Iron)

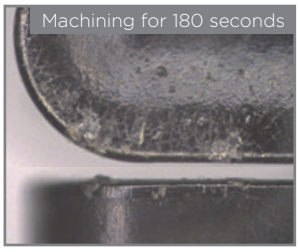
Maintains toughness equivalent to conventional grades

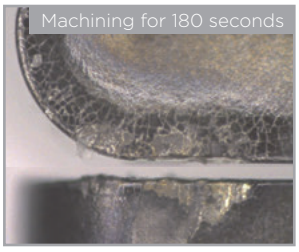


Work Material : FCD700
Interrupted Turning
Insert : CNMG120408
Cutting Conditions : vc = 200m/min
f = 0.25mm/rev
ap = 1.5mm
Wet





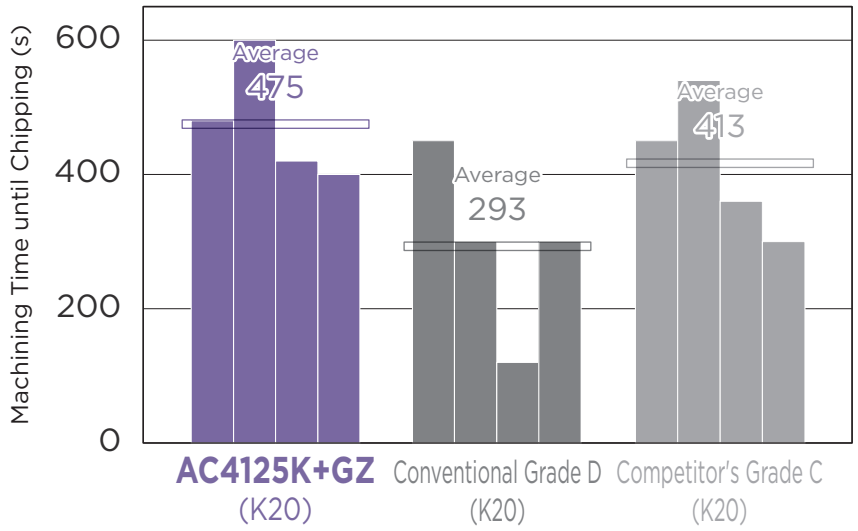




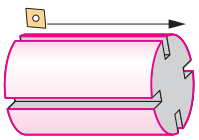
New **AC4115K+GZ**(K15) | Conventional Grade C(K15) | Competitor's Grade B(K15)

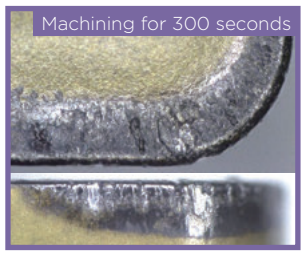
■ Chipping Resistance of AC4125K (Interrupted Turning of Ductile Cast Iron)

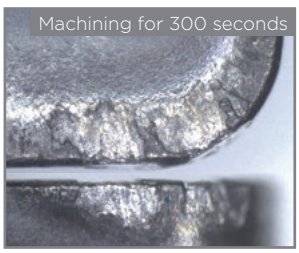
Suppresses cutting edge chipping for longer tool life

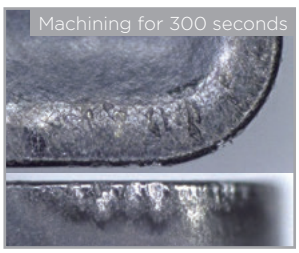


Work Material : FCD450
Interrupted Turning
Insert : CNMG120408
Cutting Conditions : vc = 450m/min
f = 0.3mm/rev
ap = 1.5mm
Wet





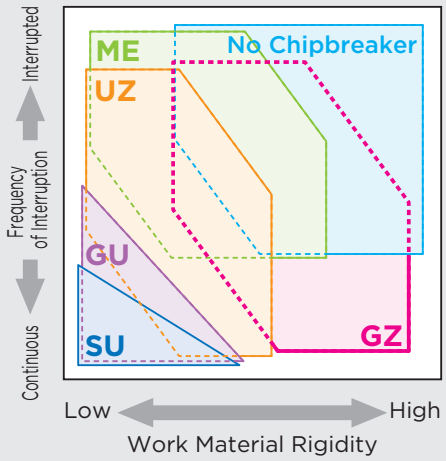


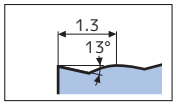


AC4125K+GZ(K20) | Conventional Grade D(K20) | Competitor's Grade C(K20)

