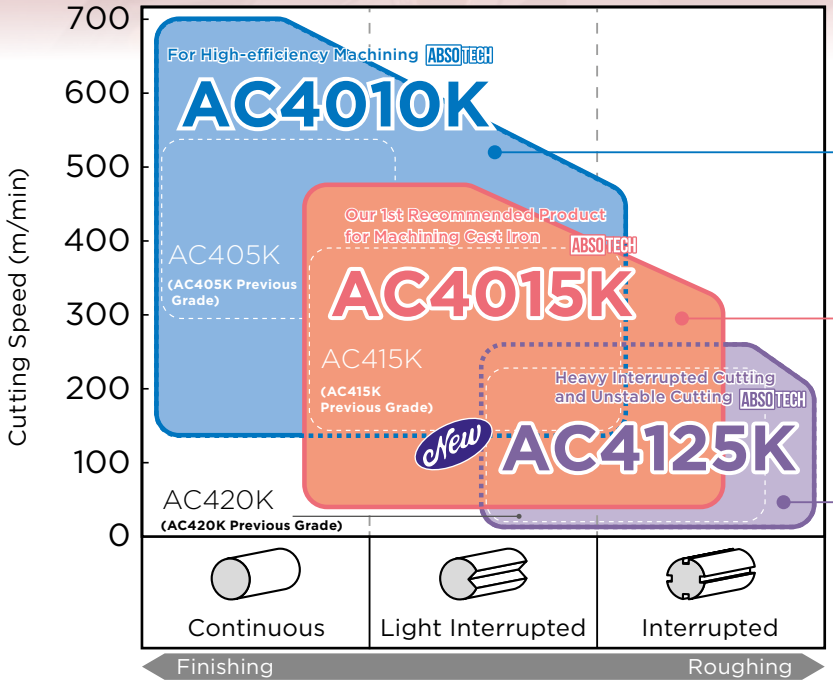
Coated Grades for Cast Iron

AC4010K/AC4015K/AC4125K

VIDEO OF CUTTING

■ Application Range

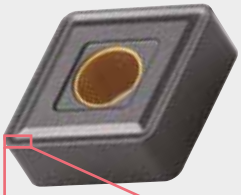


AC4010K
Our 1st recommended grade for machining gray cast iron.
Ultra-thick film coating enables ultra-high-speed machining at vc=700m/min.

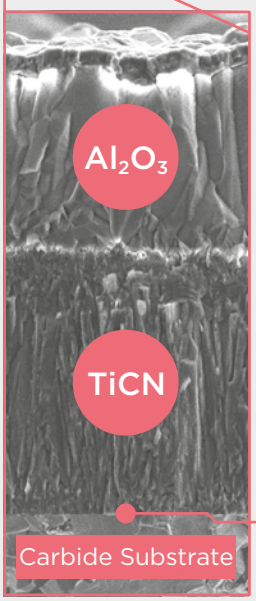
AC4015K
Our 1st recommended grade for machining of ductile cast iron.
High-adhesion and high-strength coating enables stable and long tool life.

AC4125K New
Our 1st recommended grade for interrupted machining of cast iron.Especially effective for stable long life in roughing of parts like differential cases and carriers.

■ Features AC4010K / AC4015K



Technologies for high-adhesion, crystal orientation control and residual stress control realise stable tool life for various types of cast iron, from grey cast iron (GJL) to high-strength ductile cast iron (GJS).



Special Surface Treatment

Compressive stress more than twice as high as conventional stress
Chipping resistance: Twice as much as conventional types

Crystal Orientation Control Alumina Layer

Crater wear resistance in high-speed machining:
Twice as much as conventional types


