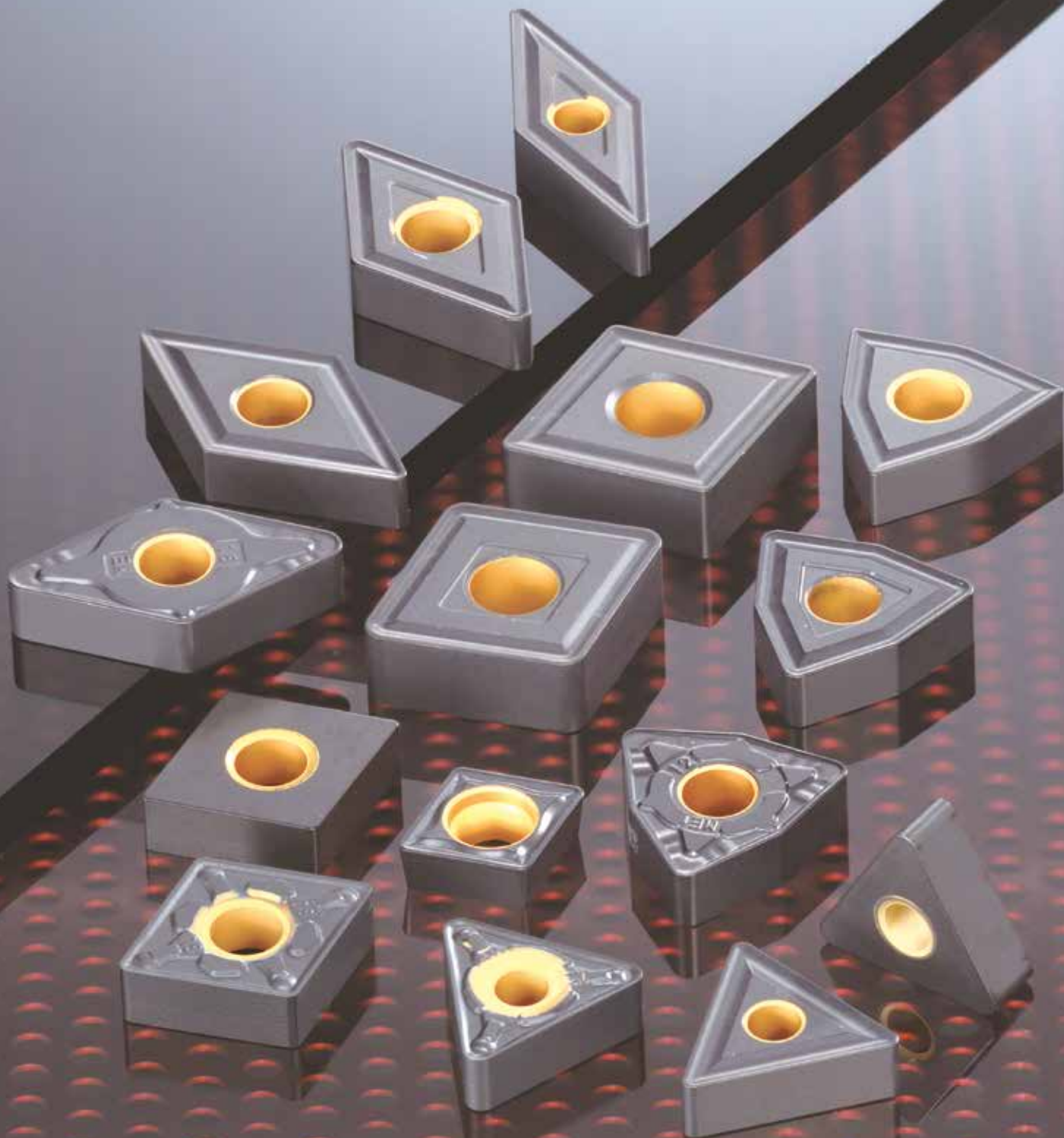


Coated Grades for Cast Iron

# AC4010K / AC4015K / AC4020K

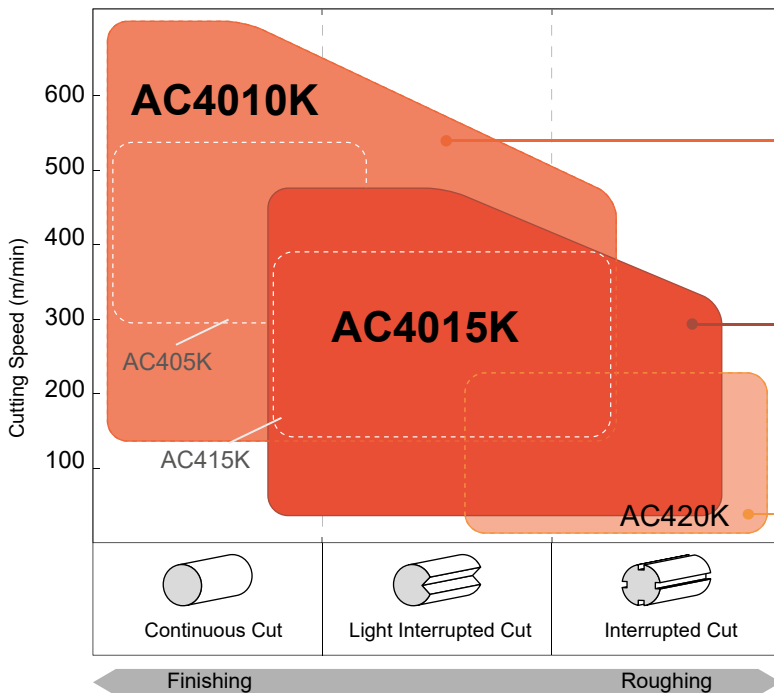
For Ultra-High Speed Machining of Gray Cast Iron to Heavy Interrupted Machining  
of High-Strength Ductile Cast Iron



