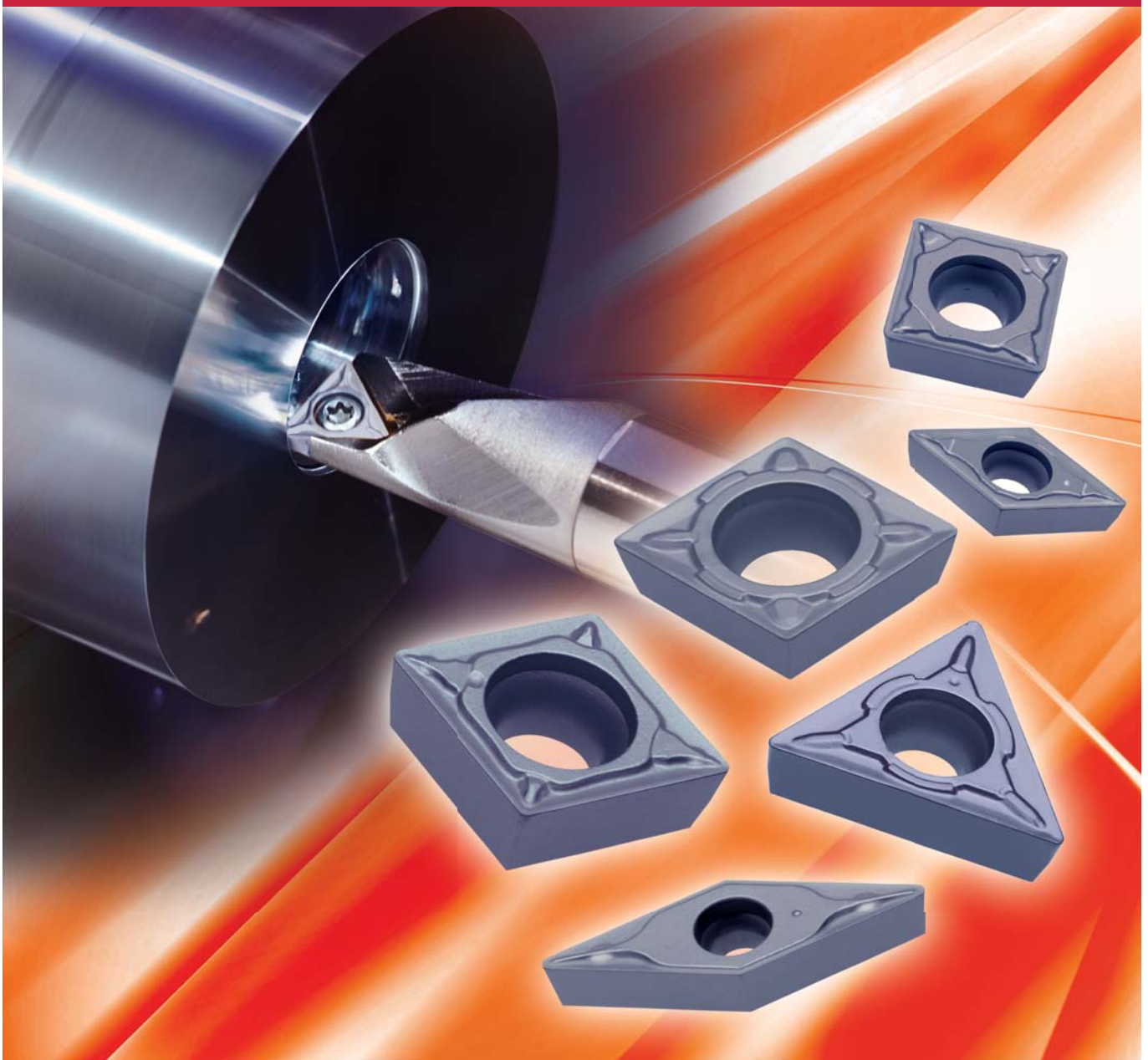


**PVD coated grade for steels and stainless steels**

# AH725

**Super Flash Coating provides High Productivity machining**



“Triple Force” provides long tool life and stable operation.

