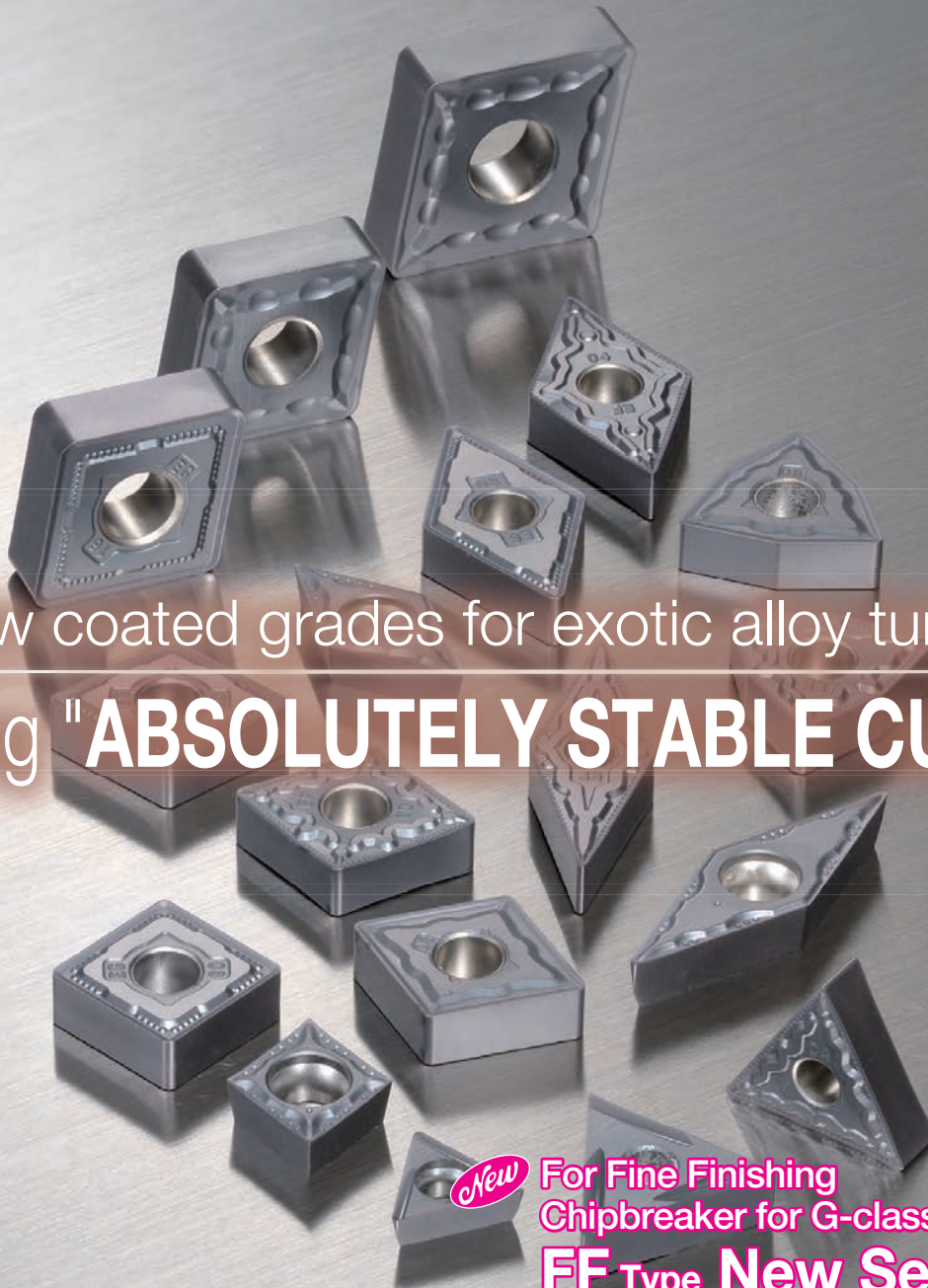


Coated Grades for Exotic Alloy Turning

# AC5005S/AC5015S/AC5025S

Rev. 3



New coated grades for exotic alloy turning,  
creating "**ABSOLUTELY STABLE CUTTING**"

*New*

For Fine Finishing  
Chipbreaker for G-class Positive Inserts  
**FF Type New Series** **46** items

SumiSmall

*Expansion*

For Variable Depth of Cut  
Chipbreaker for G-class Positive Inserts  
**SI Type Expansion** **20** items

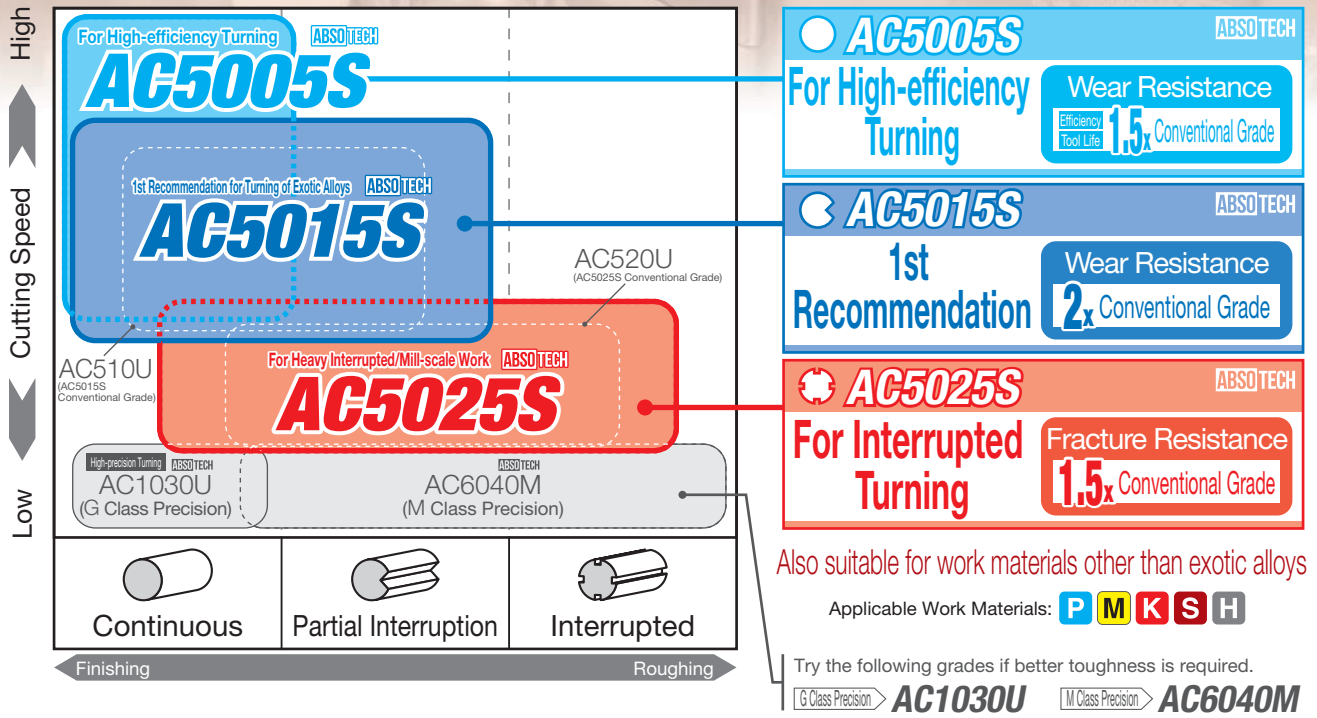
SumiSmall





# AC5005S / AC5015S / AC5025S

## Application Range



## Features of AC5000S Series



### PVD Coating Technology **ABSOTECH™**

Highly heat-resistant ultra multi-layered thin-film AlTiSiN structure realises excellent crater wear and flank wear resistance.

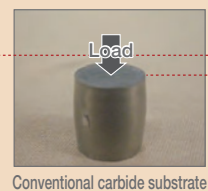
### Newly Developed Tough Carbide Substrate

Introduction of a revolutionary new sintering process enables hardness to be maintained while greatly improving toughness, achieving excellent notch wear and chipping resistance.



### Newly Developed Heat-Resistant Carbide Substrate **AC5005S**

Achieving excellent wear and plastic deformation resistance during high-efficiency turning with a newly developed dedicated substrate that has excellent high temperature hardness and strength.



Deformation at high temperatures  
**50% Down** from Conventional Grade  
 (High-temperature deformation evaluation 800°C)



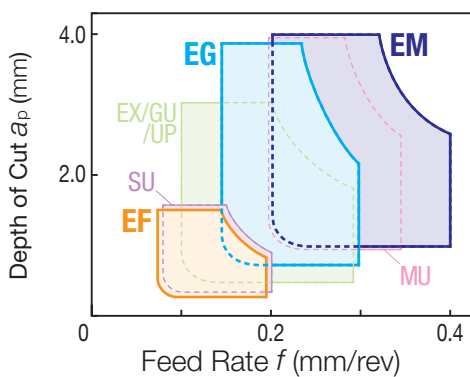
# AC5005S/AC5015S/AC5025S

## Chipbreaker Selection

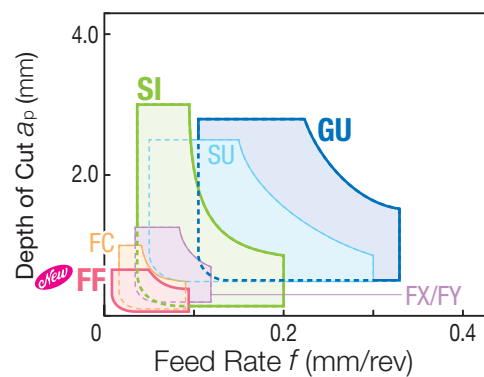
Negative		Positive	
<p><b>EF Type</b> For Finishing</p> <p>Chipbreaker Cross Section (CNMG120400 Type)</p> <p><b>Corner Part</b> (mm): 1.2, 20°</p> <p><b>Cutting Edge</b> (mm): 20°</p> <p>Main chipbreaker exhibits excellent chip evacuation performance even with small depths of cut</p> <p>Cutting edge designed with an emphasis on sharpness (20° rake angle) to suppress wear</p> <p>Grooved rake face suppresses heat generation and uneven contact</p>	<p><b>FF Type</b> <sup>New</sup> Fine Cutting to Finishing</p> <p>Chipbreaker Cross Section (CCGT09T300 Type)</p> <p><b>Corner Part</b> (mm): 0.45, 15°</p> <p><b>Cutting Edge</b> (mm): 14°</p> <p>Wavy cutting edge and chip pocket design prevents chips from overflowing the breaker wall</p> <p>Protrusion design enables chip control in fine cutting</p>		
<p><b>EG Type</b> For Medium to Rough Cutting</p> <p>Chipbreaker Cross Section (CNMG120400 Type)</p> <p><b>Corner Part</b> (mm): 0.09, 2.20, 20°, 30°</p> <p><b>Cutting Edge</b> (mm): 0.09, 20°, 30°</p> <p>Spherical protrusions exhibit excellent chip evacuation performance over a wide range of conditions</p> <p>Cutting edge shape that retains its strength even after wear progresses</p>	<p><b>SI Type</b> For Finishing to Light Cutting</p> <p>Chipbreaker Cross Section (CCGT09T300 Type)</p> <p><b>Corner Part</b> (mm): 0.8, 15°</p> <p><b>Cutting Edge</b> (mm): 14°</p> <p>Dimpled shape suppresses heat generation due to large depths of cut</p> <p>Cutting edge designed with an emphasis on sharpness (15° rake angle)</p> <p>Cutting edge shape intended to improve profiling and reduce cutting force</p>		
<p><b>EM Type</b> For Roughing</p> <p>Chipbreaker Cross Section (CNMG120400 Type)</p> <p><b>Corner Part</b> (mm): 0.05, 2.50, 20°</p> <p><b>Cutting Edge</b> (mm): 0.30, 25°</p> <p>Large convex rake face design keeps its cutting edge strength while suppressing crater wear</p> <p>Suppresses notch wear by eliminating the change of cutting points on the cutting edge</p>	<p><b>GU Type</b> For Light to Medium Cutting</p> <p>Chipbreaker Cross Section (CCGT09T300 Type)</p> <p><b>Corner Part</b> (mm): 0.2, 1.6, 5°, 15°</p> <p><b>Cutting Edge</b> (mm): 0.15, 3°, 25°, 8°</p> <p>Suppresses chip build-up at high feed rates for ideal chip control</p> <p>Protrusion design controls chip flow</p> <p>Rake face shape with excellent balance of sharpness and strength</p>		