# For Cast Iron Turning

## AC4010K / AC4015K

### Application Range



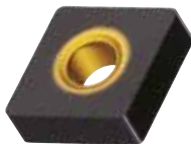
**AC4010K**  
1st recommended grade for gray cast iron. Ultra thick coating allows for ultra-high speed machining ( $v_c = 700$  m/min)

**AC4015K**  
1st recommended grade for ductile cast iron. High adhesion, high-strength coating provides longer and stable tool life.

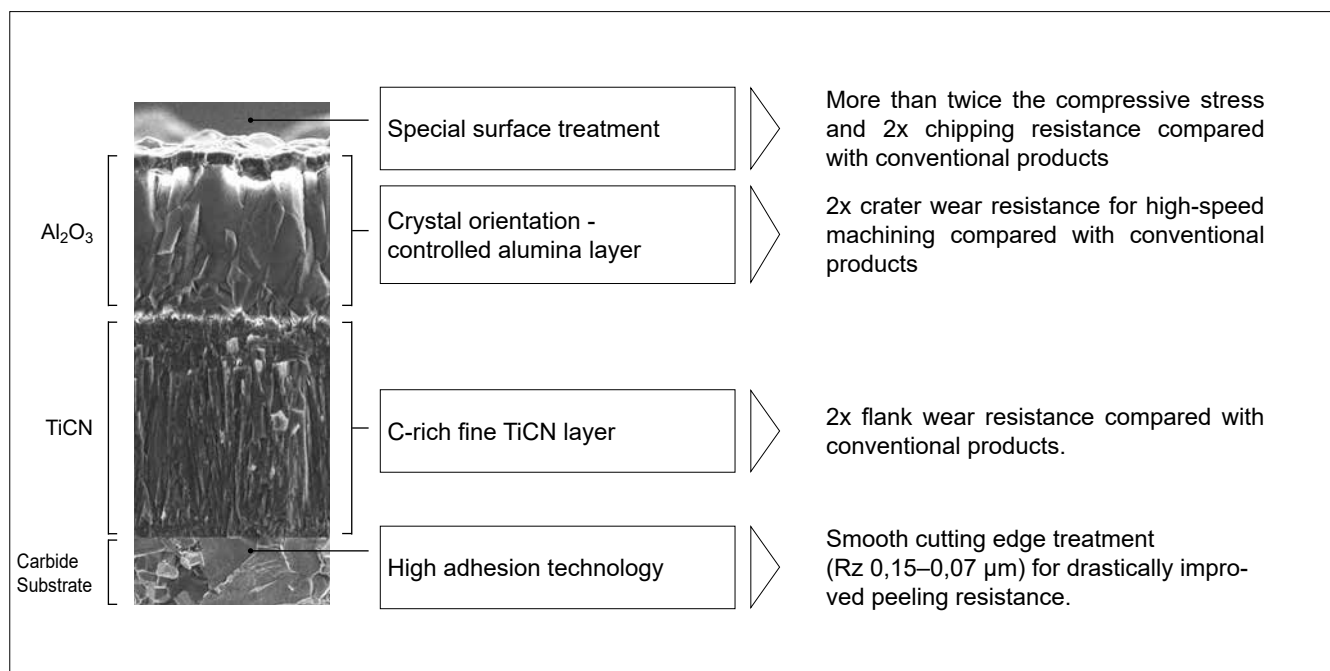
**AC420K**  
Excellent fracture resistance in heavy interrupted and unstable machining.

### Features

#### AC4010K / AC4015K

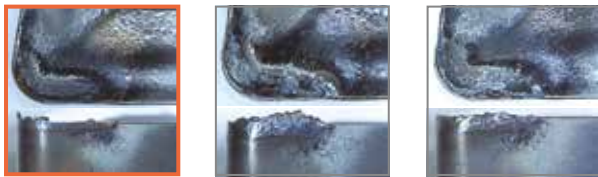
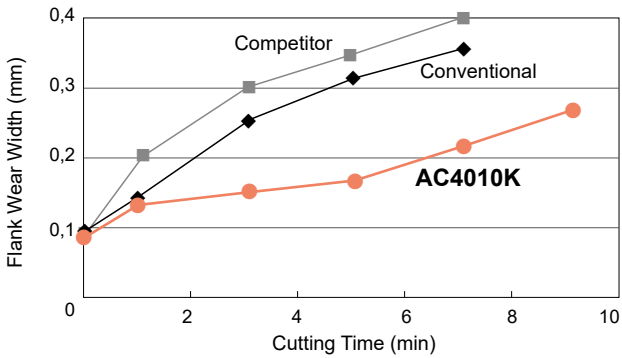


Newly developed high adhesion technology, crystal orientation control technology and residual stress control technology for longer and stable tool life with various cast irons - from gray cast iron and ordinary cast iron (GG) to high-strength ductile cast iron (GGG).