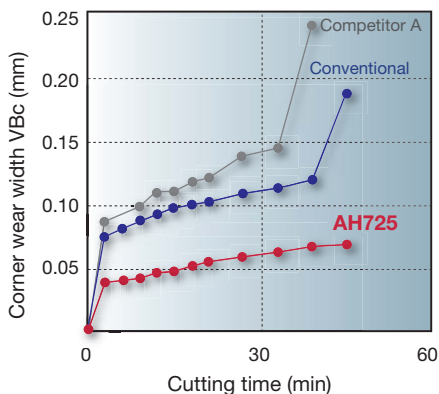


## AH725 New grade for internal turning of steels

AH725 features a super tough substrate along with a (Ti,Al)N coated layer providing "Triple Force".

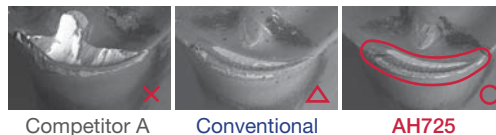
Newly improved coating layer features great adhesion strength between coating and substrate

### 1st Force: Excellent wear resistance

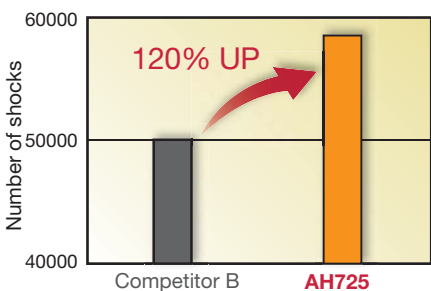


AH725 is more wear resistant than conventional and competitor's coated grades.

Work material : S45C (248HB)  
 Cutting speed :  $v_c = 200$  m/min  
 Depth of cut :  $a_p = 1.0$  mm  
 Feed :  $f = 0.15$  mm/rev  
 Cutting fluid : Water soluble type (Internal supply)

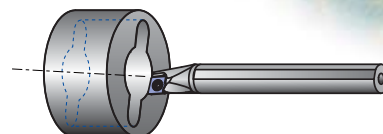


### 2nd Force: Well-balanced fracture resistance



AH725 features extraordinary resistance to fracturing in interrupted cutting.

Work material : S45C  
 Cutting speed :  $v_c = 150$  m/min  
 Depth of cut :  $a_p = 1.0$  mm  
 Feed :  $f = 0.25$  mm/rev  
 Cutting fluid : Water soluble type (Internal supply)



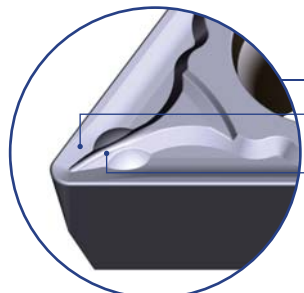
#### Standard cutting conditions

Grade	Cutting Speed $v_c$ (m/min)	
	Steels	Stainless steels
AH725	50 - 120 - 180	50 - 120 - 150



... & stainless steels in a wide variety of applications.

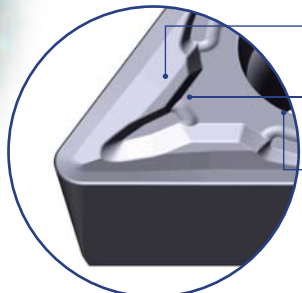
3rd Force: Excellent Chip Control



**PS** chipbreaker for Finishing to Medium cutting

- Low cutting force due to high-rake angle
- Applicable in a wide range of cutting conditions due to a unique chipbreaker protrusion.

Versatile chip breaker (1st choice)



**PM** chipbreaker for Medium cutting

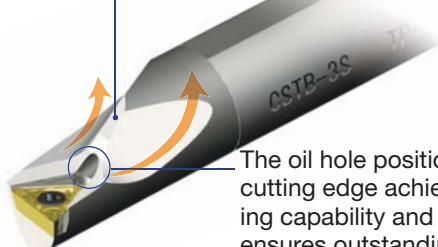
- Positive land creates low cutting force and sharp edge.
- Excellent chip control due to wide & positive chip flow
- Strong cutting edge controls edge notching and chipping.