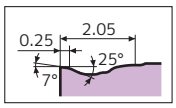
AC4115K/AC4125K

■ Chipbreaker Selection

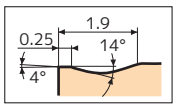


SU type 


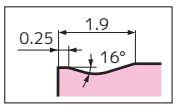
Sharp-edged finishing chipbreaker suited for high-speed, low-depth machining of low-rigidity workpieces

GU type 


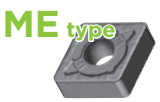
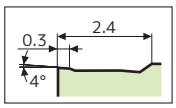
Low-resistance medium-cutting chipbreaker suitable for machining workpieces with low rigidity, such as small-diameter and long workpieces

UZ type 


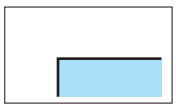
General-purpose finishing chipbreaker that has both sharpness and strong cutting edge

GZ type 


Our 1st recommended chipbreaker with excellent cutting edge strength and high versatility

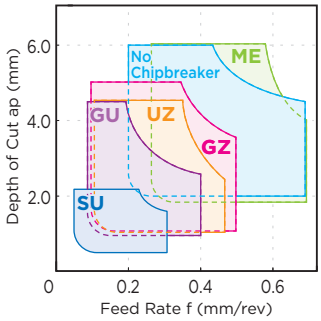
ME type 


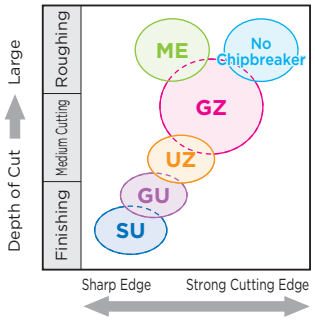
Roughing chipbreaker that demonstrates both sharpness and strength in high-feed turning

No Chipbreaker 

Excellent cutting edge strength, ideal for large depths of cut and interrupted turning

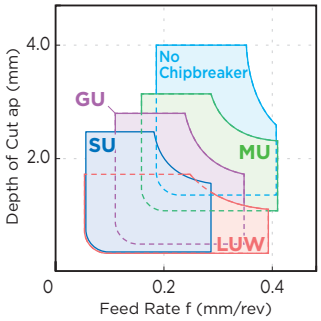
■ Chipbreaker Application Range

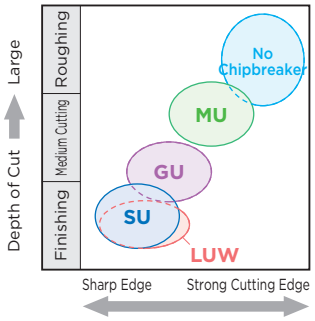
● Negative Inserts





● Positive Inserts





■ 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)
Gray Cast Iron (example: FC250)	Continuous to General-purpose	AC4010K	0.5 - **2.0** - 6.0	0.10 - **0.25** - 0.40	200 - **400** - 700
	Interrupted	AC4115K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.50	180 - **300** - 450
	Heavy Interrupted	AC4125K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.60	150 - **200** - 300
Ductile Cast Iron (example: FCD450)	General to Interrupted	AC4115K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.50	160 - **250** - 400
	Heavy Interrupted	AC4125K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.60	120 - **170** - 250
High-strength Ductile Cast Iron (example: FCD700)	Interrupted	AC4115K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.50	140 - **200** - 350
	Heavy Interrupted	AC4125K	0.5 - **2.0** - 6.0	0.10 - **0.30** - 0.60	80 - **150** - 220