## Cutting Performance

### Wear Resistance, Gray Cast Iron (GG)



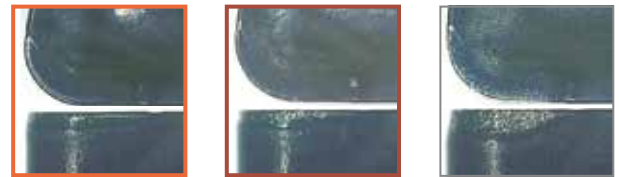
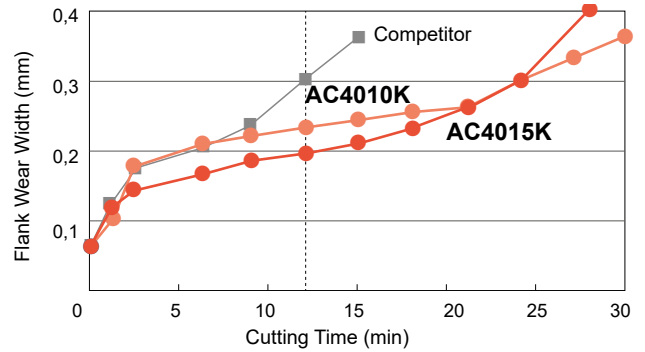
NGZ AC4010K

Conventional

Competitor

Work Material: GG-25 Continuous  
 Insert: CNMG120408  
 Cutting Conditions:  $v_c = 600$  m/min,  $f = 0,4$  mm/rev,  $a_p = 2,0$  mm, dry

### Wear Resistance, Ductile Cast Iron (GGG)



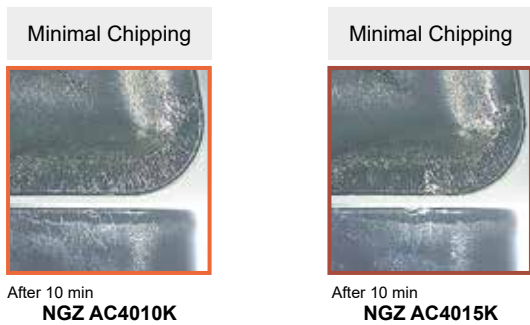
After 12 min  
NGZ AC4010K

After 12 min  
NGZ AC4015K

After 12 min  
Competitor

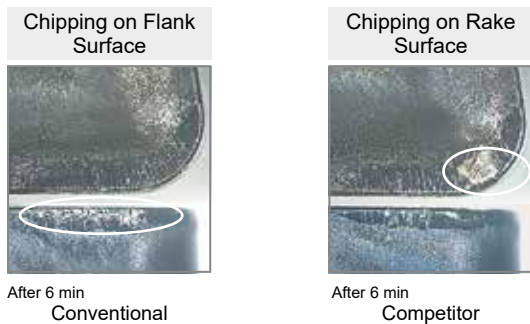
Work Material: GGG-70 Continuous  
 Insert: CNMG120408  
 Cutting Conditions:  $v_c = 140$  m/min,  $f = 0,3$  mm/rev,  $a_p = 1,5$  mm, wet

### Chipping Resistance, Gray Cast Iron (GG)



After 10 min  
NGZ AC4010K

After 10 min  
NGZ AC4015K

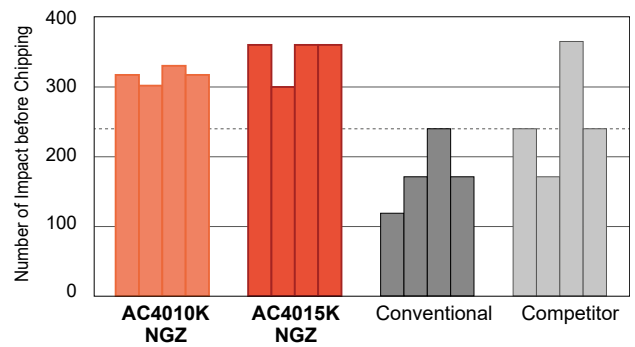


After 6 min  
Conventional

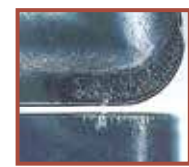
After 6 min  
Competitor

Work Material: GG-25 Interrupted  
 Insert: CNMG120408  
 Cutting Conditions:  $v_c = 400$  m/min,  $f = 0,3$  mm/rev,  $a_p = 2,0$  mm, wet