Functional chip breaker provides low cutting force with excellent cutting edge.

Well-balanced micro alloy substrate is effective for plastic deformation resistance and toughness

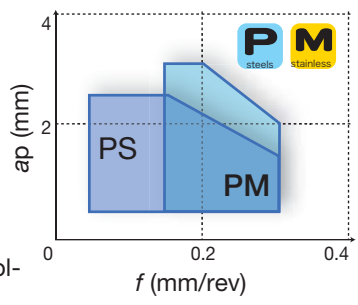
- Long tool life and cost effective combined with Stream Jet Bar

The head design provides both rigidity and good chip evacuation which avoid chip entanglement that can cause fracturing and chipping.

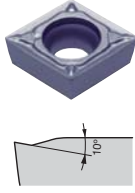
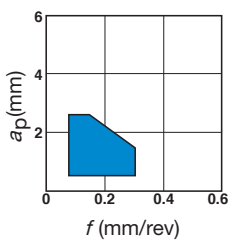
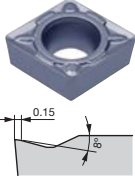
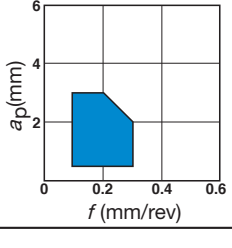


The oil hole positioned close to the cutting edge achieves excellent cooling capability and chip control, and ensures outstanding tool life.

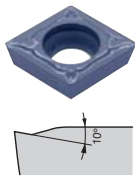
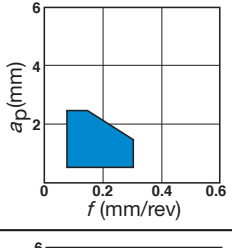
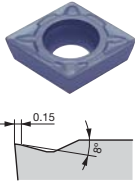
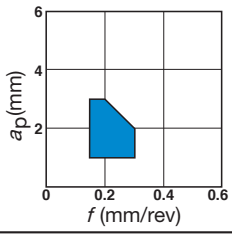
- Application for steels and stainless steels



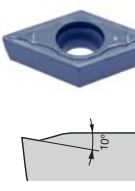
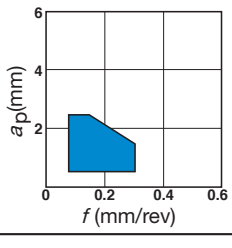
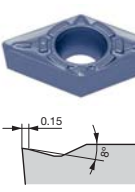
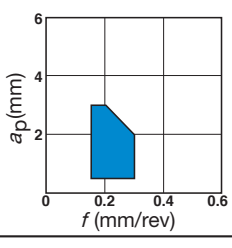
## 80° Rhombic, 7° Positive, with Hole

Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.( $\varnothing$ )	Corner radius	Coating AH725
Finishing to medium cutting			CCMT060202-PS	6.35	2.38	2.86	0.2	●
			CCMT060204-PS				0.4	●
			CCMT060208-PS				0.8	●
			CCMT09T302-PS	9.525	3.97	4.4	0.2	●
			CCMT09T304-PS				0.4	●
			CCMT09T308-PS				0.8	●
			* CCMT120404-PS	12.7	4.76	5.5	0.4	●
			CCMT120408-PS				0.8	●
CCMT120412-PS	1.2	●						
Medium cutting			CCMT060204-PM	6.35	2.38	2.86	0.4	●
			CCMT060208-PM				0.8	●
			CCMT09T304-PM				0.4	●
			* CCMT09T308-PM	9.525	3.97	4.4	0.8	●
			CCMT09T312-PM				1.2	●
			CCMT120408-PM				0.8	●
			CCMT120412-PM	12.7	4.76	5.5	1.2	●