## Chipbreaker Application Range

### Negative Inserts

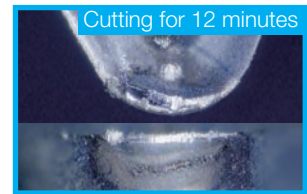
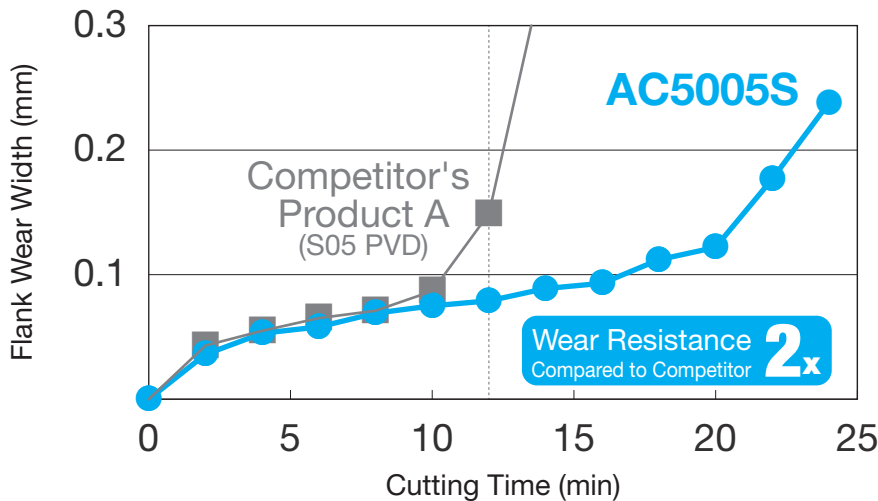


### Positive Inserts

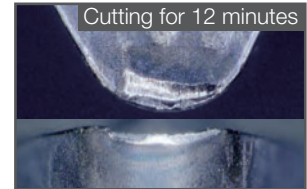


# AC5005S/AC5015S/AC5025S

■ Comparison of Wear Resistance for **AC5005S (High-speed)** Newly developed heat-resistant carbide substrate and PVD coating technology ABSOTECH™ suppress wear



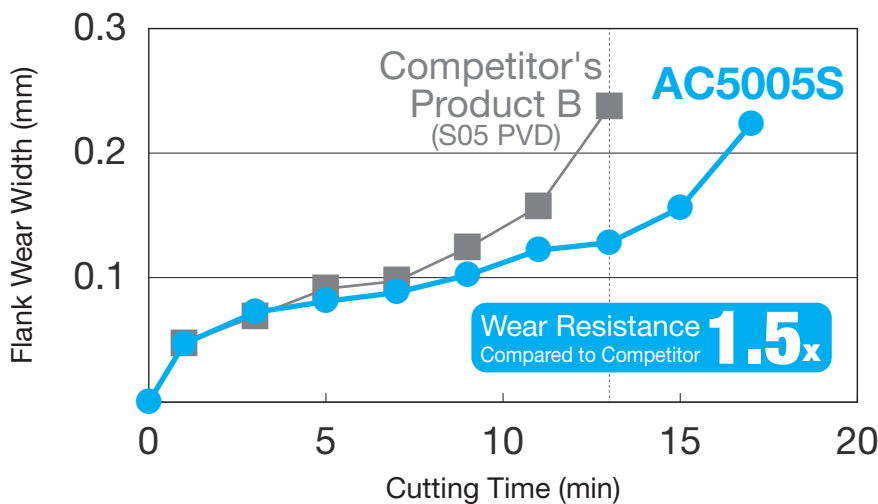
**AC5005S**



Competitor's Product A

Work Material: Inconel 718 (44HRC) Insert: DNMG150408 Cutting Conditions:  $v_c = 100\text{m/min}$   $f = 0.15\text{mm/rev}$   $a_p = 0.50\text{mm}$  Wet

■ Comparison of Wear Resistance for **AC5005S (High-feed)** Newly developed heat-resistant carbide substrate and PVD coating technology ABSOTECH™ suppress wear



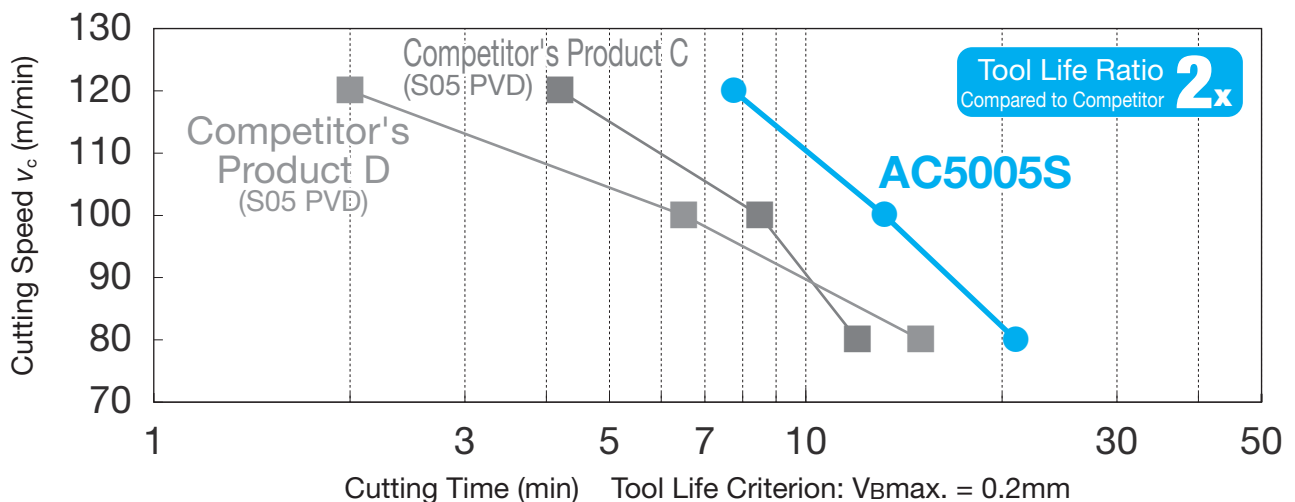
**AC5005S**



Competitor's Product B

Work Material: Inconel 718 (44HRC) Insert: CNMG120408 Cutting Conditions:  $v_c = 50\text{m/min}$   $f = 0.25\text{mm/rev}$   $a_p = 1.50\text{mm}$  Wet

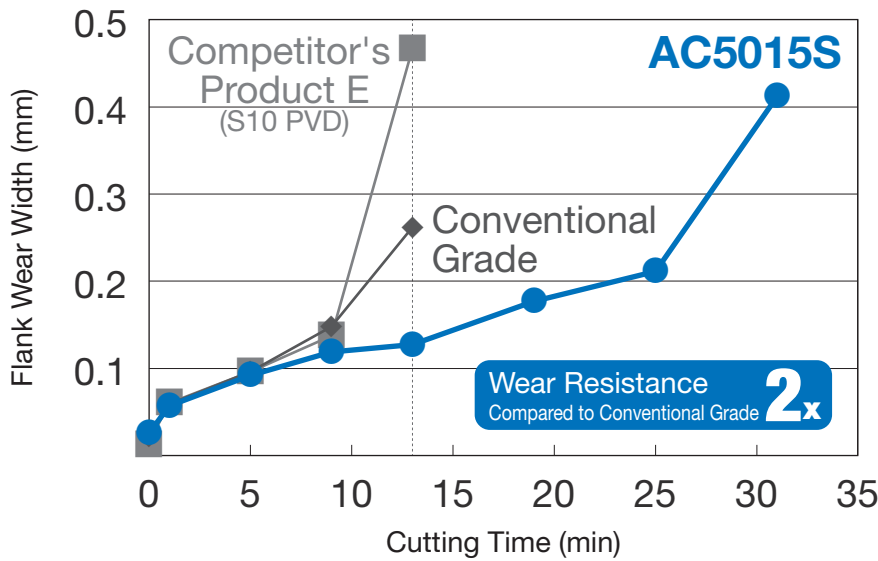
■ Tool Life of **AC5005S (V-T Chart (High-speed))** 2x longer tool life in high-speed turning



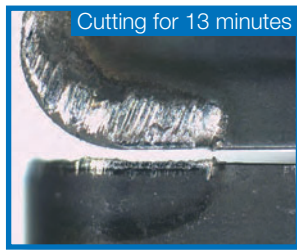
Work Material: Inconel 718 (45HRC) Insert: CNMG120408 Cutting Conditions:  $f = 0.15\text{mm/rev}$   $a_p = 0.50\text{mm}$  Wet

# AC5005S/AC5015S/AC5025S

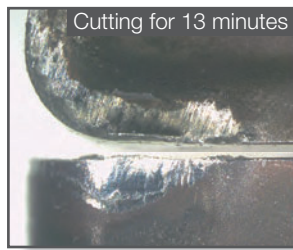
## Comparison of Wear Resistance for AC5015S PVD Coating Technology ABSOTECH™ Suppresses Wear



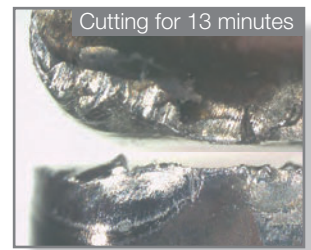
Work Material : Inconel 718 (44HRC)  
 Insert : CNMG120408  
 Cutting Conditions:  $v_c = 40\text{m/min}$   
 $f = 0.1\text{mm/rev}$   
 $a_p = 1.5\text{mm}$   
 Wet



AC5015S

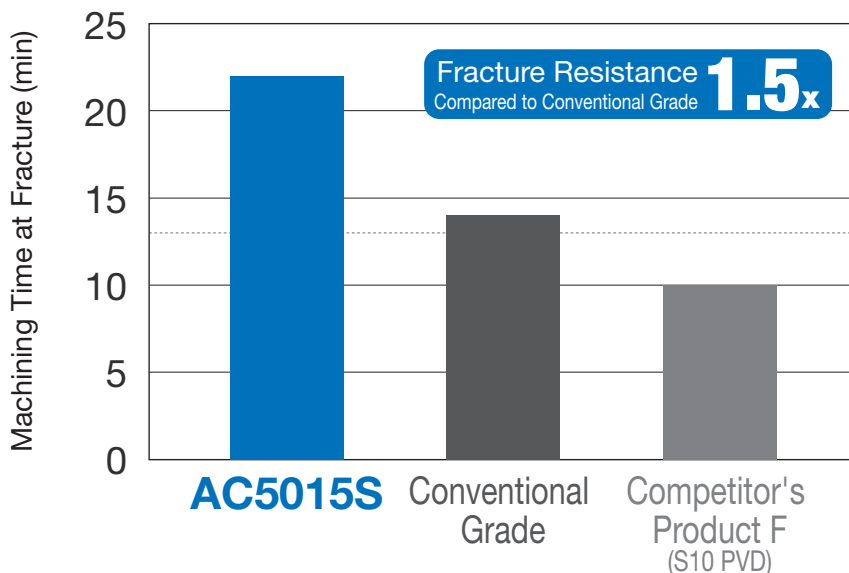


Conventional Grade

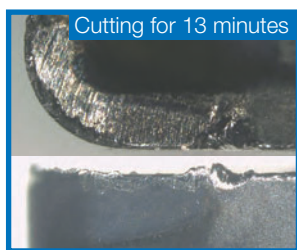


Comp's E (S10 PVD)

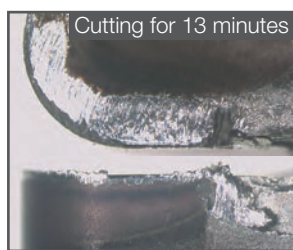
## Comparison of Fracture Resistance for AC5015S Newly Developed Tough Substrate Suppresses Notch Wear



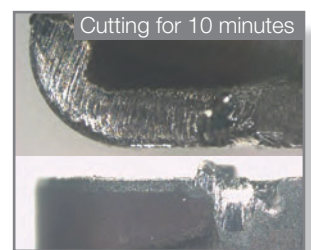
Work Material : Hastelloy (22HRC)  
 Insert : CNMG120408  
 Cutting Conditions:  $v_c = 50\text{m/min}$   
 $f = 0.1\text{mm/rev}$   
 $a_p = 1.5\text{mm}$   
 Wet



AC5015S



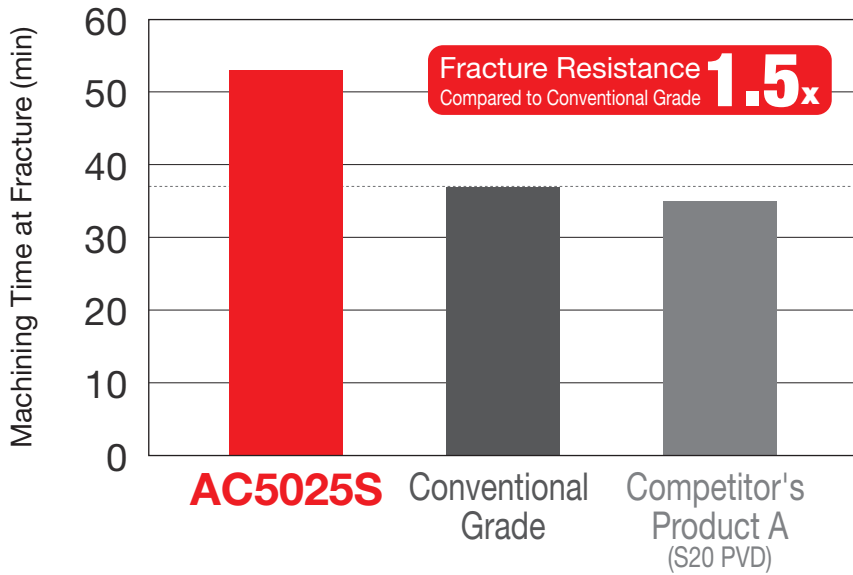
Conventional Grade



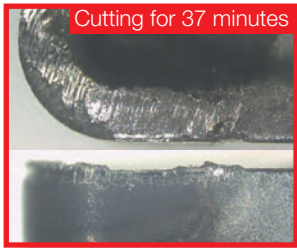
Comp's F (S10 PVD)