MEMO

AC4115K/AC4125K

80° Diamond type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	**CNMG 120404N-SU** New	●		12.7	4.76	5.16	0.4
	120408N-SU New	●					0.8
	120412N-SU New	●					1.2
 GU	**CNMG 090304N-GU**	●	●	9.525	3.18	3.81	0.4
	090308N-GU	●	●				0.8
	CNMG 090412N-GU		●	9.525	4.76	3.81	1.2
	CNMG 120404N-GU	●	●	12.7	4.76	5.16	0.4
	120408N-GU	●	●				0.8
	120412N-GU	●	●				1.2
	120416N-GU		●				1.6
	CNMG 160608N-GU		●	15.875	6.35	6.35	0.8
	160612N-GU	●	●				1.2
	160616N-GU	●	●				1.6
 ME	**CNMG 120408N-ME**	●	●	12.7	4.76	5.16	0.8
	120412N-ME	●	●				1.2
	120416N-ME	●	●				1.6
	CNMG 160608N-ME	●	●	15.875	6.35	6.35	0.8
	160612N-ME	●	●				1.2
	160616N-ME	●	●				1.6
	CNMG 190612N-ME	●	●	19.05	6.35	7.94	1.2
	190616N-ME	●	●				1.6
	190624N-ME	●	●				2.4
	CNMG 250924N-ME	●	●	25.4	9.52	9.12	2.4
 UZ	**CNMG 120404N-UZ**	●	●	12.7	4.76	5.16	0.4
	120408N-UZ	●	●				0.8
	120412N-UZ	●	●				1.2
	120416N-UZ	●	●				1.6
	CNMG 160612N-UZ	●	●	15.875	6.35	6.35	1.2
	160616N-UZ	●	●				1.6
	CNMG 190612N-UZ	●	●	19.05	6.35	7.94	1.2
	190616N-UZ	●	●				1.6
 GZ	**CNMG 090408N-GZ**	●	●	9.525	4.76	3.81	0.8
	090412N-GZ		●				1.2
	CNMG 120404N-GZ	●	●	12.7	4.76	5.16	0.4
	120408N-GZ	●	●				0.8
	120412N-GZ	●	●				1.2
	120416N-GZ	●	●				1.6
	CNMG 160608N-GZ	●	●	15.875	6.35	6.35	0.8
	160612N-GZ	●	●				1.2
	160616N-GZ	●	●				1.6
	CNMG 190612N-GZ	●	●	19.05	6.35	7.94	1.2
	190616N-GZ	●	●				1.6
	**CNMA 120404**	●	●	12.7	4.76	5.16	0.4
	120408	●	●				0.8
	120412	●	●				1.2
	120416	●	●				1.6
	CNMA 160608		●	15.875	6.35	6.35	0.8
	160612	●	●				1.2
	160616	●	●				1.6
	CNMA 190612	●	●	19.05	6.35	7.94	1.2
	190616	●	●				1.6

55° Diamond type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	**DNMG 110404N-SU** New	●		9.525	4.76	3.81	0.4
	110408N-SU New	●					0.8
	110412N-SU New	●					1.2
	DNMG 150404N-SU New	●		12.7	4.76	5.16	0.4
	150408N-SU New	●					0.8
	150412N-SU New	●					1.2
	DNMG 150604N-SU New	●		12.7	6.35	5.16	0.4
	150608N-SU New	●					0.8
	150612N-SU New	●					1.2
 GU	**DNMG 110404N-GU**	●	●	9.525	4.76	3.81	0.4
	110408N-GU	●	●				0.8
	110412N-GU	●	●				1.2
	DNMG 150404N-GU	●	●	12.7	4.76	5.16	0.4
	150408N-GU	●	●				0.8
	150412N-GU	●	●				1.2
	150416N-GU	●	●				1.6
	DNMG 150604N-GU	●	●	12.7	6.35	5.16	0.4
	150608N-GU	●	●				0.8
	150612N-GU	●	●				1.2
	150616N-GU	●	●				1.6
 ME	**DNMG 150408N-ME**	●	●	12.7	4.76	5.16	0.8
	150412N-ME	●	●				1.2
	150416N-ME	●	●				1.6
	DNMG 150608N-ME	●	●	12.7	6.35	5.16	0.8
	150612N-ME	●	●				1.2
	150616N-ME	●	●				1.6
 UZ	**DNMG 150404N-UZ**	●	●	12.7	4.76	5.16	0.4
	150408N-UZ	●	●				0.8
	150412N-UZ	●	●				1.2
	DNMG 150608N-UZ	●	●	12.7	6.35	5.16	0.8
	150612N-UZ	●	●				1.2
 GZ	**DNMG 110408N-GZ**	●	●	9.525	4.76	3.81	0.8
	110412N-GZ		●				1.2
	DNMG 150404N-GZ	●	●	12.7	4.76	5.16	0.4
	150408N-GZ	●	●				0.8
	150412N-GZ	●	●				1.2
	DNMG 150608N-GZ	●	●	12.7	6.35	5.16	0.8
	150612N-GZ	●	●				1.2
	**DNMA 150404**	●	●	12.7	4.76	5.16	0.4
	150408	●	●				0.8
	150412	●	●				1.2
	DNMA 150608	●	●	12.7	6.35	5.16	0.8
	150612	●	●				1.2

● mark: Standard stocked item ● mark: Standard stocked item (new product/expanded item) Blank: Made-to-order item