Image of Crystal Orientation

C-rich Ultra-fine TiCN Layer

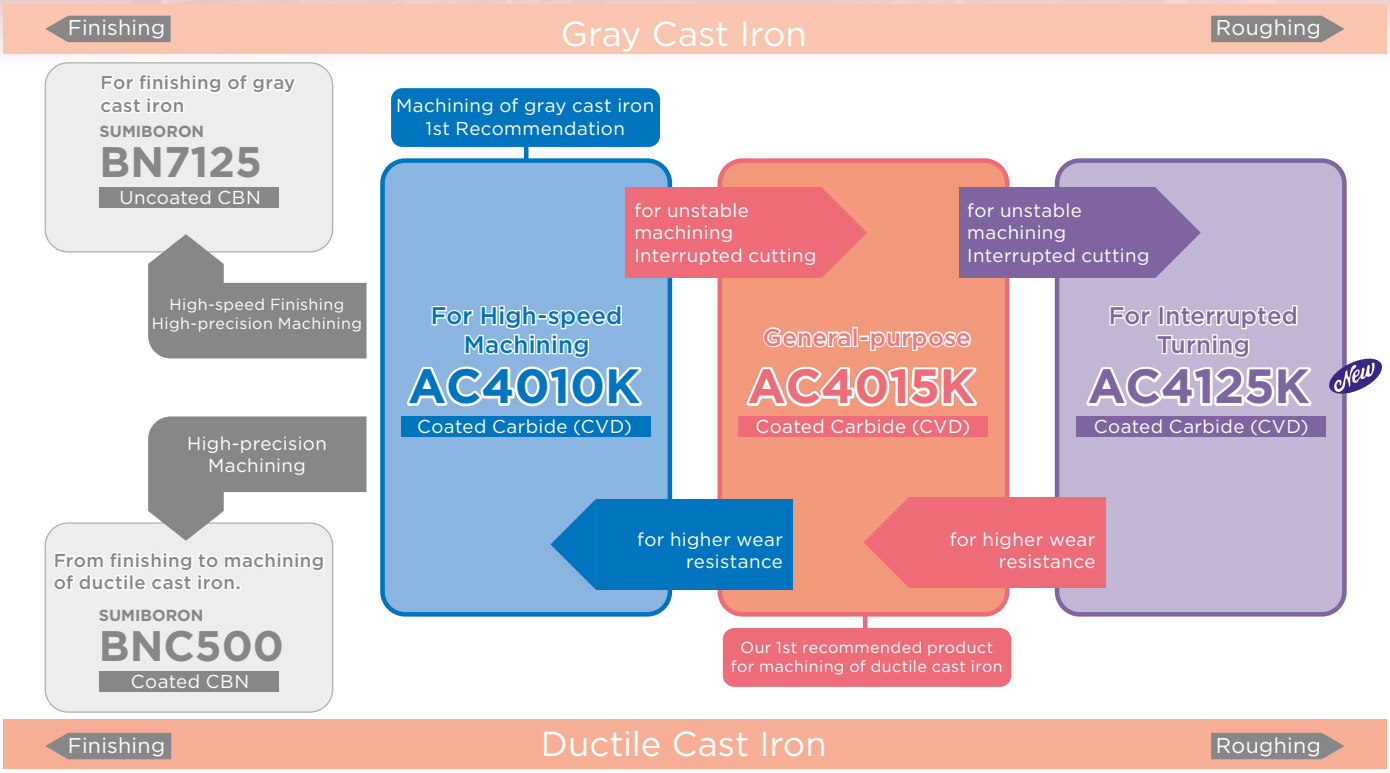
Flank wear resistance: Twice as much as conventional types

High Adhesion Technology

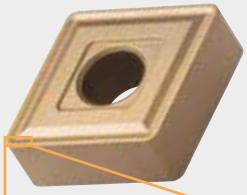
Smooth layer adhesion treatment (Rz0.15μm→0.07μm)
greatly improves peel-off resistance

AC4010K/AC4015K/AC4125K

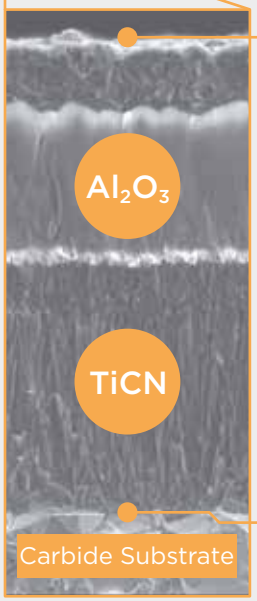
■ Applications of AC4000K Series (Example)



■ Features of AC4125K



Excellent chipping resistance is demonstrated by the evolution of high adhesion technology, fine crystal orientation control technology and residual stress control technology, and very stable machining is realized in heavy interrupted machining and unstable machining of cast iron. In addition, it adopts a gold color that makes used corners easily identifiable.