# AC5005S/AC5015S/AC5025S

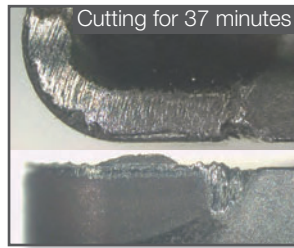
## Comparison of Fracture Resistance for AC5025S Newly Developed Tough Substrate Suppresses Notch Wear



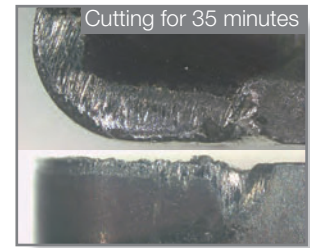
Work Material : Hastelloy (22HRC)  
 Insert : CNMG120408  
 Cutting Conditions:  $v_c = 50\text{m/min}$   
 $f = 0.1\text{mm/rev}$   
 $a_p = 1.5\text{mm}$   
 Wet



AC5025S

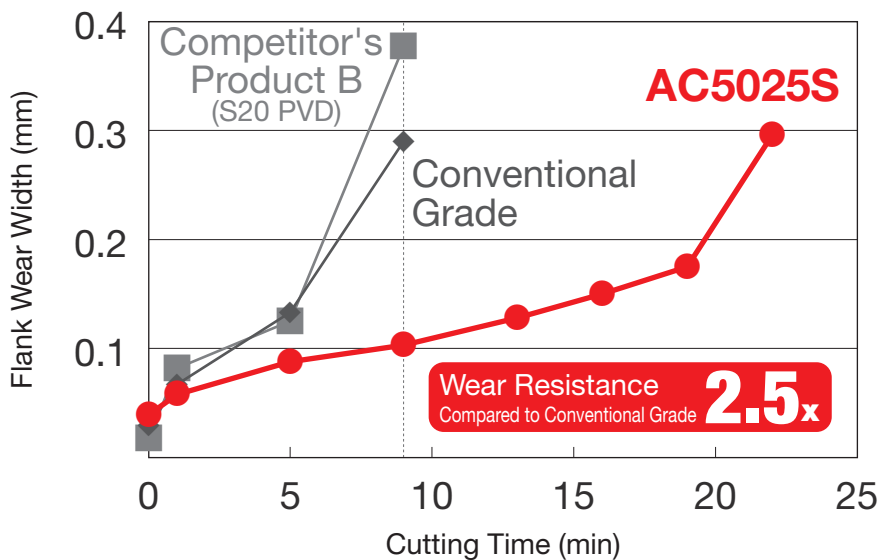


Conventional Grade

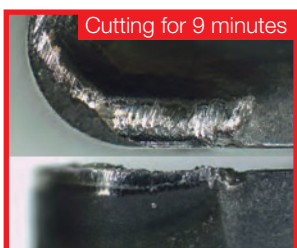


Comp's A (S20 PVD)

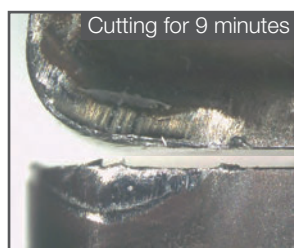
## Comparison of Wear Resistance for AC5025S PVD Coating Technology ABSOTECH™ Suppresses Wear



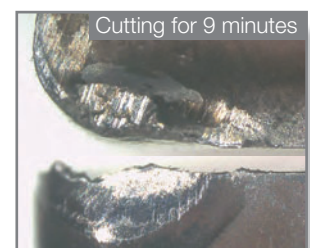
Work Material : Inconel 718 (44HRC)  
 Insert : CNMG120408  
 Cutting Conditions:  $v_c = 40\text{m/min}$   
 $f = 0.1\text{mm/rev}$   
 $a_p = 1.5\text{mm}$   
 Wet



AC5025S



Conventional Grade

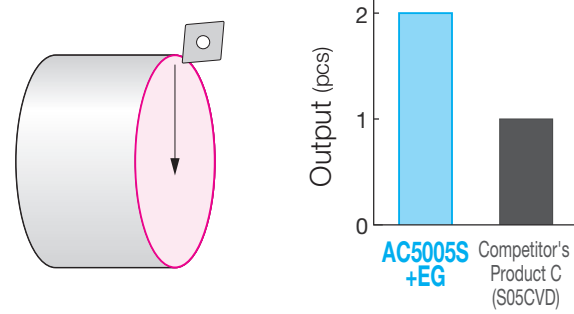
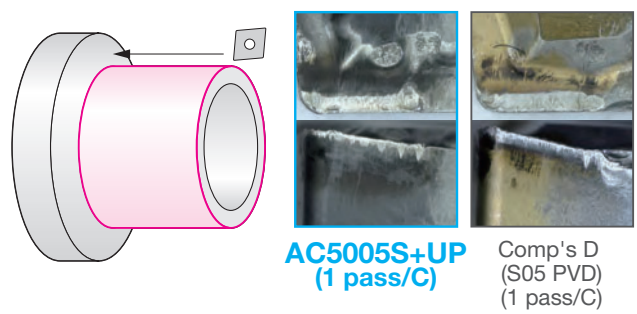
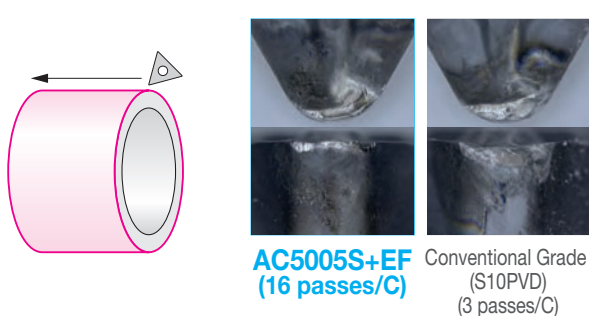
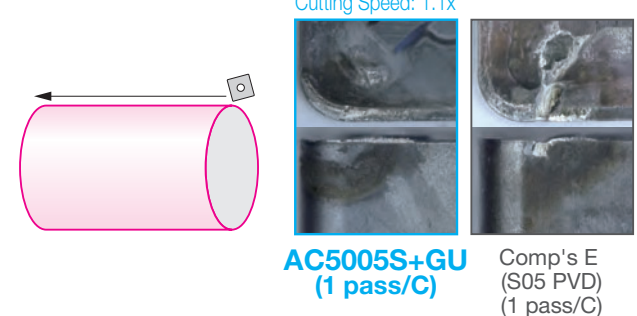
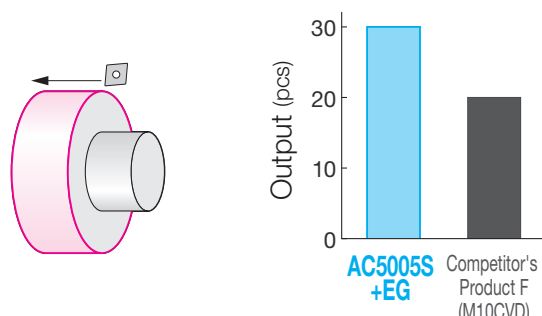
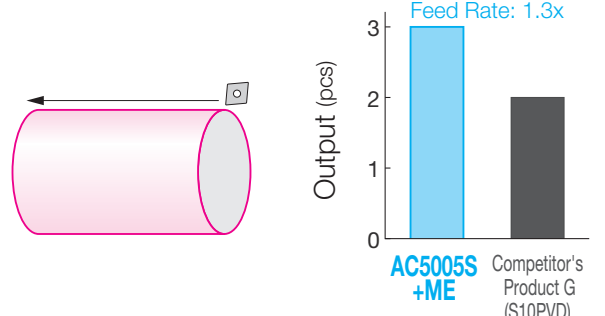


Comp's B (S20 PVD)



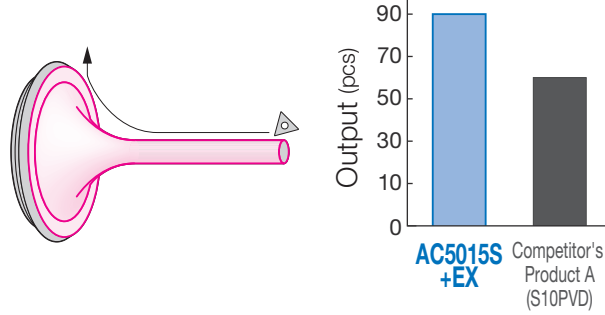
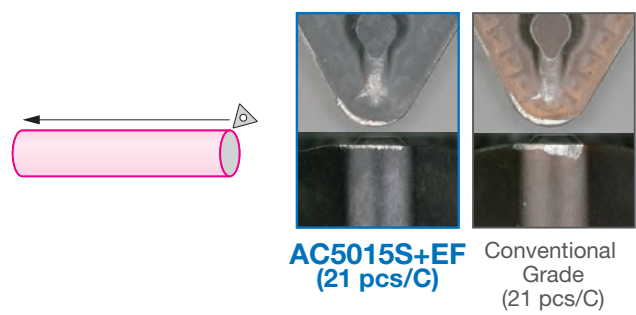
# AC5005S/AC5015S/AC5025S

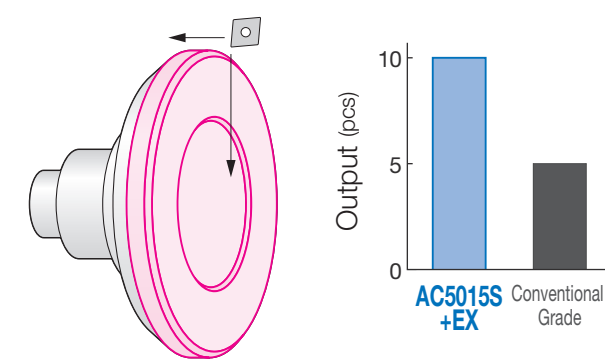
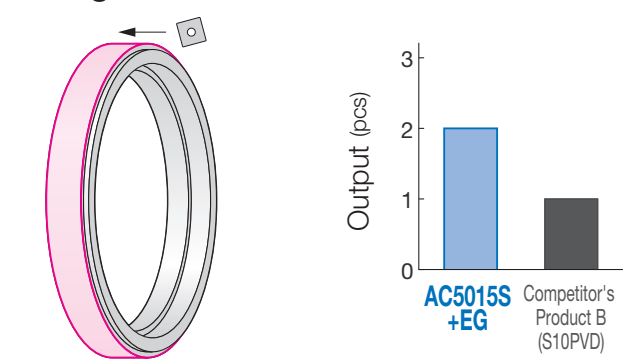
## Application Examples of AC5005S