AC4115K/AC4125K

Square type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	**SNMG 120408N-SU** NEW	●		12.7	4.76	5.16	0.8
 GU	**SNMG 090304N-GU**		●	9.525	3.18	3.81	0.4
	090308N-GU	●	●				0.8
	SNMG 120404N-GU	●	●	12.7	4.76	5.16	0.4
	120408N-GU	●	●				0.8
	120412N-GU	●	●				1.2
	120416N-GU		●				1.6
	SNMG 150608N-GU		●	15.875	6.35	6.35	0.8
	150612N-GU	●	●				1.2
	150616N-GU		●				1.6
 ME	**SNMG 120408N-ME**	●	●	12.7	4.76	5.16	0.8
	120412N-ME	●	●				1.2
	120416N-ME		●				1.6
	SNMG 150608N-ME		●	15.875	6.35	6.35	0.8
	150612N-ME		●				1.2
	150616N-ME	●	●				1.6
	SNMG 190612N-ME	●	●	19.05	6.35	7.94	1.2
	190616N-ME		●				1.6
	190624N-ME		●				2.4
	SNMG 250924N-ME	●	●	25.4	9.52	9.12	2.4
 UZ	**SNMG 120408N-UZ**	●	●	12.7	4.76	5.16	0.8
	120412N-UZ	●	●				1.2
	120416N-UZ	●	●				1.6
	SNMG 190612N-UZ	●	●	19.05	6.35	7.94	1.2
	190616N-UZ	●	●				1.6
 GZ	**SNMG 120408N-GZ**	●	●	12.7	4.76	5.16	0.8
	120412N-GZ	●	●				1.2
	120416N-GZ	●	●				1.6
	SNMG 150612N-GZ	●	●	15.875	6.35	6.35	1.2
	150616N-GZ	●	●				1.6
	SNMG 190612N-GZ	●	●	19.05	6.35	7.94	1.2
	190616N-GZ	●	●				1.6
	**SNMA 120404**	●	●	12.7	4.76	5.16	0.4
	120408	●	●				0.8
	120412	●	●				1.2
	120416	●	●				1.6
	120420	●	●				2.0
	SNMA 150612	●	●	15.875	6.35	6.35	1.2
	150616	●	●				1.6
	SNMA 190612	●	●	19.05	6.35	7.94	1.2
	190616	●	●				1.6

Triangular type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	**TNMG 160404N-SU** NEW	●		9.525	4.76	3.81	0.4
	160408N-SU NEW	●					0.8
	160412N-SU NEW	●					1.2
 GU	**TNMG 160404N-GU**	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●				0.8
	160412N-GU	●	●				1.2
	160416N-GU		●				1.6
	TNMG 220404N-GU	●	●	12.7	4.76	5.16	0.4
	220408N-GU	●	●				0.8
	220412N-GU		●				1.2
 ME	**TNMG 160408N-ME**	●	●	9.525	4.76	3.81	0.8
	160412N-ME	●	●				1.2
	TNMG 220408N-ME	●	●	12.7	4.76	5.16	0.8
	220412N-ME		●				1.2
	220416N-ME		●				1.6
 UZ	**TNMG 160404N-UZ**	●	●	9.525	4.76	3.81	0.4
	160408N-UZ	●	●				0.8
	160412N-UZ	●	●				1.2
	160416N-UZ	●	●				1.6
	160420N-UZ	●	●				2.0
	TNMG 220408N-UZ	●	●	12.7	4.76	5.16	0.8
	220412N-UZ	●	●				1.2
	220416N-UZ	●	●				1.6
 GZ	**TNMG 160404N-GZ**	●	●	9.525	4.76	3.81	0.4
	160408N-GZ	●	●				0.8
	160412N-GZ	●	●				1.2
	TNMG 220408N-GZ	●	●	12.7	4.76	5.16	0.8
	220412N-GZ	●	●				1.2
	220416N-GZ		●				1.6
	**TNMA 160404**	●	●	9.525	4.76	3.81	0.4
	160408	●	●				0.8
	160412	●	●				1.2
	160416	●	●				1.6
	160420		●				2.0
	TNMA 220408	●	●	12.7	4.76	5.16	0.8
	220412	●	●				1.2
	220416	●	●				1.6

35° Diamond type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	**VNMG 160404N-SU** NEW	●		9.525	4.76	3.81	0.4
	160408N-SU NEW	●					0.8
 GU	**VNMG 160404N-GU**	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●				0.8
	160412N-GU	●	●				1.2
 UZ	**VNMG 160404N-UZ**	●	●	9.525	4.76	3.81	0.4
	160408N-UZ	●	●				0.8
	160412N-UZ	●	●				1.2
 GZ	**VNMG 160404N-GZ**	●	●	9.525	4.76	3.81	0.4
	160408N-GZ	●	●				0.8
	160412N-GZ	●	●				1.2
	**VNMA 160404**	●	●	9.525	4.76	3.81	0.4
	160408	●	●				0.8
	160412	●	●				1.2