Special Surface Treatment

Significantly improves the compressive stress while maintaining the gold color Chipping resistance: Twice as much as conventional types

Crystal Orientation Control Ultra-fine Alumina Layer

Fine grain structure greatly improves the coating strength Chipping resistance: Twice as much as conventional types

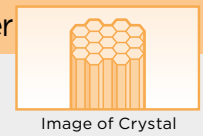


Image of Crystal Orientation

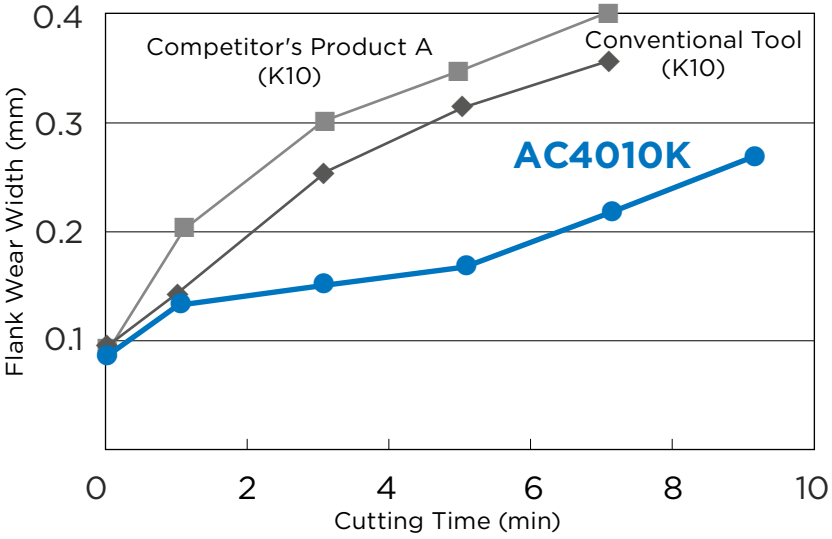
C-rich Ultra-fine TiCN Layer

Flank wear resistance: 1.5x as much as conventional types

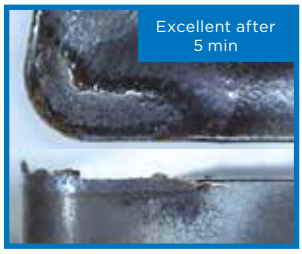
High Adhesion Technology

Smooth layer adhesion treatment (Rz0.15μm→0.07μm) greatly improves peel-off resistance

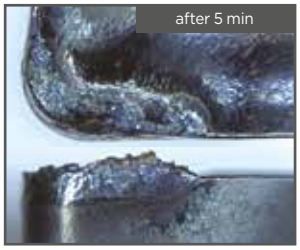
AC4010K/AC4015K/AC4125K



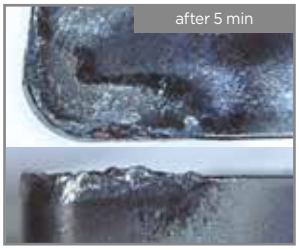
Work Material:	GG25 Continuous
Insert:	CNMG120408
Cutting Conditions:	vc=600m/min f=0.4mm/rev ap=2.0mm Dry



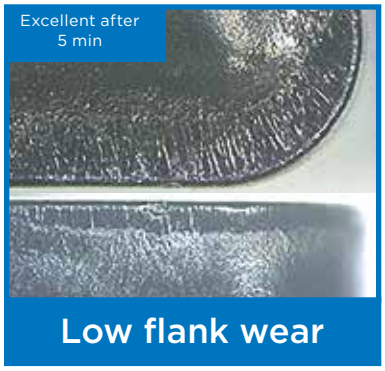
AC4010K+GZ



Conventional Tool (K10)