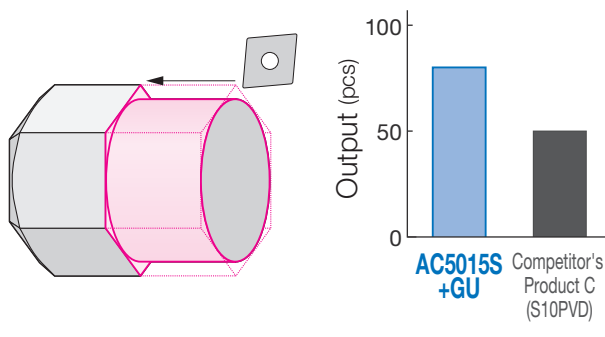
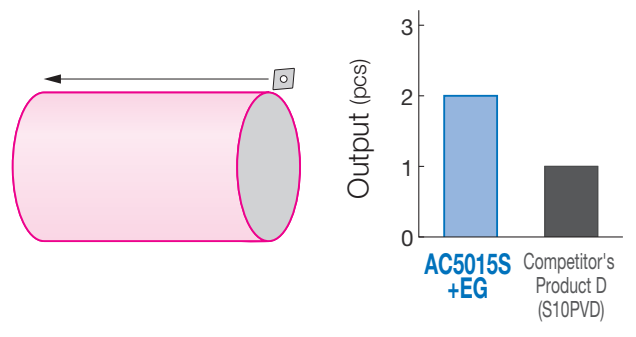
<p><b>Inconel 718 Aerospace Component</b> <span style="background-color: #0070C0; color: white; padding: 2px;">S</span></p> <p>Good wear resistance with 2x longer tool life</p>  <p>Output (pcs)</p> <p>AC5005S+EG: 2 pcs Competitor's Product C (S05CVD): 1 pc</p> <p>Tool : CNMG190616N-EG (AC5005S) Cutting Conditions : <math>v_c=55\text{m/min}</math> <math>f=0.3\text{mm/rev}</math> <math>a_p=3.0\text{mm}</math> Wet</p>	<p><b>Inconel 718 Aerospace Component</b> <span style="background-color: #0070C0; color: white; padding: 2px;">S</span></p> <p>Suppresses wear and extends tool life</p>  <p>AC5005S+UP (1 pass/C) Comp's D (S05 PVD) (1 pass/C)</p> <p>Tool : CNMG120408N-UP (AC5005S) Cutting Conditions : <math>v_c=45\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=3.2\text{mm}</math> Wet</p>
<p><b>Ni-based Heat-Resistant Alloy Industrial Machine Component</b> <span style="background-color: #0070C0; color: white; padding: 2px;">S</span></p> <p>Good wear resistance with at least 5x longer tool life</p>  <p>AC5005S+EF (16 passes/C) Conventional Grade (S10PVD) (3 passes/C)</p> <p>Tool : TNMG160408N-EF (AC5005S) Cutting Conditions : <math>v_c=30\text{m/min}</math> <math>f=0.13\text{mm/rev}</math> <math>a_p=0.8\text{mm}</math> Wet</p>	<p><b>Hardened Steel Industrial Machine Component (50 to 55HRC)</b> <span style="background-color: #0070C0; color: white; padding: 2px;">H</span></p> <p>Good wear resistance with 13% reduced machining time and extended tool life</p> <p>Cutting Speed: 1.1x</p>  <p>AC5005S+GU (1 pass/C) Comp's E (S05 PVD) (1 pass/C)</p> <p>Tool : SNMG120412N-GU (AC5005S) Cutting Conditions : <math>v_c=51\text{m/min}</math> <math>f=0.4\text{mm/rev}</math> <math>a_p=1.4\text{mm}</math> Wet</p>
<p><b>15-5 PH Stainless Steel Industrial Machine Component</b> <span style="background-color: #FFD700; color: black; padding: 2px;">M</span></p> <p>Good wear resistance with 1.4x longer tool life</p>  <p>Output (pcs)</p> <p>AC5005S+EG: 30 pcs Competitor's Product F (M10CVD): 20 pcs</p> <p>Tool : CNMG120408N-EG (AC5005S) Cutting Conditions : <math>v_c=100\text{m/min}</math> <math>f=0.2\text{mm/rev}</math> <math>a_p=0.6\text{mm}</math> Wet</p>	<p><b>15-5 PH Stainless Steel Aerospace Component</b> <span style="background-color: #FFD700; color: black; padding: 2px;">M</span></p> <p>Good wear resistance with 66% reduced machining time and 1.5x longer tool life</p> <p>Cutting Speed: 1.5x Feed Rate: 1.3x</p>  <p>Output (pcs)</p> <p>AC5005S+ME: 3 pcs Competitor's Product G (S10PVD): 2 pcs</p> <p>Tool : CNMG120412N-ME (AC5005S) Cutting Conditions : <math>v_c=55\text{m/min}</math> <math>f=0.36\text{mm/rev}</math> <math>a_p=2.5\text{mm}</math> Wet</p>

# AC5005S/AC5015S/AC5025S

## Application Examples of AC5015S

Ni-Based Heat-Resistant Alloy Automotive Component <span style="float: right;">S</span>	Inconel Automotive Component <span style="float: right;">S</span>												
<p>Good wear resistance with 1.5x longer tool life</p>  <p>Output (pcs)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs)</th> </tr> <tr> <td>AC5015S +EX</td> <td>90</td> </tr> <tr> <td>Competitor's Product A (S10PVD)</td> <td>60</td> </tr> </table>	Material	Output (pcs)	AC5015S +EX	90	Competitor's Product A (S10PVD)	60	<p>Suppresses wear and extends tool life</p>  <p>Output (pcs/C)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs/C)</th> </tr> <tr> <td>AC5015S+EF</td> <td>21</td> </tr> <tr> <td>Conventional Grade</td> <td>21</td> </tr> </table>	Material	Output (pcs/C)	AC5015S+EF	21	Conventional Grade	21
Material	Output (pcs)												
AC5015S +EX	90												
Competitor's Product A (S10PVD)	60												
Material	Output (pcs/C)												
AC5015S+EF	21												
Conventional Grade	21												
<p>Tool : TNMG160408N-EX (AC5015S) Cutting Conditions : <math>v_c=82\text{m/min}</math> <math>f=0.12\text{mm/rev}</math> <math>a_p=0.5\text{mm}</math> Wet</p>	<p>Tool : TNMG160408N-EF (AC5015S) Cutting Conditions : <math>v_c=30\text{m/min}</math> <math>f=0.04\text{mm/rev}</math> <math>a_p=0.5\text{mm}</math> Wet</p>												

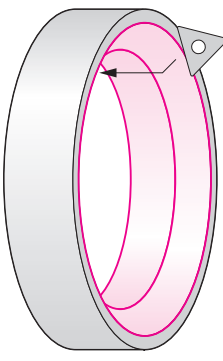
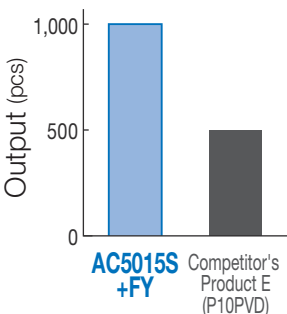
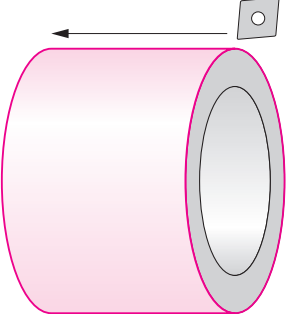
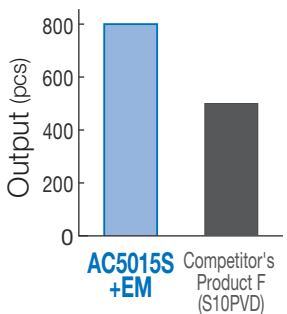
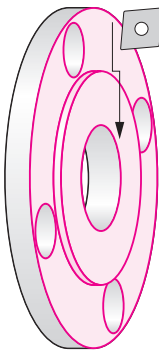
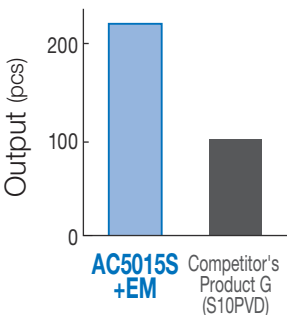
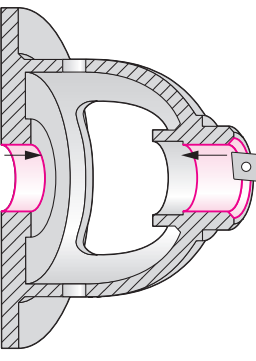
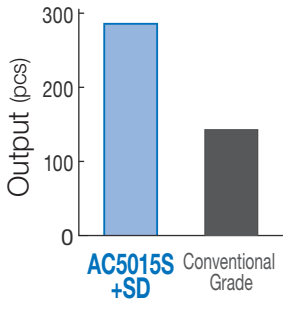
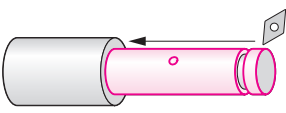
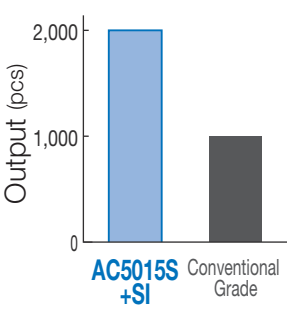
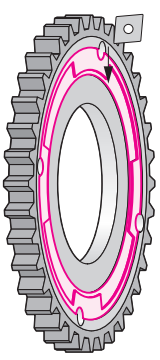
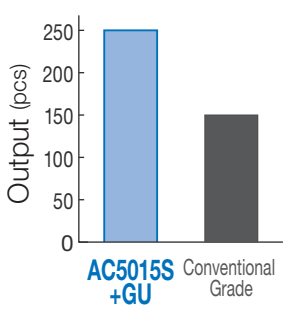
Inconel 713C Automotive Component <span style="float: right;">S</span>	Inconel 718 Aerospace Component <span style="float: right;">S</span>												
<p>Suppresses wear for 2x longer tool life</p>  <p>Output (pcs)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs)</th> </tr> <tr> <td>AC5015S +EX</td> <td>10</td> </tr> <tr> <td>Conventional Grade</td> <td>5</td> </tr> </table>	Material	Output (pcs)	AC5015S +EX	10	Conventional Grade	5	<p>Good wear resistance with 2x longer tool life</p>  <p>Output (pcs)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs)</th> </tr> <tr> <td>AC5015S +EG</td> <td>2</td> </tr> <tr> <td>Competitor's Product B (S10PVD)</td> <td>1</td> </tr> </table>	Material	Output (pcs)	AC5015S +EG	2	Competitor's Product B (S10PVD)	1
Material	Output (pcs)												
AC5015S +EX	10												
Conventional Grade	5												
Material	Output (pcs)												
AC5015S +EG	2												
Competitor's Product B (S10PVD)	1												
<p>Tool : CNMG120408N-EX (AC5015S) Cutting Conditions : <math>v_c=100\text{m/min}</math> <math>f=0.12\text{mm/rev}</math> <math>a_p=0.3\text{mm}</math> Wet</p>	<p>Tool : SNMG120408N-EG (AC5015S) Cutting Conditions : <math>v_c=50\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=2.0\text{mm}</math> Wet</p>												

Inconel 625 Aerospace Component <span style="float: right;">S</span>	Inconel 718 Aerospace Component <span style="float: right;">S</span>												
<p>Good wear resistance with 1.6x longer tool life</p>  <p>Output (pcs)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs)</th> </tr> <tr> <td>AC5015S +GU</td> <td>80</td> </tr> <tr> <td>Competitor's Product C (S10PVD)</td> <td>50</td> </tr> </table>	Material	Output (pcs)	AC5015S +GU	80	Competitor's Product C (S10PVD)	50	<p>Good wear resistance with 2x longer tool life</p>  <p>Output (pcs)</p> <table border="1"> <tr> <th>Material</th> <th>Output (pcs)</th> </tr> <tr> <td>AC5015S +EG</td> <td>2</td> </tr> <tr> <td>Competitor's Product D (S10PVD)</td> <td>1</td> </tr> </table>	Material	Output (pcs)	AC5015S +EG	2	Competitor's Product D (S10PVD)	1
Material	Output (pcs)												
AC5015S +GU	80												
Competitor's Product C (S10PVD)	50												
Material	Output (pcs)												
AC5015S +EG	2												
Competitor's Product D (S10PVD)	1												
<p>Tool : CNMG120408N-GU (AC5015S) Cutting Conditions : <math>v_c=50\text{m/min}</math> <math>f=0.3\text{mm/rev}</math> <math>a_p=0.5\text{mm}</math> Wet</p>	<p>Tool : CNMG120408N-EG (AC5015S) Cutting Conditions : <math>v_c=37\text{m/min}</math> <math>f=0.2\text{mm/rev}</math> <math>a_p=1.4\text{mm}</math> Wet</p>												



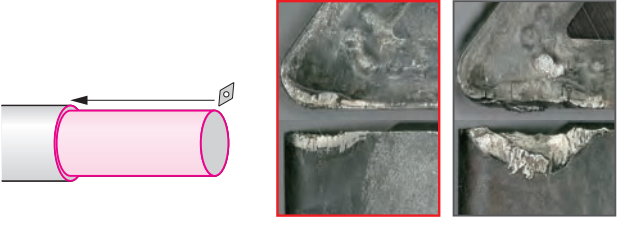
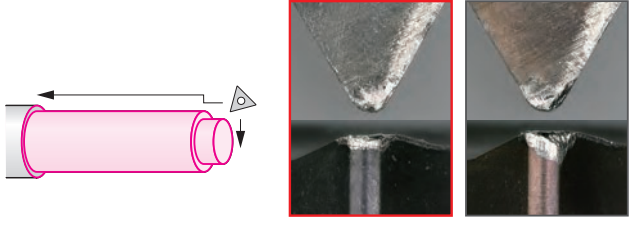
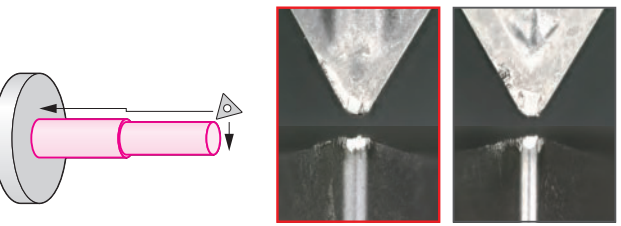
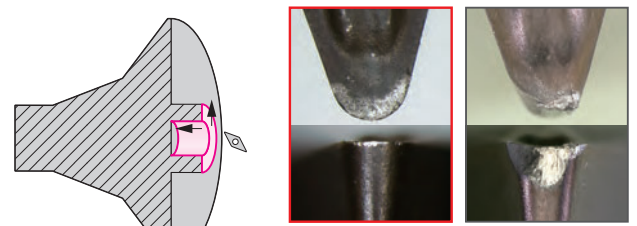
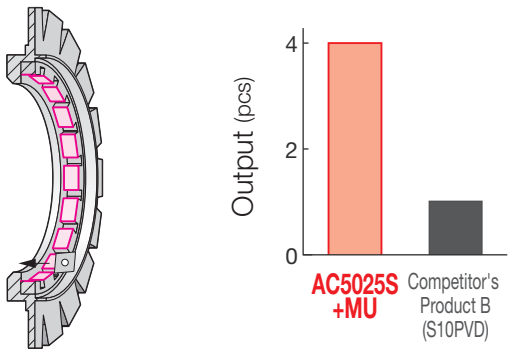
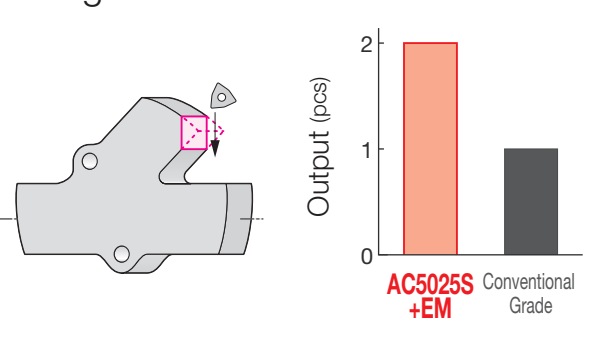
# AC5005S/AC5015S/AC5025S