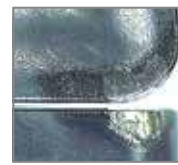
### Chipping Resistance, Ductile Cast Iron (GGG)



After 4 min  
NGZ AC4010K



After 4 min  
NGZ AC4015K



After 4 min  
Conventional



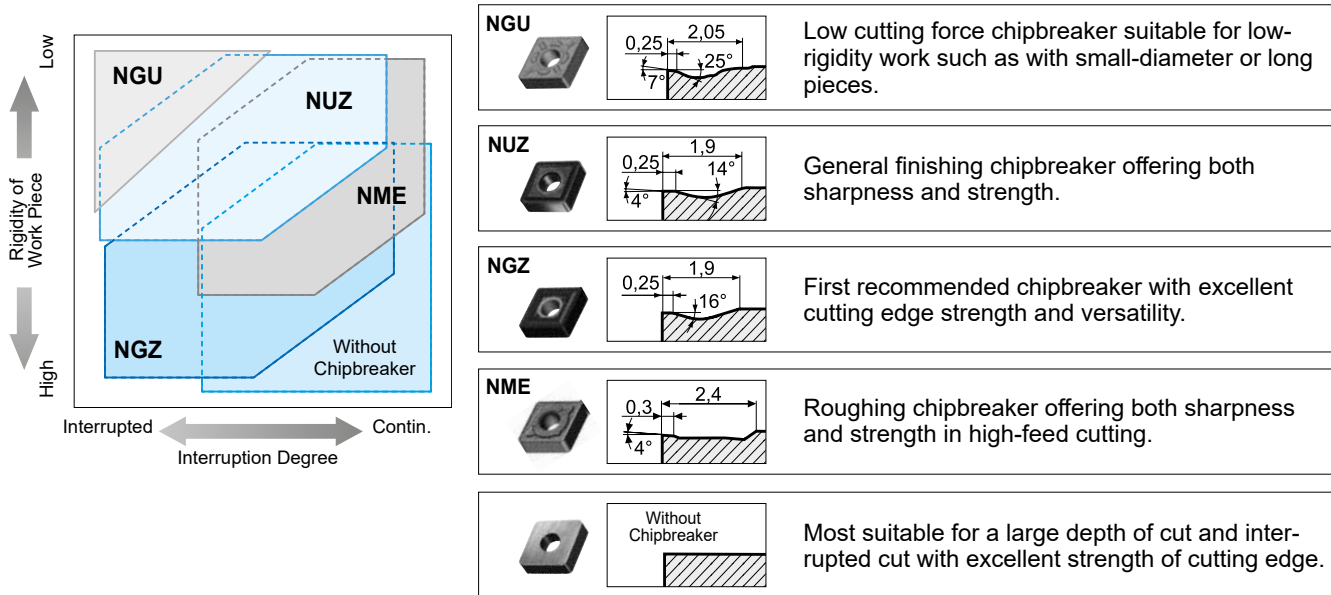
After 4 min  
Competitor

Work Material: GGG-40,3 Interrupted  
 Insert: CNMG120408  
 Cutting Conditions:  $v_c = 450$  m/min,  $f = 0,3$  mm/rev,  $a_p = 1,5$  mm, wet

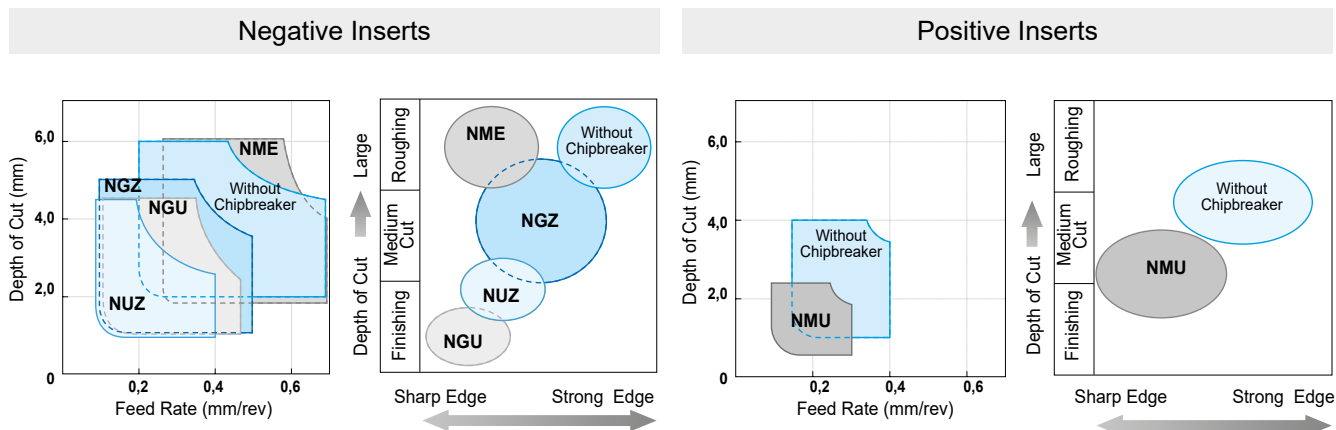
# For Cast Iron Turning

## AC4010K / AC4015K

### Chipbreaker Selection Guide



### Chipbreaker Application Range



### Recommended Cutting Conditions

Min. - Optimum - Max.