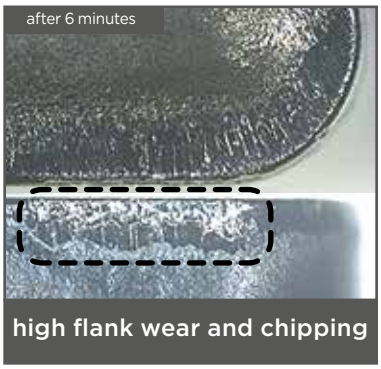
Comp's A (K10)



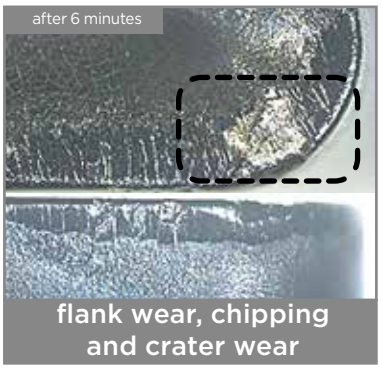
AC4010K+GZ

AC4015K+GZ

Work Material:	GG25 Interrupted
Insert:	CNMG120408
Cutting Conditions:	vc=400m/min f=0.3mm/rev ap=2.0mm Wet

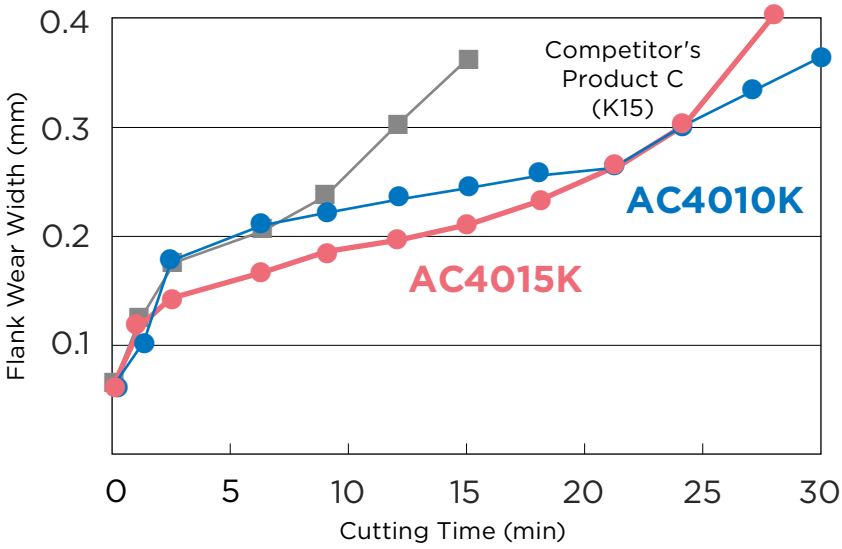


Conventional Tool (K10)

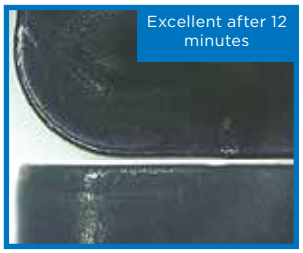


Comp's B (K10)

■ Wear Resistance of AC4010K/AC4015K (Continuous Ductile Cast Iron Cutting)

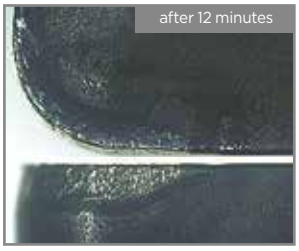


Work Material:	GGG70 Continuous
Insert:	CNMG120408
Cutting Conditions:	vc=140m/min f=0.3mm/rev ap=1.5mm Wet