## Application Examples of AC5015S

<p><b>SUJ2 Automotive Components</b> <span style="border: 1px solid black; padding: 0 2px;">P</span></p> <p>Suppresses wear for 2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +FY    Competitor's Product E (P10PVD)</p> <p>Tool : TNGG160402R-FY (AC5015S) Cutting Conditions : <math>v_c=120\text{m/min}</math> <math>f=0.1\text{mm/rev}</math> <math>a_p=0.3\text{mm}</math> Wet</p>	<p><b>Alloy Steel Industrial Machine Component</b> <span style="border: 1px solid black; padding: 0 2px;">P</span></p> <p>Stable machining with 1.6x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +EM    Competitor's Product F (S10PVD)</p> <p>Tool : CNMG120408N-EM (AC5015S) Cutting Conditions : <math>v_c=120\text{m/min}</math> <math>f=0.25\text{mm/rev}</math> <math>a_p=0.30\text{mm}</math> Wet</p>
<p><b>SCS13A Stainless Cast Steel Valve Component</b> <span style="border: 1px solid black; padding: 0 2px;">M</span></p> <p>Suppresses wear for 2.2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +EM    Competitor's Product G (S10PVD)</p> <p>Tool : CNMG120408N-EM (AC5015S) Cutting Conditions : <math>v_c=90\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=2.00\text{mm}</math> Wet</p>	<p><b>FCD450 Automotive Component</b> <span style="border: 1px solid black; padding: 0 2px;">K</span></p> <p>Suppresses wear for 2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +SD    Conventional Grade</p> <p>Tool : CPGT090308N-SD (AC5015S) Cutting Conditions : <math>v_c=210\text{m/min}</math> <math>f=0.19\text{mm/rev}</math> <math>a_p=0.25\text{mm}</math> Wet</p>
<p><b>Hardened Steel Automotive Component (47HRC)</b> <span style="border: 1px solid black; padding: 0 2px;">H</span></p> <p>Suppresses wear for 2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +SI    Conventional Grade</p> <p>SumiSmall</p> <p>Tool : DCGT070202MN-SI (AC5015S) Cutting Conditions : <math>v_c=70\text{m/min}</math> <math>f=0.03\text{mm/rev}</math> <math>a_p=0.80\text{mm}</math> Wet</p>	<p><b>Sintered Ferrous Alloy Automotive Component</b> <span style="border: 1px solid black; padding: 0 2px;">Sintered Alloy</span></p> <p>Suppresses notch wear for 1.7x longer tool life</p>   <p>Output (pcs)</p> <p>AC5015S +GU    Conventional Grade</p> <p>Tool : CNMG120408N-GU (AC5015S) Cutting Conditions : <math>v_c=170\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=0.30\text{mm}</math> Wet</p>

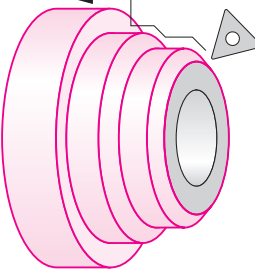
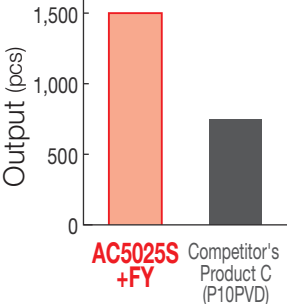
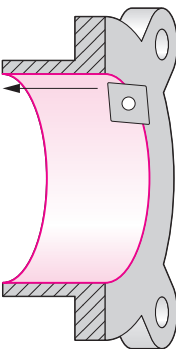
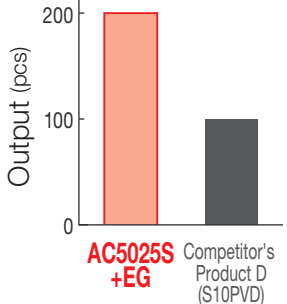
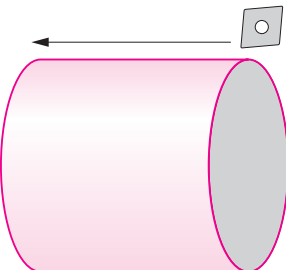
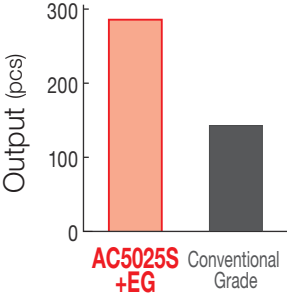
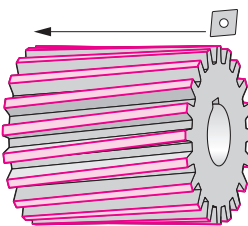
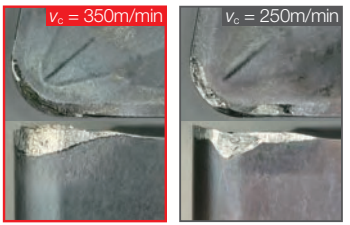
# AC5005S/AC5015S/AC5025S

## Application Examples of AC5025S

<p><b>Inconel 718 Aerospace Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Suppresses fractures for 1.7x longer tool life</p>  <p><b>AC5025S+EG</b> (2.5 pcs/C)      Conventional Grade (1.5 pcs/C)</p> <p>Tool : DNMG150408N-EG (AC5025S) Cutting Conditions : <math>v_c=35\text{m/min}</math> <math>f=0.1\text{mm/rev}</math> <math>a_p=1.6\text{mm}</math> Wet</p>	<p><b>Inconel 718 Aerospace Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Suppresses wear for 1.5x longer tool life</p>  <p><b>AC5025S+FY</b> (18 pcs/C)      Conventional Grade (12 pcs/C)</p> <p>Tool : TNGG160402R-FY (AC5025S) Cutting Conditions : <math>v_c=37\text{m/min}</math> <math>f=0.1\text{mm/rev}</math> <math>a_p=0.1\text{mm}</math> Wet</p>
<p><b>Ni-Based Heat-Resistant Alloy Automotive Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Enables stable machining with 2x longer tool life</p>  <p><b>AC5025S+SU</b> (200 pcs/C)      Comp's A (S10 PVD) (100 pcs/C)</p> <p>Tool : TNGG160402N-SU (AC5025S) Cutting Conditions : <math>v_c=70\text{m/min}</math> <math>f=0.1\text{mm/rev}</math> <math>a_p=0.15\text{mm}</math> Wet</p>	<p><b>Inconel Automotive Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Suppresses wear and extends tool life</p>  <p><b>AC5025S+SU</b> (200 pcs/C)      Conventional Grade (200 pcs/C)</p> <p style="text-align: right;"><b>SumiSmall</b></p> <p>Tool : VCMT080204N-SU (AC5025S) Cutting Conditions : <math>v_c=49\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=0.5\text{mm}</math> Wet</p>
<p><b>Hastelloy Aerospace Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Suppresses wear for 4x longer tool life</p>  <p><b>AC5025S+MU</b>      Competitor's Product B (S10PVD)</p> <p>Tool : CNMG120412N-MU (AC5025S) Cutting Conditions : <math>v_c=100\text{m/min}</math> <math>f=0.3\text{mm/rev}</math> <math>a_p=3.0\text{mm}</math> Wet</p>	<p><b>Fe-Based Heat-Resistant Alloy Valve Component</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">S</span></p> <p>Enables stable machining with 2x longer tool life</p>  <p><b>AC5025S+EM</b>      Conventional Grade</p> <p>Tool : WNMG080408N-EM (AC5025S) Cutting Conditions : <math>v_c=90\text{m/min}</math> <math>f=0.15\text{mm/rev}</math> <math>a_p=1.5\text{mm}</math> Wet</p>

# AC5005S/AC5015S/AC5025S






















## Application Examples of AC5025S

<p><b>SUJ2 Industrial Machine Component</b> <span style="background-color: #000080; color: white; padding: 2px;">P</span></p> <p>Good wear resistance with 2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5025S +FY    Competitor's Product C (P10PVD)</p> <p>Tool : TNGG160402R-FY (AC5025S) Cutting Conditions : <math>v_c=110\text{m/min}</math> <math>f=0.1\text{mm/rev}</math> <math>a_p=1.5\text{mm}</math> Wet</p>	<p><b>Heat Resistant Stainless Steel Automotive Component</b> <span style="background-color: #000080; color: white; padding: 2px;">M</span></p> <p>Stable machining with 2x longer tool life</p>   <p>Output (pcs)</p> <p>AC5025S +EG    Competitor's Product D (S10PVD)</p> <p>Tool : CNMG120408N-EG (AC5025S) Cutting Conditions : <math>v_c=80\text{m/min}</math> <math>f=0.3\text{mm/rev}</math> <math>a_p=2.0\text{mm}</math> Wet</p>
<p><b>SUS316 Industrial Machine Component</b> <span style="background-color: #000080; color: white; padding: 2px;">M</span></p> <p>Suppresses wear for 1.5x longer tool life</p>   <p>Output (pcs)</p> <p>AC5025S +EG    Conventional Grade</p> <p>Tool : CNMG120408N-EG (AC5025S) Cutting Conditions : <math>v_c=120\text{m/min}</math> <math>f=0.3\text{mm/rev}</math> <math>a_p=1.5\text{mm}</math> Wet</p>	<p><b>Hardened Steel Industrial Machine Component (49HRC)</b> <span style="background-color: #000080; color: white; padding: 2px;">H</span></p> <p>Same tool life achieved even at 1.4x higher cutting speed</p>   <p><math>v_c = 350\text{m/min}</math>    <math>v_c = 250\text{m/min}</math></p> <p>AC5025S+MU (After cutting for 65 minutes)    Conv. Tool (After cutting for 60 minutes)</p> <p>Tool : CNMG120412N-MU (AC5025S) Cutting Conditions : <math>v_c=350\text{m/min}</math> <math>f=0.16\text{mm/rev}</math> <math>a_p=1.50\text{mm}</math> Dry</p>

















# AC5005S/AC5015S/AC5025S

## Negative 80° Diamond Type












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		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius					
 FL	CNMG 120404N-FL	●	●	●	12.7	4.76	5.16	0.4					
	120408N-FL	●	●	●				0.8					
 SU	CNMG 120402N-SU	●	●	●	12.7	4.76	5.16	0.2					
	120404N-SU	●	●	●				0.4					
	120408N-SU	●	●	●				0.8					
	120412N-SU	●	●	●				1.2					
 SU	CNGG 120402N-SU	●	●	●	12.7	4.76	5.16	0.2					
	120404N-SU	●	●	●				0.4					
	120408N-SU	●	●	●				0.8					
	120412N-SU	●	●	●				1.2					
 EF	CNMG 090404N-EF	●	●	●	9.525	4.76	3.81	0.4					
	090408N-EF	●	●	●				0.8					
	CNMG 120404N-EF	●	●	●				12.7	4.76	5.16	0.4		
	120408N-EF	●	●	●							0.8		
 EF	120412N-EF	●	●	●	12.7	4.76	5.16	1.2					
	CNGG 120402N-EF	●	●	●				12.7	4.76	5.16	0.2		
	120404N-EF	●	●	●							0.4		
	120408N-EF	●	●	●							0.8		
 EX	CNMG 120404N-EX	●	●	●	12.7	4.76	5.16				0.4		
	120408N-EX	●	●	●				0.8					
	120412N-EX	●	●	●				1.2					
	CNMG 160612N-EX	●	●	●				15.875	6.35	6.35	1.2		
 EX	CNMG 190612N-EX	●	●	●	19.05	6.35	7.94	1.2					
	 UP	CNMG 120404N-UP	●	●	●	12.7	4.76	5.16	0.4				
		120408N-UP	●	●	●				0.8				
		120412N-UP	●	●	●				1.2				
 GU	CNMG 120404N-GU	●	●	●	12.7	4.76	5.16	0.4					
	120408N-GU	●	●	●				0.8					
	120412N-GU	●	●	●				1.2					
	 EG	CNMG 090408N-EG	●	●				●	9.525	4.76	3.81	0.8	
090412N-EG		●	●	●	1.2								
CNMG 120404N-EG		●	●	●	12.7	4.76	5.16	0.4					
120408N-EG		●	●	●				0.8					
 EG		120412N-EG	●	●	●	12.7	4.76	5.16	1.2				
		CNMG 160608N-EG	●	●	●				15.875	6.35	6.35	0.8	
		160612N-EG	●	●	●							1.2	
		160616N-EG	●	●	●				19.05	6.35	7.94	1.6	
		CNMG 190612N-EG	●	●	●							1.2	
		190616N-EG	●	●	●				1.6				
 MU	CNMG 120408N-MU	●	●	●	12.7	4.76	5.16	0.8					
	120412N-MU	●	●	●				1.2					
	120416N-MU	●	●	●				1.6					
	 MU	CNMG 160608N-MU	●	●	●	15.875	6.35	6.35	0.8				
		160612N-MU	●	●	●				1.2				
		160616N-MU	●	●	●				1.6				
		 MU	CNMG 190612N-MU	●	●				●	19.05	6.35	7.94	1.2
			190616N-MU	●	●				●				1.6
			190624N-MU	●	●				●				2.4
	CNMG 250924N-MU	●	●	●	25.4	9.52	9.12	2.4					
 EM	CNMG 120408N-EM	●	●	●	12.7	4.76	5.16	0.8					
	120412N-EM	●	●	●				1.2					
	120416N-EM	●	●	●				1.6					
	 EM	CNMG 160608N-EM	●	●	●	15.875	6.35	6.35	0.8				
		160612N-EM	●	●	●				1.2				
		160616N-EM	●	●	●				1.6				
 EM		CNMG 190612N-EM	●	●	●				19.05	6.35	7.94	1.2	
	190616N-EM	●	●	●	1.6								
	190624N-EM	●	●	●	2.4								
	CNMG 250924N-EM	●	●	●	25.4	9.52	9.12	2.4					
 UZ	CNMG 120408N-UZ	●	●	●	12.7	4.76	5.16	0.8					
	120412N-UZ	●	●	●				1.2					
 MP	CNMM 120408N-MP	●	●	●	12.7	4.76	5.16	0.8					
	120412N-MP	●	●	●				1.2					
	120416N-MP	●	●	●				1.6					
	 MP	CNMM 160608N-MP	●	●	●	15.875	6.35	6.35	0.8				
		160612N-MP	●	●	●				1.2				
		160616N-MP	●	●	●				1.6				
		 MP	CNMM 190608N-MP	●	●				●	19.05	6.35	7.94	0.8
			190612N-MP	●	●				●				1.2
			190616N-MP	●	●				●				1.6
CNMM 190624N-MP	●	●	●	2.4									
CNMA 120408	●	●	●	12.7	4.76	5.16	0.8						