Work Material	Cutting Process	Grades	Cutting Conditions		
			Depth of Cut (mm)	Feed Rate (mm/rev)	Cutting Speed (m/min)
Gray Cast Iron (GG-25)	Continuous-General	AC4010K	0,5-2,0-6,0	0,10-0,25-0,40	200-400-700
	Interrupted	AC4015K	0,5-2,0-6,0	0,10-0,30-0,50	180-300-450
	Heavy Interrupted	AC420K	0,5-2,0-6,0	0,10-0,30-0,60	150-200-300
Ductile Cast Iron (GGG-40,3)	Continuous	AC4010K	0,5-2,0-6,0	0,10-0,25-0,40	180-300-450
	General-Interrupted	AC4015K	0,5-2,0-6,0	0,10-0,30-0,50	160-250-400
	Heavy Interrupted	AC420K	0,5-2,0-6,0	0,10-0,30-0,60	120-170-250
High Strength Ductile Cast Iron (GGG-70)	Continuous	AC4010K	0,5-2,0-6,0	0,10-0,25-0,40	160-250-400
	General-Interrupted	AC4015K	0,5-2,0-6,0	0,10-0,30-0,50	140-200-350
	Heavy Interrupted	AC420K	0,5-2,0-6,0	0,10-0,30-0,60	80-150-220

## Application Examples

**Brake Disc, GG-25** **AC4010K**

AC4010K achieved 1,4 times longer tool life.

Acute angle  
Facing of casting skin

Insert: CNMG120408  
Cutting Conditions:  $v_c = 960$  m/min,  $f = 0,75$  mm/rev,  $a_p = 2,0$  mm, wet

**Brake Disc, GG-25** **AC4015K**

At the same cutting conditions, only the competitor had an exposed substrate.

Obtuse angle  
Facing of casting skin

Insert: CNMG120408  
Cutting Conditions:  $v_c = 960$  m/min,  $f = 0,75$  mm/rev,  $a_p = 2,0$  mm, wet

**Ring, GGG-80** **AC4010K**  
**AC4015K**

Improved wear resistance in high-strength ductile cast iron machining.

Continuous cut

Insert: WNMG080412  
Cutting Conditions:  $v_c = 120$  m/min,  $f = 0,25$  mm/rev,  $a_p = 1,0-3,0$  mm, wet

**Differential Case, GGG-60** **AC4010K**  
**AC4015K**

Improved chipping resistance and suppressed wear variation during heavy interrupted machining of high-strength ductile cast iron.

Heavy interrupted cut

Insert: WNMG080412  
Cutting Conditions:  $v_c = 250$  m/min,  $f = 0,30-0,45$  mm/rev,  $a_p = 2,0$  mm, wet

**Gear Case, GGG-50** **AC4010K**  
**AC4015K**

1,2x tool life when combined with NME type chipbreaker for roughing.

Interrupted cut

Insert: CNMG120408  
Cutting Conditions:  $v_c = 220$  m/min,  $f = 0,35$  mm/rev,  $a_p = 1,5$  mm, wet

**Flywheel, GGG-40,3** **AC4015K**

Minimal wear even after twice the cutting processes thanks to excellent wear resistance.

Continuous cut

Insert: WNMG120408  
Cutting Conditions:  $v_c = 230$  m/min,  $f = 0,3$  mm/rev,  $a_p = 2,0$  mm, wet

## 80° Diamond Type

Shape	Cat. No.	Stock			Dimensions (mm)				
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius	
	CNMG 120404 NLUW	●	●	●	12,7	4,76	5,16	0,4	
	120408 NLUW	●	●	●				0,8	
	120412 NLUW	●	●	●				1,2	
	CNMG 090304 NGU	○	○	○	9,525	3,18	3,81	0,4	
	090308 NGU	○	○	○				0,8	
	CNMG 090412 NGU	○	○	○				1,2	
	CNMG 120404 NGU	○	○	○	12,7	4,76	5,16	0,4	
	120408 NGU	○	○	○				0,8	
	120412 NGU	○	○	○				1,2	
	120416 NGU	○	○	○				1,6	
	CNMG 160608 NGU	○	○	○	15,875	6,35	6,35	0,8	
	160612 NGU	○	○	○				1,2	
	160616 NGU	○	○	○				1,6	
CNMG 120408 NGUW	○	○	○	12,7				4,76	5,16
120412 NGUW	○	○	○		1,2				
	CNMG 120408 NME	○	○	○	12,7	4,76	5,16	0,8	
	120412 NME	○	○	○				1,2	
	120416 NME	○	○	○				1,6	
	CNMG 160608 NME	○	○	○	15,875	6,35	6,35	0,8	
	160612 NME	○	○	○				1,2	
	160616 NME	○	○	○				1,6	
	CNMG 190612 NME	○	○	○	19,05	6,35	7,94	1,2	
	190616 NME	○	○	○				1,6	
	190624 NME	○	○	○				2,4	
	CNMG 250924 NME	○	○	○				2,4	
	CNMG 120404 NUZ	○	○	○	12,7	4,76	5,16	0,4	
120408 NUZ	○	○	○	0,8					
120412 NUZ	○	○	○	1,2					
120416 NUZ	○	○	○	1,6					
	CNMG 160608 NUZ	○	○	○	15,875	6,35	6,35	0,8	
	160612 NUZ	○	○	○				1,2	
	160616 NUZ	○	○	○				1,6	
	CNMG 190612 NUZ	○	○	○				19,05	6,35
	190616 NUZ	○	○	○	1,6				
	CNMG 090408 NGZ	○	○	○	9,525	4,76	3,81	0,8	
	090412 NGZ	○	○	○				1,2	
	CNMG 120404 NGZ	○	○	○				12,7	4,76
	120408 NGZ	○	○	○	0,8				
	120412 NGZ	○	○	○	1,2				
	120416 NGZ	○	○	○	1,6				
		CNMG 160608 NGZ	○	○	○	15,875	6,35	6,35	0,8
		160612 NGZ	○	○	○				1,2
		160616 NGZ	○	○	○				1,6
		CNMG 190612 NGZ	○	○	○				19,05
190616 NGZ		○	○	○	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