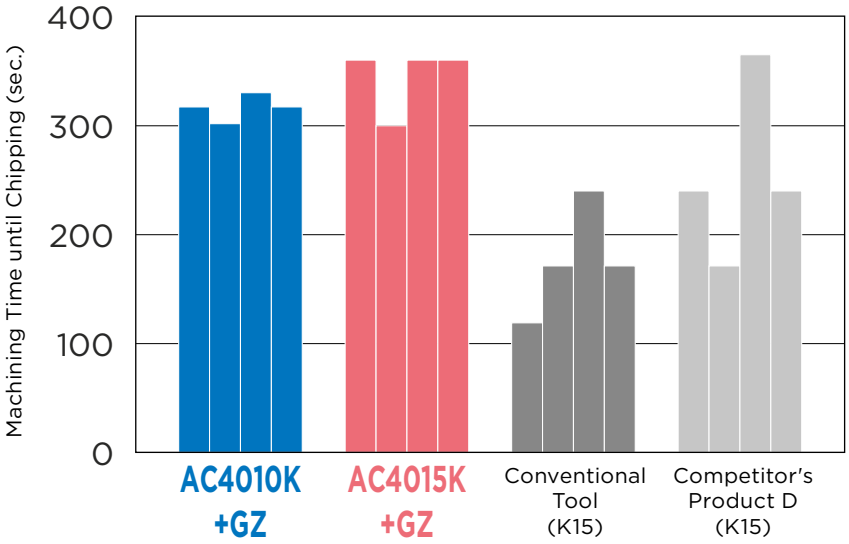
AC4010K+GZ

AC4015K+GZ

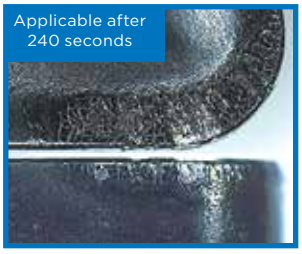


Comp´s C (K15)

■ Chipping Resistance of AC4010K/AC4015K (Interrupted Ductile Cast Iron Cutting)

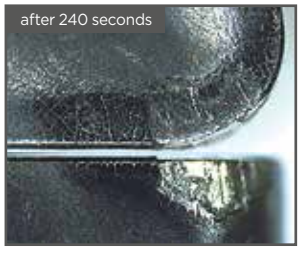


Work Material:	GGG-40.3 Interrupted
Insert:	CNMG12040
Cutting Conditions:	vc=450m/min f=0.3mm/rev ap=1.5mm Wet

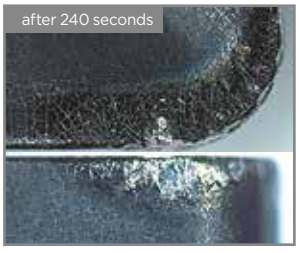


AC4010K

AC4015K

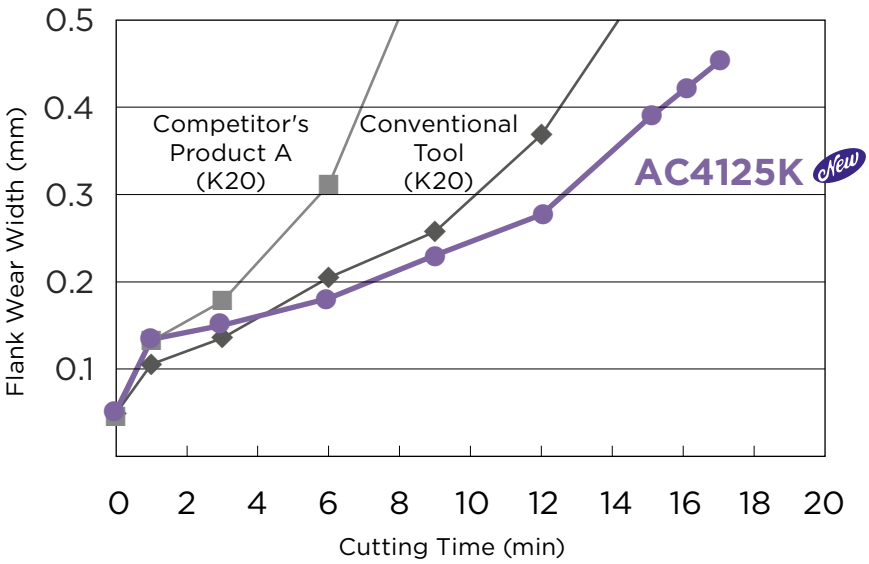


Conventional Tool (K15)