● mark: Standard stocked item ● mark: Standard stocked item (new product/expanded item) Blank: Made-to-order item

AC4115K/AC4125K

Trigon type Negative Inserts

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	WNMG 060404N-SU New	●		9.525	4.76	3.81	0.4
	060408N-SU New	●					0.8
	WNMG 080404N-SU New	●		12.7	4.76	5.16	0.4
	080408N-SU New	●					0.8
	080412N-SU New	●					1.2
 GU	WNMG 060404N-GU	●	●	9.525	4.76	3.81	0.4
	060408N-GU	●	●				0.8
	060412N-GU	●	●				1.2
	WNMG 080404N-GU	●	●	12.7	4.76	5.16	0.4
	080408N-GU	●	●				0.8
	080412N-GU	●	●				1.2
 ME	WNMG 060408N-ME	●	●	9.525	4.76	3.81	0.8
	060412N-ME	●	●				1.2
	WNMG 080408N-ME	●	●	12.7	4.76	5.16	0.8
	080412N-ME	●	●				1.2
	080416N-ME	●	●				1.6
 UZ	WNMG 080404N-UZ	●	●	12.7	4.76	5.16	0.4
	080408N-UZ	●	●				0.8
	080412N-UZ	●	●				1.2
 GZ	WNMG 060408N-GZ	●	●	9.525	4.76	3.81	0.8
	060412N-GZ	●	●				1.2
	WNMG 080404N-GZ	●	●	12.7	4.76	5.16	0.4
	080408N-GZ	●	●				0.8
	080412N-GZ	●	●				1.2
	WNMA 080408	●	●	12.7	4.76	5.16	0.8
	080412	●	●				1.2
	080416	●	●				1.6

Square type Negative Inserts (Without Hole)

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	SNMN 120408	●	●	12.7	4.76	–	0.8
	120412	●	●				1.2
	120416	●	●				1.6

Triangular type Negative Inserts (Without Hole)

Shape	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	TNMN 160408	●	●	9.525	4.76	–	0.8
	160412	●	●				1.2
	160416	●	●				1.6

80° Diamond type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 Wiper LUW	7°	CCMT 060202N-LUW New	●		6.35	2.38	2.8	0.2
		060204N-LUW New	●					0.4
		060208N-LUW New	●					0.8
	7°	CCMT 09T302N-LUW New	●		9.525	3.97	4.4	0.2
		09T304N-LUW New	●					0.4
		09T308N-LUW New	●					0.8
 SU	7°	CCMT 09T304N-SU New	●		9.525	3.97	4.4	0.4
		09T308N-SU New	●					0.8
 GU	7°	CCMT 060204N-GU	●		6.35	2.38	2.8	0.4
		060208N-GU	●					0.8
	7°	CCMT 09T304N-GU	●		9.525	3.97	4.4	0.4
		09T308N-GU	●					0.8
 MU	7°	CCMT 09T304N-MU	●	●	9.525	3.97	4.4	0.4
		09T308N-MU	●	●				0.8
	7°	CCMW 060204	●	●	6.35	2.38	2.8	0.4
	7°	CCMW 09T304	●	●	9.525	3.97	4.4	0.4
		09T308	●	●				0.8
 MU	11°	CPMT 080204N-MU	●	●	7.94	2.38	3.4	0.4
		080208N-MU	●	●				0.8
	11°	CPMT 090304N-MU	●	●	9.525	3.18	4.4	0.4
		090308N-MU	●	●				0.8
	11°	CPMW 080204		●	7.94	2.38	3.4	0.4
		080208		●				0.8
	11°	CPMW 090304		●	9.525	3.18	4.4	0.4
		090308		●				0.8

55° Diamond type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 Wiper LUW	7°	DCMX 070202N-LUW New	●		6.35	2.38	2.8	0.2
		070204N-LUW New	●					0.4
		070208N-LUW New	●					0.8
 Wiper LUW	7°	DCMX 11T302N-LUW New	●		9.525	3.97	4.4	0.2
		11T304N-LUW New	●					0.4
		11T308N-LUW New	●					0.8
 SU	7°	DCMT 070204N-SU New	●		6.35	2.38	2.8	0.4
		070208N-SU New	●					0.8
	7°	DCMT 11T304N-SU New	●		9.525	3.97	4.4	0.4
		11T308N-SU New	●					0.8
 GU	7°	DCMT 070204N-GU	●		6.35	2.38	2.8	0.4
		070208N-GU	●					0.8
	7°	DCMT 11T304N-GU	●		9.525	3.97	4.4	0.4
		11T308N-GU	●					0.8
 MU	7°	DCMT 11T304N-MU	●	●	9.525	3.97	4.4	0.4
		11T308N-MU	●	●				0.8
	7°	DCMW 070204	●	●	6.35	2.38	2.8	0.4
		070208	●	●				0.8
	7°	DCMW 11T304	●	●	9.525	3.97	4.4	0.4
		11T308	●	●				0.8