Shape	Cat. No.	Stock			Dimensions (mm)				
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius	
	DNMG 110404 NGU	○	○	○	9,525	4,76	3,81	0,4	
	110408 NGU	○	○	○				0,8	
	110412 NGU	○	○	○				1,2	
		DNMG 150404 NGU	○	○	○	12,7	4,76	5,16	0,4
		150408 NGU	○	○	○				0,8
		150412 NGU	○	○	○				1,2
		150416 NGU	○	○	○				1,6
DNMG 150604 NGU		○	○	○	12,7	6,35	5,16	0,4	
150608 NGU		○	○	○				0,8	
150612 NGU	○	○	○	1,2					
150616 NGU	○	○	○	1,6					
	DNMG 150408 NME	○	○	○	12,7	4,76	5,16	0,8	
	150412 NME	○	○	○				1,2	
	150416 NME	○	○	○				1,6	
	DNMG 150608 NME	○	○	○	12,7	6,35	5,16	0,8	
	150612 NME	○	○	○				1,2	
150616 NME	○	○	○	1,6					
	DNMG 150404 NUZ	○	○	○	12,7	4,76	5,16	0,4	
	150408 NUZ	○	○	○				0,8	
	150412 NUZ	○	○	○				1,2	
	DNMG 150608 NUZ	○	○	○	12,7	6,35	5,16	0,8	
150612 NUZ	○	○	○	1,2					

● Euro stock ○ Japan stock

## 55° Diamond Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	DNMG 110408 NGZ	○	○	○	9,525	4,76	3,81	0,8
	110412 NGZ	○	○	○				1,2
	DNMG 150404 NGZ	○	○	○				12,7
	150408 NGZ	○	○	○	0,8			
	DNMG 150604 NGZ	○	○	○	12,7	6,35	5,16	1,2
150608 NGZ	○	○	○	0,8				
150612 NGZ	○	○	○	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

## Square Type

Shape	Cat. No.	Stock			Dimensions (mm)						
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius			
	SNMG 090304 NGU	○	○	○	9,525	3,18	3,81	0,4			
	090308 NGU	○	○	○				0,8			
	SNMG 120404 NGU	○	○	○				12,7	4,76	5,16	0,4
	120408 NGU	○	○	○	0,8						
	120412 NGU	○	○	○	1,2						
	120416 NGU	○	○	○	1,6						
		SNMG 150608 NGU	○	○	○	15,875	6,35	6,35	0,8		
150612 NGU		○	○	○	1,2						
150616 NGU		○	○	○	1,6						
SNMG 120408 NME		○	○	○	12,7				4,76	5,16	0,8
120412 NME		○	○	○		1,2					
120416 NME	○	○	○	1,6							
	SNMG 150608 NME	○	○	○	15,875	6,35	6,35	0,8			
	150612 NME	○	○	○				1,2			
	150616 NME	○	○	○				1,6			
	SNMG 190612 NME	○	○	○				19,05	6,35	7,94	1,2
	190616 NME	○	○	○	1,6						
	190624 NME	○	○	○	2,4						
	SNMG 250924 NME	○	○	○	2,4						
	SNMG 120408 NUZ	○	○	○	12,7	4,76	5,16	0,8			
	120412 NUZ	○	○	○				1,2			
	120416 NUZ	○	○	○				1,6			
	SNMG 150612 NUZ	○	○	○				15,875	6,35	6,35	1,2
	150616 NUZ	○	○	○	1,6						
	SNMG 190612 NUZ	○	○	○	19,05	6,38	7,94	1,2			
	190616 NUZ	○	○	○				1,6			
	SNMG 120408 NGZ	○	○	○				12,7	4,76	5,16	0,8
	120412 NGZ	○	○	○							1,2
	120416 NGZ	○	○	○	1,6						
SNMG 150612 NGZ	○	○	○	15,875	6,35	6,35	1,2				
150616 NGZ	○	○	○				1,6				
SNMG 190612 NGZ	○	○	○				19,05	6,35	7,94	1,2	
190616 NGZ	○	○	○	1,6							
	SNMA 120404	○	○	○	12,7	4,76	5,16	0,4			
	120408	○	○	○				0,8			
	120412	○	○	○				1,2			
	120416	○	○	○				1,6			
	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