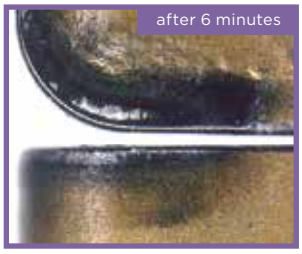


Comp's D (K15)

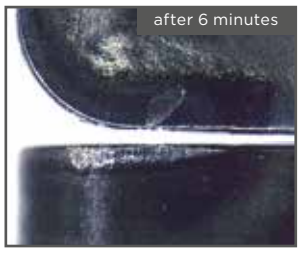
■ Wear Resistance of AC4125K (Continuous Ductile Cast Iron Cutting)



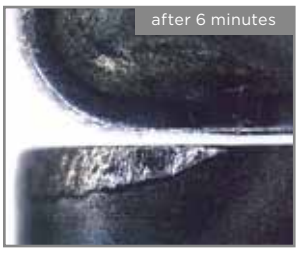
Work Material:	GGG70 Continuous
Insert:	CNMG120408
Cutting Conditions:	vc=140m/min f=0.3mm/rev ap=1.5mm Wet



New AC4125K+GZ

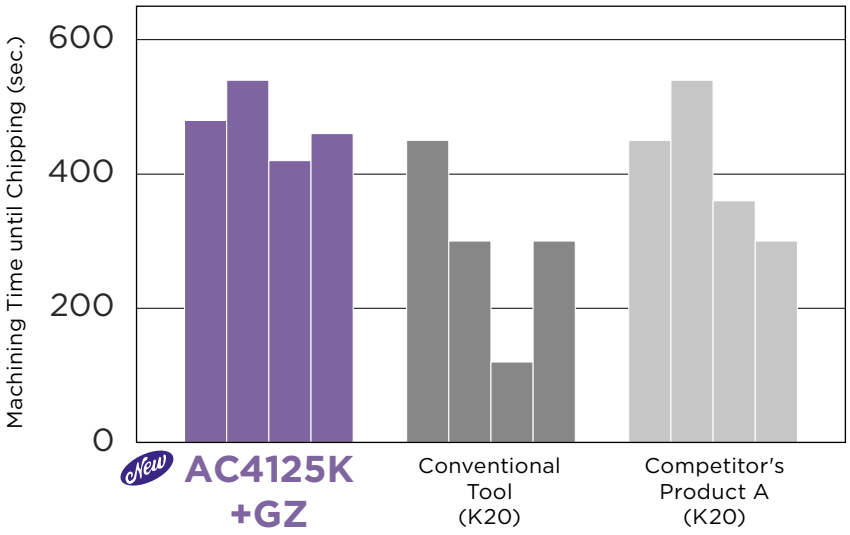


Conventional Tool (K20)

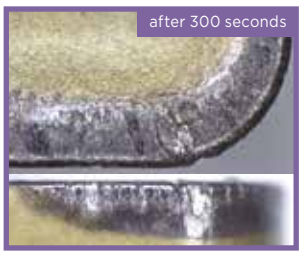


Comp´s A (K20)

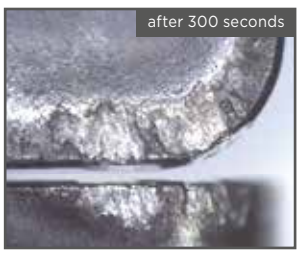
■ Chipping Resistance of AC4125K (Interrupted Ductile Cast Iron Cutting)



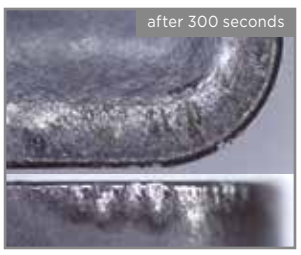
Work Material:	GGG-40.3 Interrupted
Insert:	CNMG120408
Cutting Conditions:	vc=450m/min f=0.3mm/rev ap=1.5mm Wet



New AC4125K+GZ



Conventional Tool (K20)



Comp´s A (K20)