Round type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 RP	7°	RCMX 1003M0N-RP	●	●	10.0	3.18	3.6	–
	7°	RCMX 1204M0N-RP	●	●	12.0	4.76	4.2	–
	7°	RCMX 1606M0N-RP	●	●	16.0	6.35	5.2	–

● mark: Standard stocked item ● mark: Standard stocked item (new product/expanded item) Blank: Made-to-order item Wiper: Wiper Insert

AC4115K/AC4125K

Square type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 MU	7°	**SCMT 09T308N-MU**	●	●	9.525	3.97	4.4	0.8
	7°	**SCMT 120408N-MU**	●	●	12.7	4.76	5.5	0.8
	7°	**SCMW 09T308**	●	●	9.525	3.97	4.4	0.8
	7°	**SCMW 120408**	●	●	12.7	4.76	5.5	0.8
		120412	●	●				1.2

Triangular type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 LB	7°	**TCMT 110204N-LB**	●		6.35	2.38	2.8	0.4
		110208N-LB	●					0.8
 SU	7°	**TCMT 110204N-SU** New	●		6.35	2.38	2.8	0.4
		110208N-SU New	●					0.8
	7°	**TCMW 110204**	●	●	6.35	2.38	2.8	0.4
		110208	●	●				0.8
	7°	**TCMW 16T304**	●	●	9.525	3.97	4.3	0.4
		16T308	●	●				0.8
		16T312	●	●				1.2
 LU	11°	**TPMT 080204N-LU**	●		4.76	2.38	2.4	0.4
 LB	11°	**TPMT 090204N-LB**	●		5.56	2.38	2.8	0.4
	11°	**TPMT 160304N-LB**	●		9.525	3.18	4.4	0.4
		160308N-LB	●					0.8
 SU	11°	**TPMT 080204N-SU** New	●		4.76	2.38	2.4	0.4
	11°	**TPMT 110304N-SU** New	●		6.35	3.18	3.4	0.4
	11°	**TPMT 160404N-SU** New	●		9.525	4.76	4.4	0.4
		160408N-SU New	●					0.8
 MU	11°	**TPMT 110304N-MU**	●	●	6.35	3.18	3.4	0.4
		110308N-MU	●	●				0.8
 MU	11°	**TPMT 160404N-MU**	●	●	9.525	4.76	4.4	0.4
		160408N-MU	●	●				0.8
	11°	**TPGW 080204**	●		4.76	2.38	2.4	0.4
		080208	●					0.8
	11°	**TPGW 090204**	●		5.56	2.38	2.8	0.4
		090208	●					0.8
	11°	**TPGW 110304**	●		6.35	3.18	3.4	0.4
		110308	●					0.8
	11°	**TPGW 160404**	●		9.525	4.76	4.4	0.4
		160408	●					0.8

35° Diamond type Positive Inserts

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	5°	**VBMT 160404N-SU** New	●		9.525	4.76	4.4	0.4
		160408N-SU New	●					0.8
 GU	5°	**VBMT 160404N-GU**	●		9.525	4.76	4.4	0.4
		160408N-GU	●					0.8
	5°	**VBMW 160404**	●	●	9.525	4.76	4.4	0.4
		160408	●	●				0.8

Square type Positive Inserts (Without Hole)

Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	**SPMN 090304**	●	●	9.525	3.18	–	0.4
		090308	●	●				0.8
	11°	**SPMN 120304**	●	●	12.7	3.18	–	0.4
		120308	●	●				0.8
		120312	●	●				1.2

Triangular type Positive Inserts (Without Hole)

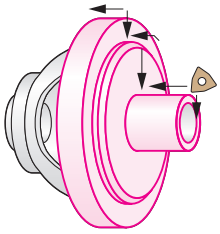
Shape	Relief Angle	Cat. No.	Stock AC4115K	Stock AC4125K	Dimensions (mm) Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	11°	**TPMN 110304**	●	●	6.35	3.18	–	0.4
		110308	●	●				0.8
	11°	**TPMN 160304**	●	●	9.525	3.18	–	0.4
		160308	●	●				0.8
		160312	●	●				1.2

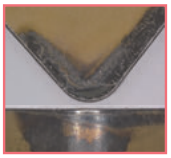
● mark: Standard stocked item ● mark: Standard stocked item (new product/expanded item) Blank: Made-to-order item