## 80° Rhombic, 11° Positive, with Hole

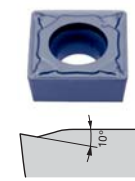
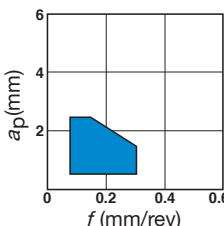
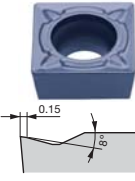
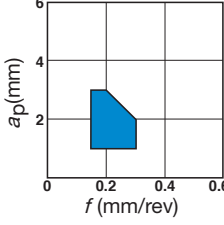
Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.( $\varnothing$ )	Corner radius	Coating AH725
Finishing to medium cutting			CPMT060202-PS	6.35	2.38	2.86	0.2	●
			CPMT060204-PS				0.4	●
			CPMT080202-PS				0.2	●
			CPMT080204-PS	7.94	2.38	3.4	0.4	●
			CPMT080208-PS				0.8	●
			* CPMT090304-PS				9.525	3.18
CPMT090308-PS	0.8	●						
Medium cutting			CPMT060204-PM	6.35	2.38	2.86	0.4	●
			CPMT060208-PM				0.8	●
			* CPMT090304-PM	9.525	3.18	4.4	0.4	●
			CPMT090308-PM				0.8	●

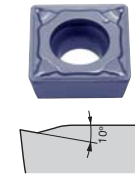
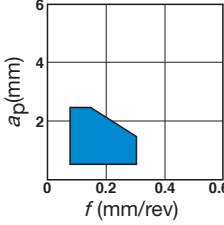
## 55° Rhombic, 7° Positive, with Hole

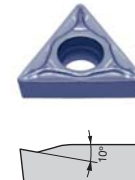
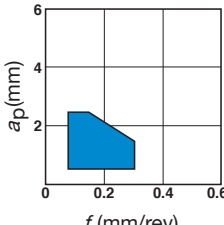
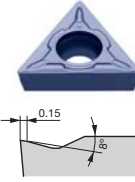
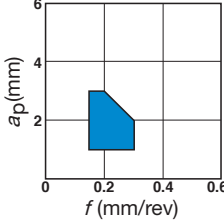
Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.( $\varnothing$ )	Corner radius	Coating AH725
Finishing to medium cutting			DCMT070202-PS	6.35	2.38	2.86	0.2	●
			DCMT070204-PS				0.4	●
			DCMT070208-PS				0.8	●
			DCMT11T302-PS	9.525	3.97	4.4	0.2	●
			* DCMT11T304-PS				0.4	●
			DCMT11T308-PS				0.8	●
DCMT11T312-PS				1.2	●			
Medium cutting			DCMT070204-PM	6.35	2.38	2.86	0.4	●
			DCMT070208-PM				0.8	●
			DCMT11T304-PM	9.525	3.97	4.4	0.4	●
			* DCMT11T308-PM				0.8	●
			DCMT11T312-PM				1.2	●

Note: Cross section of chipbreaker is of \* marked Cat.No.

● : Stocked in Japan

90° Square, 7° Positive, with Hole								
Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius	Coating
Finishing to medium cutting	<b>PS</b> 		* <b>SCMT09T304-PS</b>	9.525	3.97	4.4	0.4	●
			<b>SCMT09T308-PS</b>				0.8	●
			<b>SCMT120404-PS</b>	12.7	4.76	5.5	0.4	●
			<b>SCMT120408-PS</b>				0.8	●
Medium cutting	<b>PM</b> 		* <b>SCMT09T304-PM</b>	9.525	3.97	4.4	0.4	●
			<b>SCMT09T308-PM</b>				0.8	●
			<b>SCMT120408-PM</b>	12.7	4.76	5.5	0.8	●
			<b>SCMT120412-PM</b>				1.2	●

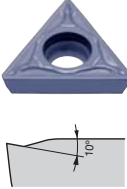
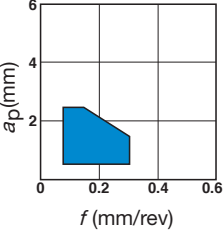
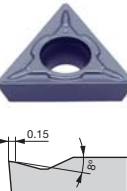
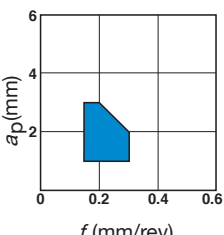
90° Square, 11° Positive, with Hole								
Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius	Coating
Finishing to medium cutting	<b>PS</b> 		<b>SPMT090304-PS</b>	9.525	3.18	4.4	0.4	●
			<b>SPMT090308-PS</b>				0.8	●
			<b>SPMT120404-PS</b>	12.7	4.76	5.5	0.4	●
			* <b>SPMT120408-PS</b>				0.8	●