## Negative 55° Diamond Type















Shape	Cat. No.	Stock			Dimensions (mm)						
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius			
 SU	DNMG 150402N-SU	●	●	●	12.7	4.76	5.16	0.2			
	150404N-SU	●	●	●				0.4			
	150408N-SU	●	●	●				0.8			
 SU	DNGG 150402N-SU	●	●	●	12.7	4.76	5.16	0.2			
	150404N-SU	●	●	●				0.4			
	150408N-SU	●	●	●				0.8			
	150412N-SU	●	●	●				1.2			
 EF	DNMG 110404N-EF	●	●	●	9.525	4.76	3.81	0.4			
	110408N-EF	●	●	●				0.8			
	110412N-EF	●	●	●				1.2			
	 EF	DNMG 150404N-EF	●	●	●	12.7	4.76	5.16	0.4		
		150408N-EF	●	●	●				0.8		
		150412N-EF	●	●	●				1.2		
DNMG 150604N-EF		●	●	●	12.7				6.35	5.16	0.4
150608N-EF	●	●	●	0.8							
 EF	150612N-EF	●	●	●	12.7	4.76	5.16	1.2			
	DNGG 150404N-EF	●	●	●				12.7	4.76	5.16	0.4
	150408N-EF	●	●	●							0.8
	 EX	DNMG 150404N-EX	●	●				●	12.7	4.76	5.16
150408N-EX		●	●	●	0.8						
150412N-EX		●	●	●	1.2						
 UP		DNMG 150404N-UP	●	●	●	12.7	4.76	5.16			
	150408N-UP	●	●	●	0.8						
	150412N-UP	●	●	●	1.2						
 GU	DNMG 150404N-GU	●	●	●	12.7	4.76	5.16	0.4			
	150408N-GU	●	●	●				0.8			
	150412N-GU	●	●	●				1.2			
 EG	DNMG 110408N-EG	●	●	●	9.525	4.76	3.81	0.8			
	110412N-EG	●	●	●				1.2			
	DNMG 150404N-EG	●	●	●				12.7	4.76	5.16	0.4
	150408N-EG	●	●	●	0.8						
	 EG	150412N-EG	●	●	●	12.7	4.76	5.16	1.2		
		DNMG 150604N-EG	●	●	●				12.7	6.35	5.16
150608N-EG		●	●	●	0.8						
150612N-EG		●	●	●	1.2						
 MU	DNMG 150408N-MU	●	●	●	12.7	4.76	5.16	0.8			
	150412N-MU	●	●	●				1.2			
	150416N-MU	●	●	●				1.6			
 EM	DNMG 150408N-EM	●	●	●	12.7	4.76	5.16	0.8			
	150412N-EM	●	●	●				1.2			
	150416N-EM	●	●	●				1.6			
	DNMG 150608N-EM	●	●	●				12.7	6.35	5.16	0.8
150612N-EM	●	●	●	1.2							
 UZ	DNMG 150408N-UZ	●	●	●	12.7	4.76	5.16	0.8			
	150412N-UZ	●	●	●				1.2			
 DNGA	DNGA 150404	●	●	●	12.7	4.76	5.16	0.4			

# AC5005S/AC5015S/AC5025S

## ○ Negative Square Type

Shape	Cat. No.	Stock			Dimensions (mm)						
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius			
 SU	SNMG 120408N-SU	●	●	●	12.7	4.76	5.16	0.8			
	SNMG 120404N-EF 120408N-EF	●	●	●	12.7	4.76	5.16	0.4 0.8			
 EX	SNMG 120404N-EX	●	●	●	12.7	4.76	5.16	0.4			
	120408N-EX	●	●	●				0.8			
	120412N-EX	●	●	●				1.2			
 UP	SNMG 150612N-EX	●	●	●	15.875	6.35	6.35	1.2			
	SNMG 190612N-EX	●	●	●	19.05	6.35	7.94	1.2			
	SNMG 120408N-UP 120412N-UP	●	●	●	12.7	4.76	5.16	0.8 1.2			
 GU	SNMG 120404N-GU	●	●	●	12.7	4.76	5.16	0.4			
	120408N-GU	●	●	●				0.8			
	120412N-GU	●	●	●				1.2			
 EG	SNMG 120404N-EG	●	●	●	12.7	4.76	5.16	0.4			
	120408N-EG	●	●	●				0.8			
	120412N-EG	●	●	●				1.2			
	SNMG 150608N-EG	●	●	●				15.875	6.35	6.35	0.8
	150612N-EG	●	●	●							1.2
	150616N-EG	●	●	●							1.6
 UM	SNMG 190612N-EG	●	●	●	19.05	6.35	7.94	1.2			
	190616N-EG	●	●	●	19.05	6.35	7.94	1.6			
 MU	SNGG 120408R-UM 120408L-UM	●	●	●	12.7	4.76	5.16	0.8 0.8			
	SNMG 120408N-MU 120412N-MU	●	●	●	12.7	4.76	5.16	0.8 1.2			
 EM	SNMG 150608N-MU	●	●	●	15.875	6.35	6.35	0.8			
	150612N-MU	●	●	●				1.2			
	150616N-MU	●	●	●				1.6			
	SNMG 190612N-MU	●	●	●				19.05	6.35	7.94	1.2
	190616N-MU	●	●	●							1.6
	190624N-MU	●	●	●							2.4
 UZ	SNMG 250924N-MU	●	●	●	25.4	9.52	9.12	2.4			
	SNMG 120408N-EM 120412N-EM	●	●	●	12.7	4.76	5.16	0.8 1.2			
	SNMG 150608N-EM	●	●	●	15.875	6.35	6.35	0.8			
	150612N-EM	●	●	●				1.2			
	150616N-EM	●	●	●				1.6			
	 MP	SNMG 190612N-EM	●	●	●	19.05	6.35	7.94	1.2		
190616N-EM		●	●	●	1.6						
190624N-EM		●	●	●	2.4						
SNMG 250924N-EM		●	●	●	25.4				9.52	9.12	2.4
 HM	SNMG 120408N-UZ 120412N-UZ	●	●	●	12.7	4.76	5.16	0.8 1.2			
	SNMM 120408N-MP	●	●	●	12.7	4.76	5.16	0.8			
	120412N-MP	●	●	●				1.2			
	120416N-MP	●	●	●				1.6			
	SNMM 190612N-MP	●	●	●				1.2			
190616N-MP	●	●	●	1.6							








## △ Negative Triangular Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	TNMG 160402N-SU	●	●	●	9.525	4.76	3.81	0.2
	160404N-SU	●	●	●				0.4
	160408N-SU	●	●	●				0.8
 SU	TNMG 160412N-SU	●	●	●	9.525	4.76	3.81	1.2
	TNGG 160402N-SU	●	●	●				0.2
	160404N-SU	●	●	●				0.4
 SU	160408N-SU	●	●	●	9.525	4.76	3.81	0.8
	TNMG 160404N-EF	●	●	●				0.4
	160408N-EF	●	●	●				0.8
 FY	TNGG 160402R-FY	●	●	●	9.525	4.76	3.81	0.2
	160402L-FY	●	●	●				0.2
	160404R-FY	●	●	●				0.4
 FX	160404L-FY	●	●	●	9.525	4.76	3.81	0.4
	TNMG 160402R-FX	●	●	●				0.2
	160402L-FX	●	●	●				0.2
 FX	160404R-FX	●	●	●	9.525	4.76	3.81	0.4
	160404L-FX	●	●	●				0.4
	TNMG 160404N-EX	●	●	●				9.525
160408N-EX	●	●	●	0.8				
160412N-EX	●	●	●	1.2				
 UP	TNMG 160404N-UP	●	●	●	9.525	4.76	3.81	0.4
	160408N-UP	●	●	●				0.8
	160412N-UP	●	●	●				1.2
 GU	TNMG 220408N-UP	●	●	●	12.7	4.76	5.16	0.8
	TNMG 160404N-GU	●	●	●	9.525	4.76	3.81	0.4
	160408N-GU	●	●	●				0.8
160412N-GU	●	●	●	1.2				
 EG	TNMG 160404N-EG	●	●	●	9.525	4.76	3.81	0.4
	160408N-EG	●	●	●				0.8
	160412N-EG	●	●	●				1.2
 MU	TNMG 160408N-MU	●	●	●	9.525	4.76	3.81	0.8
	160412N-MU	●	●	●				1.2
	TNMG 220408N-MU	●	●	●				12.7
 EM	TNMG 160408N-EM	●	●	●	9.525	4.76	3.81	0.8
	160412N-EM	●	●	●				1.2
	TNMG 330924N-EM	●	●	●				19.05
 HM	TNMG 160404R-HM	●	●	●	9.525	4.76	3.81	0.4
	160404L-HM	●	●	●				0.4
	160408R-HM	●	●	●				0.8
	160408L-HM	●	●	●				0.8
 TNMA	TNMA 160404	●	●	●	9.525	4.76	3.81	0.4
	160408	●	●	●				0.8
 TNGA	TNGA 160404	●	●	●	9.525	4.76	3.81	0.4


● mark: Standard stocked item Blank: Made-to-order item

# AC5005S/AC5015S/AC5025S










## Negative 35° Diamond Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	VNMG 160402N-SU	●	●	●				0.2
	160404N-SU	●	●	●	9.525	4.76	3.81	0.4
	160408N-SU	●	●	●				0.8
 EF	VNMG 160402N-EF	●	●	●				0.2
	160404N-EF	●	●	●	9.525	4.76	3.81	0.4
	160408N-EF	●	●	●				0.8
 VNGG	160402N-EF	●	●	●				0.2
	160404N-EF	●	●	●	9.525	4.76	3.81	0.4
 EX	VNMG 160404N-EX	●	●	●				0.4
	160408N-EX	●	●	●	9.525	4.76	3.81	0.8
 GU	VNMG 160404N-GU	●	●	●				0.4
	160408N-GU	●	●	●	9.525	4.76	3.81	0.8
	160412N-GU	●	●	●				1.2
 EG	VNMG 160404N-EG	●	●	●				0.4
	160408N-EG	●	●	●	9.525	4.76	3.81	0.8
	160412N-EG	●	●	●				1.2
 UZ	VNMG 160404N-UZ	●	●	●				0.4
	160408N-UZ	●	●	●	9.525	4.76	3.81	0.8

## Negative Square Type (Without Hole)

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SNMN	120408	●	●	●				0.8
	120412	●	●	●	12.7	4.76	—	1.2
	120416	●	●	●				1.6











