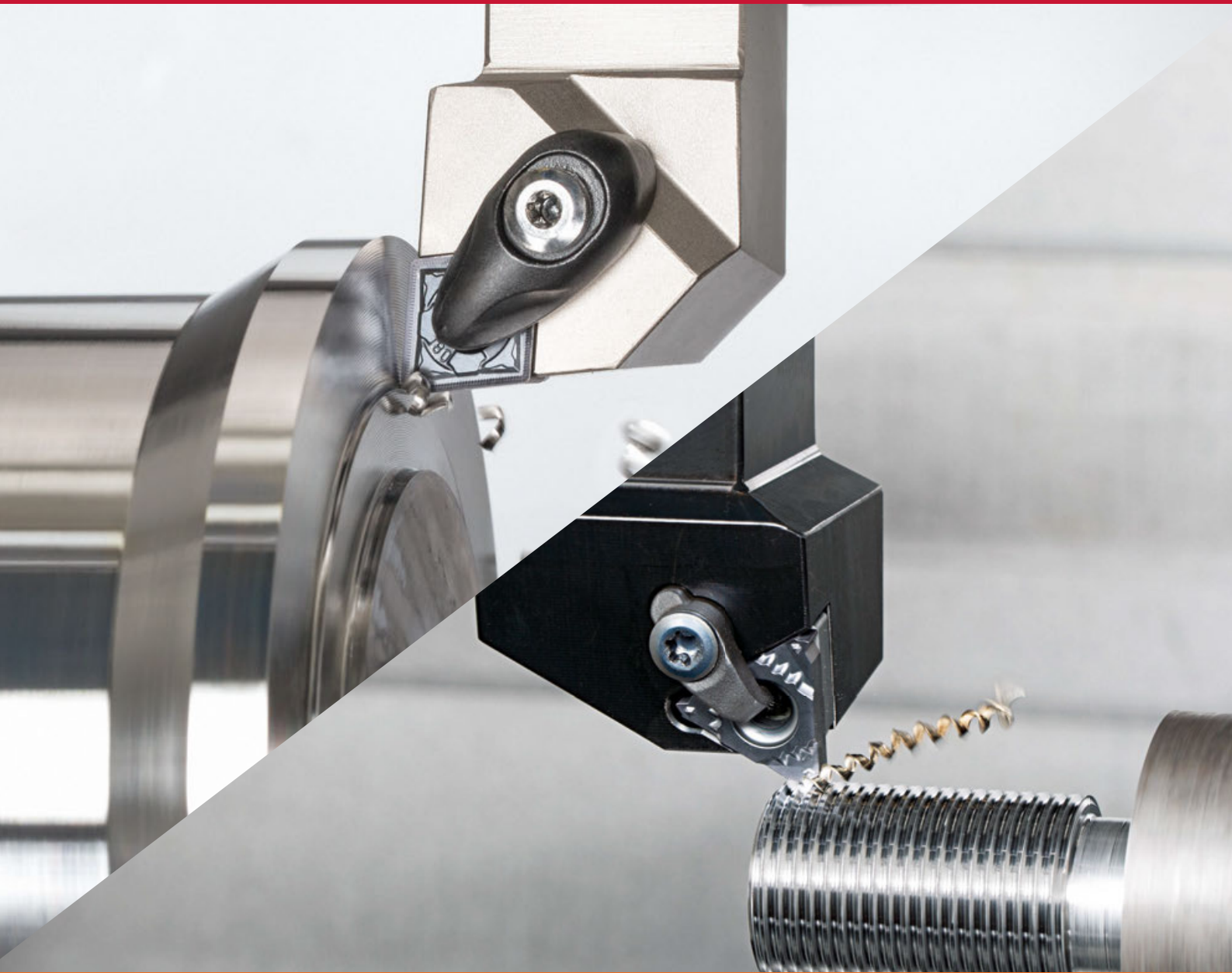


TurnLine



AH8000 SERIES

Now in **threading inserts** to conquer ISO S materials



INDUSTRY 4.0
FEED the SPEED!