■ Application Examples of AC4115K

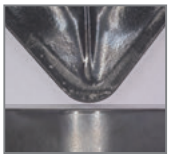
FCD500 Differential Case External Turning + Facing AC4115K K

AC4115K achieves 1.8x longer tool life than competitor's grade due to its excellent wear resistance





AC4115K No Chipbreaker (180 pcs/C)

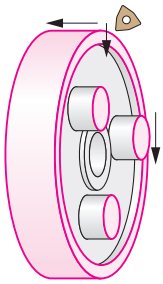


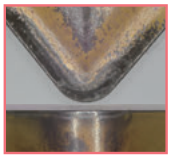
Competitor's Grade A (100 pcs/C)

Tool Used : WNMA080408(AC4115K) Continuous Turning
Cutting Conditions: vc = 200-300m/min, f = 0.20-0.25mm/rev, ap = 1.5-2.5mm, Wet

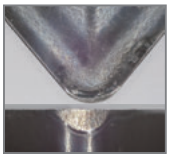
FCD600 Pulley External Turning + Facing AC4115K K

Achieves 1.4x longer tool life than competitor's grade, even in processes with interrupted turning





AC4115K+GZ (140 pcs/C)

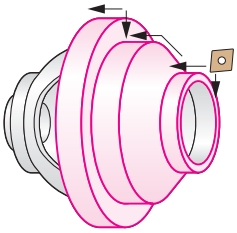


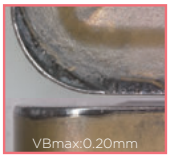
Competitor's Grade B (100 pcs/C)

Tool Used : WNMG080408N-GZ(AC4115K) Continuous + Light Interrupted Turning
Cutting Conditions: vc = 200-300m/min, f = 0.20-0.25mm/rev, ap = 1.5-2.5mm, Wet

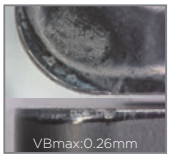
FCD600 Differential Case External Turning + Facing AC4115K K

Suppresses cutting edge chipping as compared to conventional grades





AC4115K+UZ (60 pcs/C)

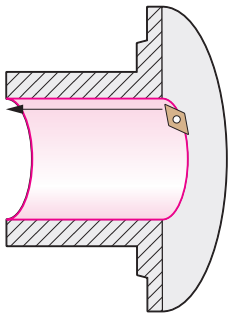


Conventional Grade (60 pcs/C)

Tool Used : CNMG120416N-UZ(AC4115K) Continuous Turning
Cutting Conditions: vc = 230m/min, f = 0.4-0.6mm/rev, ap = 1.0-3.0mm, Dry

FCD500 Wheel Hub Internal Boring AC4115K K

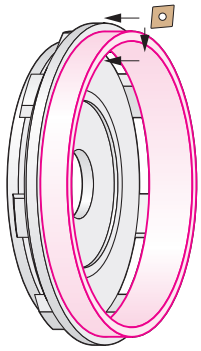
Achieves 2x longer tool life than competitor's grade, even for internal boring



Tool Used : DNMG150608N-GZ(AC4115K) Continuous Turning
Cutting Conditions: vc = 230m/min, f = 0.18mm/rev, ap = 0.5mm, Wet

FCD400 Bearing Base External Turning + Internal Boring + Facing AC4115K K

AC4115K achieves 3x longer tool life than competitor's grade

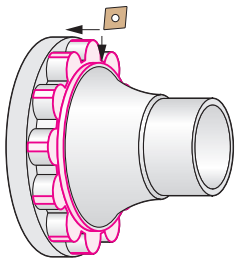


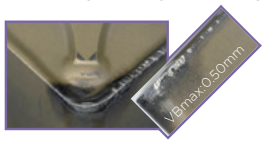
Tool Used : CNMG120408N-ME(AC4115K) Continuous Turning
Cutting Conditions: vc = 285m/min, f = 0.15mm/rev, ap = 1.0mm, Wet

■ Application Examples of AC4125K

FCD600 Differential Case External Turning + Facing AC4125K K

AC4125K demonstrates excellent chipping resistance and 1.5x tool life in heavy interrupted turning of high-strength ductile cast iron





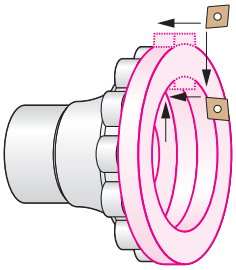
AC4125K+GU (17 pcs/C)

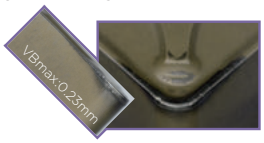
Competitor's Grade E (11 pcs/C)