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	TNMG 160404 NGU	○	○	○	9,525	4,76	3,81	0,4
	160408 NGU	○	○	○				0,8
	160412 NGU	○	○	○				1,2
	TNMG 220404 NGU	○	○	○	12,7	4,76	5,16	0,4
	220408 NGU	○	○	○				0,8
220412 NGU	○	○	○	1,2				
	TNMG 160408 NME	○	○	○	9,525	4,76	3,81	0,8
	160412 NME	○	○	○				1,2
	160416 NME	○	○	○				1,6
	TNMG 220408 NME	○	○	○	12,7	4,76	5,16	0,8
220412 NME	○	○	○	1,2				
220416 NME	○	○	○	1,6				

## △ Triangular Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	TNMG 160404 NUZ	○	○	●				0,4
	160408 NUZ	○	○	●				0,8
	160412 NUZ	○	○	●	9,525	4,76	3,81	1,2
	160416 NUZ	○	○	○				1,6
	160420 NUZ	○	○	○				2,0
TNMG	220408 NUZ	○	○	○				0,8
	220412 NUZ	○	○	○	12,7	4,76	5,16	1,2
	220416 NUZ	○	○	○				1,6
	TNMG 160404 NGZ	○	○	○				0,4
	160408 NGZ	●	●	●	9,525	4,76	3,81	0,8
	160412 NGZ	○	○	●				1,2
	TNMG 220408 NGZ	○	○	○				0,8
	220412 NGZ	○	○	○	12,7	4,76	5,16	1,2
220416 NGZ	○	○	○				1,6	
TNMA	160404	○	○	○				0,4
	160408	○	○	○				0,8
	160412	○	○	●	9,525	4,76	3,81	1,2
	160416	○	○	○				1,6
	160420	○	○	○				2,0
	TNMA 220408	○	○	○				0,8
220412	○	○	○	12,7	4,76	5,16	1,2	
220416	○	○	○				1,6	

## □ Square Type (without Insert Hole)

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	SNMN 120408	○	○	○				0,8
	120412	○	○	○	12,7	4,76	-	1,2
	120416	○	○	○				1,6

## △ Triangular Type (without Insert Hole)

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	TNMN 160408	○	○	○				0,8
	160412	○	○	○	9,525	4,76	-	1,2
	160416	○	○	○				1,6

## ◇ 35° Diamond Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	VNMG 160404 NGU	○	○	○				0,4
	160408 NGU	○	○	○	9,525	4,76	3,81	0,8
	160412 NGU	○	○	○				1,2
	VNMG 160404 NUZ	○	○	○				0,4
	160408 NUZ	○	○	○	9,525	4,76	3,81	0,8
	160412 NUZ	○	○	○				1,2
	VNMG 160404 NGZ	○	○	○				0,4
	160408 NGZ	●	●	○	9,525	4,76	3,81	0,8
	160412 NGZ	○	○	○				1,2
VNMA	160404	○	○	○				0,4
	160408	○	○	○	9,525	4,76	3,81	0,8
	160412	○	○	○				1,2

## △ Trigon Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC4010K	AC4015K	AC420K	Inscribed Circle	Thick-ness	Screw Hole Ø	Nose Radius
	WNMG 080408 NLUW	●	●	○	12,7	4,76	5,16	0,8
	080412 NLUW	●	●	○				1,2
	WNMG 060404 NGU	○	○	○				0,4
	060408 NGU	○	○	○	9,525	4,76	3,81	0,8
	060412 NGU	○	○	○				1,2
	WNMG 080404 NGU	○	○	○				0,4
	080408 NGU	○	○	○	12,7	4,76	5,16	0,8
	080412 NGU	○	○	○				1,2
WNMG 080408 NGUW	●	○	○	12,7	4,76	5,16	0,8	
	WNMG 060408 NME	○	○	○	9,525	4,76	3,81	0,8
	060412 NME	○	○	○				1,2
	WNMG 080408 NME	○	○	○				0,8
	080412 NME	○	○	○	12,7	4,76	5,16	1,2
080416 NME	○	○	○				1,6	
	WNMG 080404 NUZ	○	○	○				0,4
	080408 NUZ	○	○	●	12,7	4,76	5,16	0,8
	080412 NUZ	●	○	○				1,2
	WNMG 060408 NGZ	○	○	●	9,525	4,76	3,81	0,8
	060412 NGZ	○	○	●				1,2
	WNMG 080404 NGZ	○	○	○				0,4
080408 NGZ	○	○	●	12,7	4,76	5,16	0,8	
080412 NGZ	○	○	●				1,2	
	WNMA 080408	○	●	●				0,8
	080412	○	●	●	12,7	4,76	5,16	1,2
	080416	○	●	●				1,6