60° Triangular, 7° positive, with Hole								
Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius	Coating
Finishing to medium cutting	<b>PS</b> 		<b>TCMT090204-PS</b>	5.56	2.38	2.58	0.4	●
			<b>TCMT090208-PS</b>				0.8	●
			<b>TCMT110202-PS</b>	6.35	2.38	2.86	0.2	●
			* <b>TCMT110204-PS</b>				0.4	●
			<b>TCMT110208-PS</b>				0.8	●
			<b>TCMT16T302-PS</b>	9.525	3.97	4.4	0.2	●
			<b>TCMT16T304-PS</b>				0.4	●
<b>TCMT16T308-PS</b>	0.8	●						
Medium cutting	<b>PM</b> 		<b>TCMT110202-PM</b>	6.35	2.38	2.86	0.2	●
			<b>TCMT110204-PM</b>				0.4	●
			<b>TCMT110208-PM</b>				0.8	●
			* <b>TCMT16T304-PM</b>	9.525	3.97	4.4	0.4	●
			<b>TCMT16T308-PM</b>				0.8	●
			<b>TCMT16T312-PM</b>				1.2	●

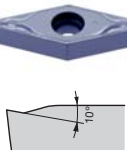
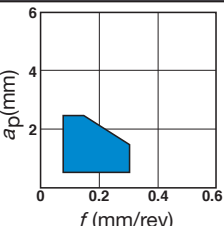
Note: Cross section of chipbreaker is of \* marked Cat.No.

● : Stocked in Japan

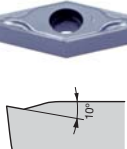
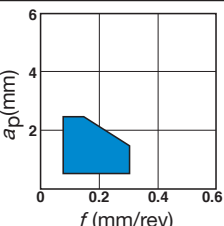
## 60° Triangular, 11° Positive, with Hole

Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade Coating AH725			
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius				
Finishing to medium cutting	<b>PS</b> 		<b>TPMT090202-PS</b> <b>TPMT090204-PS</b> <b>TPMT090208-PS</b>	5.56	2.38	2.58	0.2	●			
			<b>TPMT110202-PS</b> <b>* TPMT110204-PS</b> <b>TPMT110208-PS</b>				6.35	2.38	2.86	0.4	●
			<b>TPMT110304-PS</b> <b>TPMT110308-PS</b>							6.35	3.18
			<b>TPMT130302-PS</b> <b>TPMT130304-PS</b> <b>TPMT130308-PS</b>	7.94	3.18	3.4					
			<b>TPMT16T304-PS</b> <b>TPMT16T308-PS</b>				9.525	3.97	4.4		
			Medium cutting	<b>PM</b> 		<b>TPMT090204-PM</b> <b>TPMT090208-PM</b>				5.56	2.38
						<b>TPMT110204-PM</b> <b>TPMT110208-PM</b>	6.35	2.38	2.86		
						<b>TPMT110304-PM</b> <b>TPMT110308-PM</b>				6.35	3.18
						<b>TPMT130304-PM</b> <b>TPMT130308-PM</b>	7.94	3.18	3.4		
						<b>* TPMT16T304-PM</b> <b>TPMT16T308-PM</b> <b>TPMT16T312-PM</b>				9.525	3.97
									0.8		
						1.2	●				

## 35° Rhombic, 5° Positive, with Hole

Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade Coating AH725			
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius				
Finishing to medium cutting	<b>PS</b> 		<b>* VBMT110302-PS</b> <b>VBMT110304-PS</b> <b>VBMT110308-PS</b>	6.35	3.18	2.86	0.2	●			
			<b>VBMT160402-PS</b> <b>VBMT160404-PS</b> <b>VBMT160408-PS</b>				9.525	4.76	4.4	0.4	●