Tool Used : CNMG160412N-GU(AC4125K) Interrupted Turning
Cutting Conditions: vc = 160m/min, f = 0.20-0.45mm/rev,
ap = 2.5-3.0mm, Wet

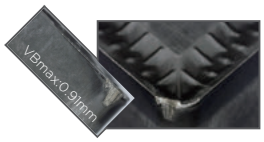
FCD600 Differential Case External Turning + Internal Boring + Facing AC4125K K

AC4125K demonstrates excellent chipping resistance in heavy interrupted turning of high-strength ductile cast iron





AC4125K+GU (11 pcs/C)

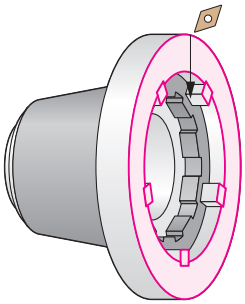


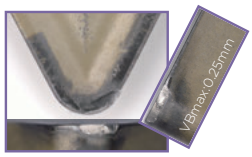
Competitor's Grade F (11 pcs/C)

Tool Used : CNMG160412N-GU(AC4125K) Interrupted Turning
Cutting Conditions: vc = 130-170m/min, f = 0.20-0.45mm/rev,
ap = 2.5-3.0mm, Wet

FCD500 Wheel Hub Facing AC4125K K

AC4125K achieves 1.3x longer tool life than competitor's grade





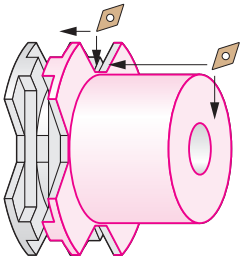
AC4125K+GZ (10 pcs/C)

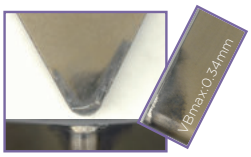
Competitor's Grade G (8 pcs/C)

Tool Used : DNMG150608N-GZ(AC4125K) Interrupted Turning
Cutting Conditions: vc = 200-300m/min, f = 0.15mm/rev,
ap = 0.5mm, Wet

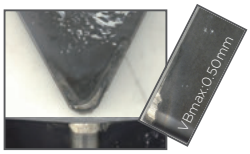
FCD450 Load Sheave Rough External Turning + Facing AC4125K K

AC4125K achieves 1.2x longer tool life than competitor's grade





AC4125K (240 pcs/C)

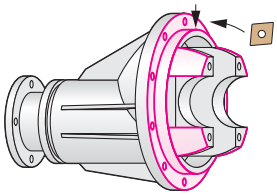


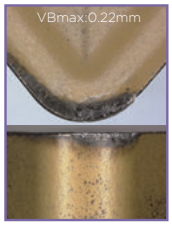
Competitor's Grade H (200 pcs/C)

Tool Used : DNMA150408(AC4125K) Interrupted Turning
Cutting Conditions: vc = 200m/min, f = 0.15mm/rev,
ap = 1.0mm, Wet

FCD450 Carrier Case External Turning + Facing AC4125K K

AC4125K achieves 2x longer tool life than conventional grades, showing only minor damage even after machining 50 pieces





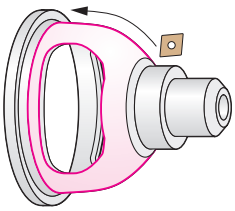
AC4125K+GZ (50 units/C)

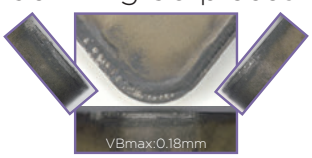
Conventional Grade (50 units/C)

Tool Used : CNMG120412N-GZ(AC4125K) Interrupted Turning
Cutting Conditions: vc = 200m/min, f = 0.3mm/rev,
ap = 2.5mm, Wet

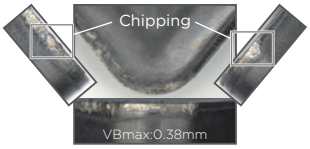
FCD450 Differential Case External Interrupted Turning AC4125K K

AC4125K achieves 1.3x longer tool life than conventional grades, showing only minor damage even after machining 30 pieces





AC4125K+ME (30 units/C)



Conventional Grade I (30 units/C)

Tool Used : CNMG120412N-ME(AC4125K) Interrupted Turning
Cutting Conditions: vc = 150m/min, f = 0.2-0.3mm/rev,
ap = 2.0mm, Wet

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< SAFETY NOTES >

- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.
- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.
- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

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(2026.4)I TP/AK