● Euro stock ○ Japan stock

## 80° Diamond Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)			
			AC4010K	AC4015K	AC420K	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	CCMT 09T304 NLB	●	●		9,525	3,97	4,4	0,4
		09T308 NLB	●	●					0,8
	7°	CCMT 060204 NSU	●	●		6,35	2,38	2,8	0,4
		CCMT 09T304 NSU	●	●					0,4
		CCMT 09T308 NSU	●	●		9,525	3,97	4,4	0,8
		CCMT 120404 NSU	●	●		12,7	4,76	5,5	0,4
		120408 NSU	●	●				0,8	
	7°	CCMT 120412 NSK	●	●		12,7	4,76	5,5	1,2
	7°	CCMT 09T304 NMU	○	●	●	9,525	3,97	4,4	0,4
		09T308 NMU	●	●	●				0,8
	7°	CCMW 060204	○	○		6,35	2,38	2,8	0,4
		CCMW 09T304	○	○					0,4
		09T308	○	○	●	9,525	3,97	4,4	0,8
	11°	CPMT 080204 NMU	○	○		7,94	2,38	3,4	0,4
		080208 NMU	○	○					0,8
		CPMT 090304 NMU	○	○		9,525	3,18	4,4	0,4
		090308 NMU	○	○					0,8
	11°	CPMW 080204	○	○		7,94	2,38	3,4	0,4
		080208	○	○					0,8
		CPMW 090304	○	○		9,525	3,18	4,4	0,4
		090308	○	○				0,8	

## 55° Diamond Type

	7°	DCMT 070208 NSU	●	●		6,35	2,38	2,8	0,8
		DCMT 11T304 NSU	●	●					0,4
		11T308 NSU	●	●		9,525	3,97	4,4	0,8
	7°	DCMT 11T304 NMU	○	●	●	9,525	3,97	4,4	0,4
		11T308 NMU	●	●	●				0,8
	7°	DCMW 070204	○	○		6,35	2,38	2,8	0,4
		070208	○	○					0,8
		DCMW 11T304	○	○		9,525	3,97	4,4	0,4
		11T308	●	●					0,8

## Round Type

	7°	RCMX 1003M0NRP	○	○		10,0	3,18	3,6	-
		RCMX 1204M0NRP	○	○		12,0	4,76	4,2	-
		RCMX 1606M0NRP	○	○		16,0	6,35	5,2	-

## Square Type

	7°	SCMT 09T308 NSU	●	●		9,525	3,97	4,4	0,8
		SCMT 120408 NSU	●	●		12,7	4,76	5,5	0,8
	7°	SCMT 09T308 NMU	○	○	●	9,525	3,97	4,4	0,8
		SCMT 120408 NMU	○	○	●	12,7	4,76	5,5	0,8
	7°	SCMW 09T308	○	○		9,525	3,97	4,4	0,8
		SCMW 120408	○	○					0,8
		120412	○	○		12,7	4,76	5,5	1,2

## Triangular Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)			
			AC4010K	AC4015K	AC420K	Inscribed Circle	Thickness	Screw Hole Ø	Nose Radius
	7°	TCMW 110204	○	○		6,35	2,38	2,8	0,4
		110208	○	○					0,8
		TCMW 16T304	○	○					0,4
		16T308	○	○		9,525	3,97	4,3	0,8
		16T312	○	○				1,2	
	7°	TCMT 110208 NSU	●	●		6,35	2,38	2,8	0,8
		TCMT 16T308 NSU	●	●		9,525	3,97	4,3	0,8
	7°	TCMT 16T312 NSK	●	●		9,525	3,97	4,3	1,2
	11°	TPMT 110304 NMU	○	○		6,35	3,18	3,4	0,4
		110308 NMU	○	○					0,8
	11°	TPMT 160404 NMU	○	○		9,525	4,76	4,4	0,4
		160408 NMU	○	○					0,8

## 35° Diamond Type

	5°	VBMT 160404 NSU	●	●		9,525	4,76	4,4	0,4
		160408 NSU	●	●					0,8
	5°	VBMT 160412 NSK	●	●		9,525	4,76	4,4	1,2
	5°	VBMW 160404	○	○		9,525	4,76	4,4	0,4
		160408	○	○					0,8
	7°	VCMT 160404 NSU	●	●		9,525	4,76	4,4	0,4

## Square Type (without Insert Hole)

	11°	SPMN 090304	○	○		9,525	3,18	-	0,4
		090308	○	○					0,8
		SPMN 120304	○	○		12,7	3,18	-	0,4
		120308	○	○					0,8
		120312	○	○				1,2	

## Triangular Type (without Insert Hole)

	11°	TPMN 110304	○	○		6,35	3,18	-	0,4
		110308	○	○					0,8
		TPMN 160304	○	○		9,525	3,18	-	0,4
		160308	○	○					0,8
		160312	○	○				1,2	

● Euro stock ○ Japan stock



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