## Negative Trigon Type

Shape	Cat. No.	Stock			Dimensions (mm)			
		AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
 SU	WNMG080404N-SU	●	●	●				0.4
	080408N-SU	●	●	●	12.7	4.76	5.16	0.8
	080412N-SU	●	●	●				1.2
 EF	WNMG060404N-EF	●	●	●				0.4
	060408N-EF	●	●	●	9.525	4.76	3.81	0.8
	WNMG080404N-EF	●	●	●				0.4
 EX	080408N-EF	●	●	●	12.7	4.76	5.16	0.8
	WNMG080404N-EX	●	●	●				0.4
	080408N-EX	●	●	●	12.7	4.76	5.16	0.8
 UP	080412N-EX	●	●	●				1.2
	WNMG080408N-UP	●	●	●				0.8
	080412N-UP	●	●	●	12.7	4.76	5.16	1.2
 GU	WNMG080404N-GU	●	●	●				0.4
	080408N-GU	●	●	●	12.7	4.76	5.16	0.8
	080412N-GU	●	●	●				1.2
 EG	WNMG060408N-EG	●	●	●				0.8
	060412N-EG	●	●	●	9.525	4.76	3.81	1.2
	WNMG080404N-EG	●	●	●				0.4
 MU	080408N-EG	●	●	●	12.7	4.76	5.16	0.8
	080412N-EG	●	●	●				1.2
	WNMG080408N-MU	●	●	●				0.8
 EM	080412N-MU	●	●	●	12.7	4.76	5.16	1.2
	WNMG080408N-EM	●	●	●				0.8
 UZ	080412N-EM	●	●	●	12.7	4.76	5.16	1.2
	WNMG080404N-UZ	●	●	●				0.4
	080408N-UZ	●	●	●	12.7	4.76	5.16	0.8
	080412N-UZ	●	●	●				1.2











# AC5005S/AC5015S/AC5025S

## Positive 80° Diamond Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)								
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius					
	7°	CCGT 060201MN-FF	●	●	●	6.35	2.38	2.8	<0.1					
		060202MN-FF	●	●	●				<0.2					
		060204MN-FF	●	●	●				<0.4					
	7°	CCGT 09T301MN-FF	●	●	●	9.525	3.97	4.4	<0.1					
		09T302MN-FF	●	●	●				<0.2					
		09T304MN-FF	●	●	●				<0.4					
	7°	CCGT 0602003R-FX	●	●	●	6.35	2.38	2.8	0.03					
		0602003L-FX	●	●	●				0.03					
		060201R-FX	●	●	●				0.1					
		060201L-FX	●	●	●				0.1					
		060202R-FX	●	●	●				0.2					
		060202L-FX	●	●	●				0.2					
		060204R-FX	●	●	●				0.4					
	060204L-FX	●	●	●	0.4									
	7°	CCGT 09T3003R-FX	●	●	●	9.525	3.97	4.4	0.03					
		09T3003L-FX	●	●	●				0.03					
		09T301R-FX	●	●	●				0.1					
		09T301L-FX	●	●	●				0.1					
		09T302R-FX	●	●	●				0.2					
		09T302L-FX	●	●	●				0.2					
		09T304R-FX	●	●	●				0.4					
09T304L-FX		●	●	●	0.4									
	7°	CCGT 03X1003R-FYS	●	●	●	3.5	1.4	1.8	0.03					
		03X1003L-FYS	●	●	●				0.03					
		03X101R-FYS	●	●	●				0.1					
		03X101L-FYS	●	●	●				0.1					
		03X102R-FYS	●	●	●				0.2					
		03X102L-FYS	●	●	●				0.2					
		03X104R-FYS	●	●	●				0.4					
	03X104L-FYS	●	●	●	0.4									
	7°	CCGT 04X1003R-FYS	●	●	●	4.3	1.8	2.3	0.03					
		04X1003L-FYS	●	●	●				0.03					
		04X101R-FYS	●	●	●				0.1					
		04X101L-FYS	●	●	●				0.1					
		04X102R-FYS	●	●	●				0.2					
		04X102L-FYS	●	●	●				0.2					
		04X104R-FYS	●	●	●				0.4					
04X104L-FYS		●	●	●	0.4									
	7°	CCGT 03X101R-FY	●	●	●	3.5	1.4	1.8	0.1					
		03X101L-FY	●	●	●				0.1					
		03X102R-FY	●	●	●				0.2					
		03X102L-FY	●	●	●				0.2					
		03X104R-FY	●	●	●				0.4					
		03X104L-FY	●	●	●				0.4					
	7°	CCGT 04X101R-FY	●	●	●	4.3	1.8	2.3	0.1					
		04X101L-FY	●	●	●				0.1					
		04X102R-FY	●	●	●				0.2					
		04X102L-FY	●	●	●				0.2					
		04X104R-FY	●	●	●				0.4					
		04X104L-FY	●	●	●				0.4					
			7°	CCMT 060202N-SU	●				●	●	6.35	2.38	2.8	0.2
				060204N-SU	●				●	●				0.4
				060208N-SU	●				●	●				0.8
7°	CCMT 09T302N-SU		●	●	●	9.525	3.97	4.4	0.2					
	09T304N-SU		●	●	●				0.4					
	09T308N-SU		●	●	●				0.8					
7°	CCMT 120404N-SU		●	●	●	12.7	4.76	5.5	0.4					
	120408N-SU		●	●	●				0.8					
			7°	CCGT 060201MN-SI	●				●	●	6.35	2.38	2.8	<0.1
060202MN-SI				●	●	●	<0.2							
060204MN-SI				●	●	●	<0.4							
7°			CCGT 09T301MN-SI	●	●	●	9.525	3.97	4.4	<0.1				
			09T302MN-SI	●	●	●				<0.2				
			09T304MN-SI	●	●	●				<0.4				
	7°		CCMT 060204N-GU	●	●	●	6.35	2.38	2.8	0.4				
		060208N-GU	●	●	●	0.8								
	11°	CPGT 080202N-SD	●	●	●	7.94	2.38	3.4	0.2					
		080204N-SD	●	●	●				0.4					
		080208N-SD	●	●	●				0.8					
	11°	CPGT 090302N-SD	●	●	●	9.525	3.18	4.4	0.2					
		090304N-SD	●	●	●				0.4					
		090308N-SD	●	●	●				0.8					
	11°	CPGT 120402N-SD	●	●	●	12.7	4.76	5.5	0.2					
		120404N-SD	●	●	●				0.4					
		120408N-SD	●	●	●				0.8					
	11°	CPMT 080204N-SU	●	●	●	7.94	2.38	3.4	0.4					
		080208N-SU	●	●	●				0.8					
		090304N-SU	●	●	●				0.4					
		090308N-SU	●	●	●	9.525	3.18	4.4	0.8					

## Positive 55° Diamond Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)						
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius			
	7°	DCGT 070201MN-FF	●	●	●	6.35	2.38	2.8	<0.1			
		070202MN-FF	●	●	●				<0.2			
		070204MN-FF	●	●	●				<0.4			
	7°	DCGT 11T301MN-FF	●	●	●	9.525	3.97	4.4	<0.1			
		11T302MN-FF	●	●	●				<0.2			
		11T304MN-FF	●	●	●				<0.4			
	7°	DCGT 070201MN-FC	●	●	●	6.35	2.38	2.8	<0.1			
		070202MN-FC	●	●	●				<0.2			
		070204MN-FC	●	●	●				<0.4			
	7°	DCGT 11T301MN-FC	●	●	●	9.525	3.97	4.4	<0.1			
		11T302MN-FC	●	●	●				<0.2			
		11T304MN-FC	●	●	●				<0.4			
	7°	DCGT 0702003R-FX	●	●	●	6.35	2.38	2.8	0.03			
		0702003L-FX	●	●	●				0.03			
		070201R-FX	●	●	●				0.1			
		070201L-FX	●	●	●				0.1			
		070202R-FX	●	●	●				0.2			
		070202L-FX	●	●	●				0.2			
	7°	DCGT 11T3003R-FX	●	●	●	9.525	3.97	4.4	0.03			
		11T3003L-FX	●	●	●				0.03			
		11T301R-FX	●	●	●				0.1			
		11T301L-FX	●	●	●				0.1			
		11T302R-FX	●	●	●				0.2			
		11T302L-FX	●	●	●				0.2			
		11T304R-FX	●	●	●				0.4			
		11T304L-FX	●	●	●				0.4			
			7°	DCGT 0702003R-FYS	●				●	●	6.35	2.38
0702003L-FYS	●			●	●	0.03						
070201R-FYS	●			●	●	0.1						
070201L-FYS	●			●	●	0.1						
070202R-FYS	●			●	●	0.2						
070202L-FYS	●			●	●	0.2						
070204R-FYS	●			●	●	0.4						
070204L-FYS	●		●	●	0.4							
7°	DCGT 11T3003R-FYS		●	●	●	9.525	3.97	4.4	0.03			
	11T3003L-FYS		●	●	●				0.03			
	11T301R-FYS		●	●	●				0.1			
	11T301L-FYS		●	●	●				0.1			
	11T302R-FYS		●	●	●				0.2			
	11T302L-FYS		●	●	●				0.2			
	11T304R-FYS		●	●	●				0.4			
	11T304L-FYS	●	●	●	0.4							
	7°	DCGT 0702003R-FY	●	●	●	6.35	2.38	2.8	0.03			
		0702003L-FY	●	●	●				0.03			
		070201R-FY	●	●	●				0.1			
		070201L-FY	●	●	●				0.1			
		070202R-FY	●	●	●				0.2			
		070202L-FY	●	●	●				0.2			
	7°	DCGT 070204R-FY	●	●	●	9.525	3.97	4.4	0.4			
		070204L-FY	●	●	●				0.4			
		DCGT 11T3003R-FY	●	●	●				9.525	3.97	4.4	0.03
		11T3003L-FY	●	●	●							0.03
		11T301R-FY	●	●	●							0.1
		11T301L-FY	●	●	●							0.1
		11T302R-FY	●	●	●							0.2
		11T302L-FY	●	●	●							0.2
		11T304R-FY	●	●	●							0.4
11T304L-FY	●	●	●	0.4								
	7°	DCMT 070202N-SU	●	●	●	6.35	2.38	2.8				0.2
		070204N-SU	●	●	●				0.4			
		070208N-SU	●	●	●				0.8			
	7°	DCMT 11T302N-SU	●	●	●	9.525	3.97	4.4	0.2			
		11T304N-SU	●	●	●				0.4			
		11T308N-SU	●	●	●				0.8			
	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		
			11T308MN-SI	●	●	●	9.525	3.97	4.4	<0.8		



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

● mark: Standard stocked item



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

# AC5005S/AC5015S/AC5025S










## Positive Round Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)			
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	RCMX 1204M0N-RP	●	●	●	12.0	4.76	4.2	—
		RCMX 2006M0N-RP	●	●	●	20.0	6.35	6.5	—
	11°	RPGW 0803M0	●	●	●	8.0	3.18	3.3	—
		RPGW 1004M0	●	●	●	10.0	4.76	3.8	—
		RPGW 1204M0	●	●	●	12.0	4.76	4.3	—













## Positive Square Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)			
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius
	7°	SCGT 09T302R-FX	●	●	●	9.525	3.97	4.4	0.2
		09T302L-FX	●	●	●				0.2
		09T304R-FX	●	●	●				0.4
		09T304L-FX	●	●	●	0.4			
		SCGT 120404R-FX	●	●	●	12.7	4.76	5.5	0.4
120404L-FX	●	●	●	0.4					
	7°	SCMT 09T304N-SU	●	●	●	9.525	3.97	4.4	0.4
		09T308N-SU	●	●	●				0.8

## Positive Triangular Type

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)						
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius			
	5°	TBGT 060102R-FX	●	●	●	3.97	1.59	2.2	0.2			
		060102L-FX	●	●	●				0.2			
		060104R-FX	●	●	●				0.4			
		060104L-FX	●	●	●				0.4			
	5°	TBGT 060101R-FY	●	●	●	3.97	1.59	2.2	0.1			
		060101L-FY	●	●	●				0.1			
		060102R-FY	●	●	●				0.2			
		060102L-FY	●	●	●				0.2			
		060104R-FY	●	●	●				0.4			
		060104L-FY	●	●	●				0.4			
	7°	TCGT 110201MN-FF	●	●	●	6.35	2.38	2.8	<0.1			
		110202MN-FF	●	●	●				<0.2			
		110204MN-FF	●	●	●				<0.4			
	7°	TCGT 090201R-FX	●	●	●	5.56	2.38	2.5	0.1			
		090201L-FX	●	●	●				0.1			
		090202R-FX	●	●	●				0.2			
		090202L-FX	●	●	●				0.2			
		TCGT 110201R-FX	●	●	●				6.35	2.38	2.8	0.1
		110201L-FX	●	●	●							0.1
110202R-FX	●	●	●	0.2								
110202L-FX	●	●	●	0.2								
	7°	TCGT 090201R-FY	●	●	●	5.56	2.38	2.5	0.1			
		090201L-FY	●	●	●				0.1			
		090202R-FY	●	●	●				0.2			
		090202L-FY	●	●	●				0.2			
		TCGT 110201R-FY	●	●	●				6.35	2.38	2.8	0.1
		110201L-FY	●	●	●							0.1
110202R-FY	●	●	●	0.2								
110202L-FY	●	●	●	0.2								
	7°	TCMT 110204N-SU	●	●	●	6.35	2.38	2.8	0.4			
		110208N-SU	●	●	●				0.8			
		TCMT 16T304N-SU	●	●	●				9.525	3.97	4.3	0.4
16T308N-SU	●	●	●	0.8								
	7°	TCGT 110201MN-SI	●	●	●	6.35	2.38	2.8	<0.1			
		110202MN-SI	●	●	●				<0.2			
		110204MN-SI	●	●	●				<0.4			
	7°	TPGT 080201MN-FF	●	●	●	4.76	2.38	2.4	<0.1			
		080202MN-FF	●	●	●				<0.2			
		080204MN-FF	●	●	●				<0.4			
	11°	TPGT 110302MN-FC	●	●	●	6.35	3.18	3.4	<0.2			
		110304MN-FC	●	●	●				<0.4			