## 35° Rhombic, 7° Positive, with Hole

Application	Chipbreaker Appearance (Cross section)	$f - a_p$	Insert Cat. No. (Metric)	Dimensions (mm)				Grade Coating AH725			
				I.C. dia.	Thickness	Hole dia.(Ø)	Corner radius				
Finishing to medium cutting	<b>PS</b> 		<b>VCMT110302-PS</b> <b>* VCMT110304-PS</b> <b>VCMT110308-PS</b>	6.35	3.18	2.86	0.2	●			
			<b>VCMT160404-PS</b> <b>VCMT160408-PS</b>				9.525	4.76	4.4	0.4	●

Note: Cross section of chipbreaker is of \* marked Cat.No.

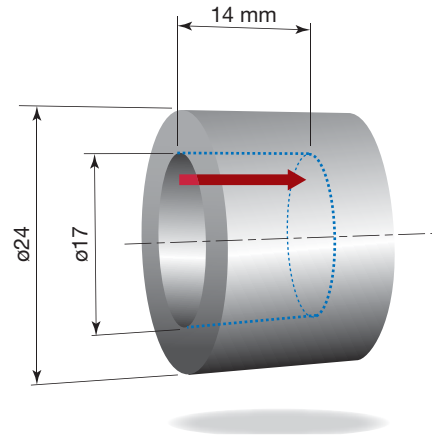
● : Stocked in Japan

# Practical examples

## 20% longer tool life and excellent surface finish

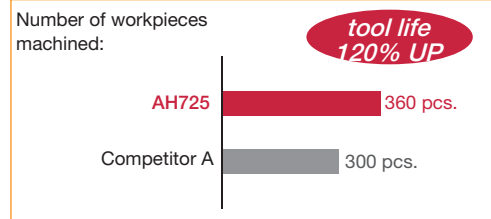
Insert : CCMT060208-PS  
 Toolholder : A10K-SCLCR06-D120

Work material : SUS316  
 Cutting speed :  $V_c = 120$  m/min  
 Feed :  $f = 0.15$  mm/rev  
 Depth of cut :  $a_p = 0.4$  mm  
 Tool life criteria : Surface roughness



Machine component

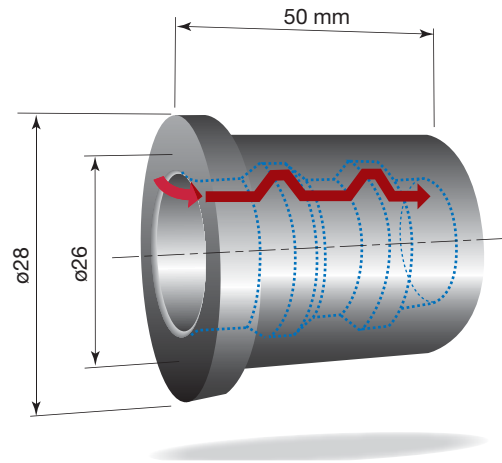
**Results** In operations with severe surface roughness, the tool life was increased by 20% compared with competitor's PVD grade



## 50% longer tool life with outstanding surface finish

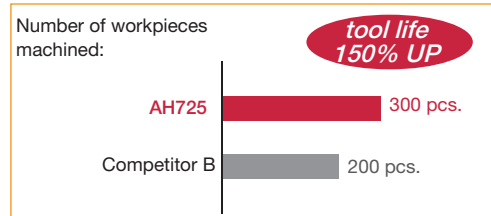
Insert : DCMT070204-PS  
 Toolholder : A10K-SDUCR07-D130

Work material : SUJ2  
 Cutting speed :  $V_c = 100$  m/min  
 Feed :  $f = 0.1$  mm/rev  
 Depth of cut :  $a_p = 0.6$  mm  
 Tool life criteria : number of workpieces and surface finish



Machine component

**Results** When competitor's PVD grade was used, the workpiece surface appeared dull and cutting was unstable. The productivity of AH725 was vastly improved from 200 pcs to 300 pcs. In addition, its surface finish was superior to those obtained with competitor's tool.





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