## Positive Triangular Type (continued)

Shape	Relief Angle	Cat. No.	Stock			Dimensions (mm)								
			AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Hole Dia.	Corner Radius					
	11°	TPGT 080202R-FX	●	●	●	4.76	2.38	2.4	0.2					
		080202L-FX	●	●	●				0.2					
		080204R-FX	●	●	●				0.4					
		080204L-FX	●	●	●				0.4					
		TPGT 110202R-FX	●	●	●				6.35	2.38	2.8	0.2		
		110202L-FX	●	●	●							0.2		
110204R-FX	●	●	●	0.4										
110204L-FX	●	●	●	0.4										
110208R-FX	●	●	●	6.35	2.38	2.8	0.8							
110208L-FX	●	●	●				0.8							
	11°	TPGT 110302R-FX	●	●	●	6.35	3.18	3.4	0.2					
		110302L-FX	●	●	●				0.2					
		110304R-FX	●	●	●				0.4					
		110304L-FX	●	●	●				0.4					
		110308R-FX	●	●	●				6.35	3.18	3.4	0.8		
		110308L-FX	●	●	●							0.8		
	11°	TPGT 160304R-FX	●	●	●	9.525	3.18	4.4	0.4					
		160304L-FX	●	●	●				0.4					
		160308R-FX	●	●	●				0.8					
		160308L-FX	●	●	●				0.8					
			11°	TPGT 0802003R-FY	●				●	●	4.76	2.38	2.4	0.03
				0802003L-FY	●				●	●				0.03
080201R-FY	●			●	●	0.1								
080201L-FY	●			●	●	0.1								
080202R-FY	●			●	●	0.2								
080202L-FY	●			●	●	0.2								
080204R-FY	●			●	●	0.4								
080204L-FY	●			●	●	0.4								
TPGT 090201R-FY	●			●	●	5.56	2.38	2.3	0.1					
090201L-FY	●			●	●				0.1					
090202R-FY	●	●	●	0.2										
090202L-FY	●	●	●	0.2										
090204R-FY	●	●	●	5.56	2.38	2.3	0.4							
090204L-FY	●	●	●				0.4							
	11°	TPGT 1103003R-FY	●	●	●	6.35	3.18	3.4	0.03					
		1103003L-FY	●	●	●				0.03					
		110301R-FY	●	●	●				0.1					
		110301L-FY	●	●	●				0.1					
		110302R-FY	●	●	●				0.2					
		110302L-FY	●	●	●				0.2					
		110304R-FY	●	●	●				0.4					
		110304L-FY	●	●	●				0.4					
		110308R-FY	●	●	●				6.35	3.18	3.4	0.8		
		110308L-FY	●	●	●							0.8		
	11°	TPGT 160302R-FY	●	●	●	9.525	3.18	4.4	0.2					
		160302L-FY	●	●	●				0.2					
		160304R-FY	●	●	●				0.4					
		160304L-FY	●	●	●				0.4					
		160308R-FY	●	●	●				0.8					
		160308L-FY	●	●	●				0.8					
	11°	TPGT 110304L-SD	●	●	●	6.35	3.18	3.4	0.4					
		TPGT 160404L-SD	●	●	●	9.525	4.76	4.4	0.4					
	11°	TPMT 080202N-SU	●	●	●	4.76	2.38	2.4	0.2					
		080204N-SU	●	●	●				0.4					
	11°	TPMT 090204N-SU	●	●	●	5.56	2.38	2.8	0.4					
		TPMT 110302N-SU	●	●	●				0.2					
		110304N-SU	●	●	●				6.35	3.18	3.4	0.4		
	11°	110308N-SU	●	●	●	6.35	3.18	3.4	0.8					
		TPMT 160404N-SU	●	●	●				9.525	4.76	4.4	0.4		
	11°	160408N-SU	●	●	●	9.525	4.76	4.4	0.8					
		TPGT 080201MN-SI	●	●	●				4.76	2.38	2.4	<0.1		
080202MN-SI	●	●	●	<0.2										
080204MN-SI	●	●	●	<0.4										
	11°	TPGW 110304	●	●	●	6.35	3.18	3.4	0.4					
		TPGW 160404	●	●	●	9.525	4.76	4.4	0.4					

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

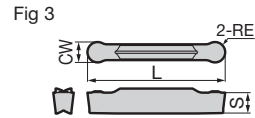
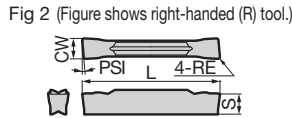
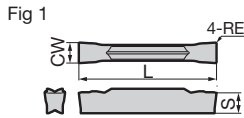
● mark: Standard stocked item ● mark: Standard stocked item (new product/expanded item) Blank: Made-to-order item





# AC5005S/AC5015S/AC5025S

## Inserts for SEC-Grooving Tools GND Series (For Grooving / Cut-off)



### Grooving / Traverse Cutting

Cat. No.	Stock		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC5015S	AC5025S	Width of Cut	Tolerance					
	GCM N3002-MG N3004-MG	●	●	3.0	±0.03	0.2	21.1		
GCM N4002-MG N4004-MG N4008-MG	●	●	4.0	±0.03	0.2	26.4	4.0	1	
GCM N5004-MG N5008-MG	●	●	5.0	±0.03	0.4	26.4	4.1	5	1
GCM N6004-MG N6008-MG	●	●	6.0	±0.03	0.4	26.4	4.5		1
GCM N7004-MG N7008-MG	●	●	7.0	±0.04	0.4	28.8	5.5	5	1
GCM N8004-MG N8008-MG	●	●	8.0	±0.04	0.4	28.8	6.0		1
GCM N2002-ML N3004-ML	●	●	2.0	±0.03	0.2	21.1	3.6	5	1
GCM N4002-ML N4004-ML N4008-ML	●	●	4.0	±0.03	0.2	26.4	4.0		1
GCM N5004-ML N5008-ML	●	●	5.0	±0.03	0.4	26.4	4.1	5	1
GCM N6004-ML N6008-ML	●	●	6.0	±0.03	0.4	26.4	4.5		1
GCM N7004-ML N7008-ML	●	●	7.0	±0.04	0.4	28.8	5.5	5	1
GCM N8004-ML N8008-ML	●	●	8.0	±0.04	0.4	28.8	6.0		1

### Grooving / Cut-off

Cat. No.	Stock		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC5015S	AC5025S	Width of Cut	Tolerance					
	GCM N2002-GG N3004-GG	●	●	2.0	±0.03	0.2	21.1		
GCM N4002-GG N4004-GG N4008-GG	●	●	4.0	±0.03	0.2	26.4	4.0	1	
GCM N5002-GG N5004-GG	●	●	5.0	±0.03	0.2	26.4	4.1	5	1
GCM N6002-GG N6004-GG	●	●	6.0	±0.03	0.2	26.4	4.5		1
GCM N7004-GG N8004-GG	●	●	7.0	±0.04	0.4	28.8	5.5	5	1
GCM N2002-GL N2004-GL	●	●	2.0	±0.03	0.2	21.1	3.6		5
GCM N3002-GL N3004-GL	●	●	3.0	±0.03	0.2	21.1	3.8	5	
GCM N4002-GL N4004-GL	●	●	4.0	±0.03	0.2	26.4	4.0		5
GCM N5002-GL N5004-GL	●	●	5.0	±0.03	0.2	26.4	4.1	5	
GCM N6002-GL N6004-GL	●	●	6.0	±0.03	0.2	26.4	4.5		5
GCM N7004-GL N8004-GL	●	●	7.0	±0.04	0.4	28.8	5.5	5	
GCM N2002-GF N2004-GF	●	●	2.0	±0.03	0.2	21.1	3.6		5
GCM N3002-GF N3004-GF	●	●	3.0	±0.03	0.2	21.1	3.8	5	
GCM N4002-GF N4004-GF	●	●	4.0	±0.03	0.2	26.4	4.0		5
GCM N5002-GF N5004-GF	●	●	5.0	±0.03	0.2	26.4	4.1	5	
GCM N6002-GF N6004-GF	●	●	6.0	±0.03	0.2	26.4	4.5		5
GCM N7002-GF N7004-GF	●	●	7.0	±0.04	0.2	28.8	5.5	5	
GCM N8002-GF N8004-GF	●	●	8.0	±0.04	0.2	28.8	6.0		5

### Cut-off (Handed Edge)

Cat. No.	Stock		Lead Angle PSI	Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC5015S	AC5025S		Width of Cut	Tolerance					
	GCM R2002-CG-05 L2002-CG-05	●	●	5°	2.0	±0.03	0.2	21.1		
GCM R3002-CG-05 L3002-CG-05	●	●	5°	3.0	±0.03	0.2	21.3	3.8	2	
GCM R4002-CG-05 L4002-CG-05	●	●	5°	4.0	±0.04	0.2	26.7	4.0	5	2
GCM R2003-CF-10 L2003-CF-10	●	●	10°	2.0	±0.08	0.03	22.4	3.6		5
GCM R3003-CF-10 L3003-CF-10	●	●	10°	3.0	±0.08	0.03	22.4	3.8	5	
GCM R2003-CF-15 L2003-CF-15	●	●	15°	2.0	±0.08	0.03	22.4	3.6		5
GCM R3003-CF-15 L3003-CF-15	●	●	15°	3.0	±0.08	0.03	22.4	3.8	5	

GCML: Right-handed, GCML: Left-handed

### External Profiling / External Radius Grooving

Cat. No.	Stock		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC5015S	AC5025S	Width of Cut	Tolerance					
	GCM N3015-RG N4020-RG	●	●	3.0	±0.03	1.5	21.1		
GCM N5025-RG N6030-RG	●	●	5.0	±0.03	2.5	27.2	4.1	3	
GCM N7035-RG N8040-RG	●	●	7.0	±0.04	3.5	29.1	5.5	5	3
			8.0	±0.04	4.0	29.3	6.0		3

### Profiling / Radius Grooving / Necking

Cat. No.	Stock		Width of Cut CW		Corner Radius RE	Overall Length L	Thickness S	Pcs/Pack	Fig
	AC5015S	AC5025S	Width of Cut	Tolerance					
	GCM N2010-RN N3015-RN	●	●	2.0	±0.03	1.0	21.7		
GCM N4020-RN N5025-RN	●	●	4.0	±0.03	2.0	28.2	4.0	5	3
GCM N6030-RN	●	●	6.0	±0.03	3.0	28.3	4.5		3

### Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications	Type	Symbol	Applications
Grooving / Traverse Cutting	MG	Multi-functional / General-purpose	Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	ML	Multi-functional / Low-feed		CF	Cut-off / Low Cutting Force
Grooving / Cut-off	GG	Grooving / General-purpose	External Profiling / External Radius Grooving / Profiling / Radius Grooving / Necking	RG	Profiling / General-purpose
	GL	Grooving / Low-feed		RN	Facing / Necking / General-purpose
	GF	Grooving / Low Cutting Force			

For details on the holders of the products listed on this page, refer to Tooling News No.492 "SEC-Grooving Tool Holders GND Series" and the General Catalogue. Select holders and inserts with matching width of cut (CW). Not usable with GNDIS type holders.

● mark: Standard stocked item

# AC5005S/AC5015S/AC5025S

## Recommended Cutting Conditions

(Red text indicates 1st recommendation)

Work Material	Application	Chipbreaker	Grade	Cutting Conditions		
				Depth of Cut $a_p$ (mm)	Feed Rate $f$ (mm/rev)	Cutting Speed $V_c$ (m/min)
Heat-Resistant Alloy ( Ni-based Material Fe-based Material Co-based Material )	Finishing	<b>EF</b>	<b>AC5005S</b> <b>AC5015S</b> <b>AC5025S</b>	0.2- <b>0.5</b> -1.5	0.10- <b>0.12</b> -0.20	50- <b>70</b> -110
	Light	EX	<b>AC5005S</b> <b>AC5015S</b> <b>AC5025S</b>	0.5- <b>1.0</b> -3.0	0.10- <b>0.20</b> -0.30	40- <b>60</b> -90
	Medium	<b>EG</b>	<b>AC5005S</b> <b>AC5015S</b> <b>AC5025S</b>	0.5- <b>2.0</b> -4.0	0.15- <b>0.25</b> -0.30	40- <b>60</b> -90
	Roughing	MU/EM	<b>AC5015S</b> <b>AC5025S</b>	1.0- <b>2.0</b> -4.0	0.20- <b>0.25</b> -0.40	30- <b>55</b> -80

Sumitomo Electric Cutting Tools Official Apps for iOS/Android



Cutting calculation App

## SumiTool Calculator



Grade & chipbreaker comparison App

## SumiTool Converter



### < 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.

 Sumitomo Electric Industries, Ltd.

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<https://www.sumitool.com/global>