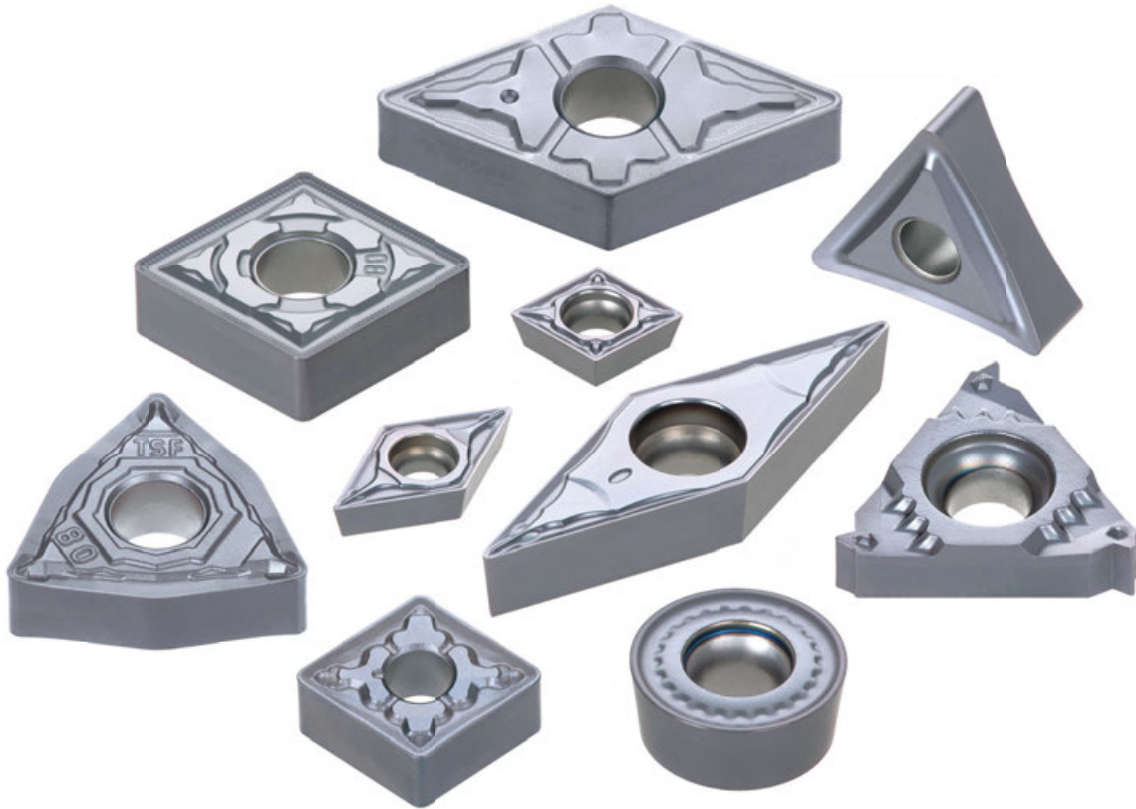


ACCELERATED MACHINING

TurnLine

AH8000 SERIES

TUNGALOY



Enables reliable threading of difficult materials

Incredible reliability in turning of heat-resistant alloys

PREMIUMTEC

TUNGALOY

Special surface technology

Nano-multi-layered AlTiN coating with high Al content

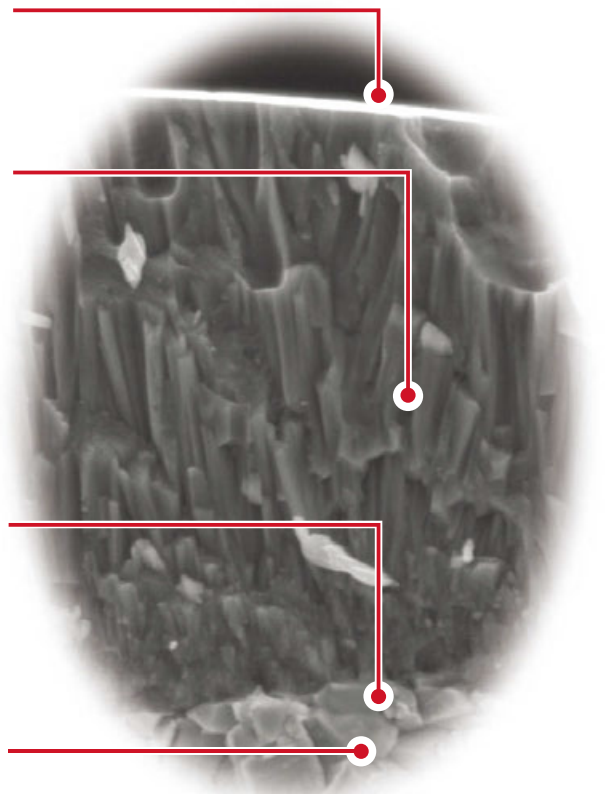
- Increases hardness by 20%
- Prevents micro cracks from developing

→ Long tool life & stable machining

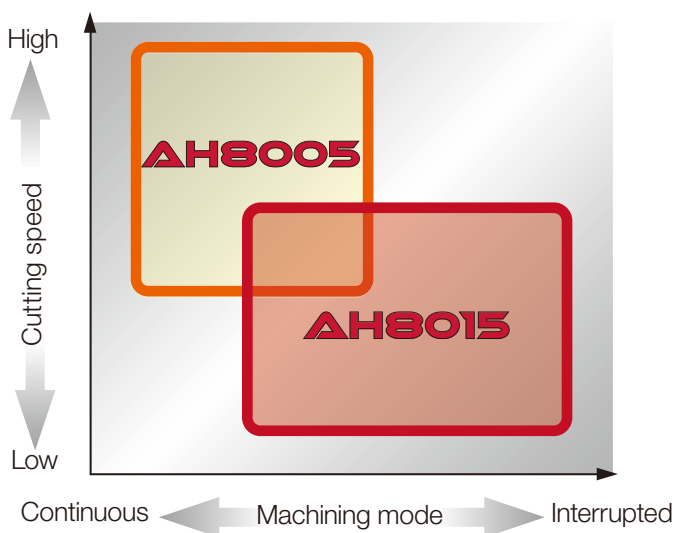
Improved adhesion strength

→ Prevents notch wear that tends to occur in machining heat-resistant alloys

Newly developed substrates



APPLICATION AREA



AH8015

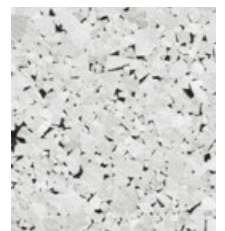
The 1st recommendation for heat-resistant alloys

Versatile grade with high wear and fracture resistance



AH8005

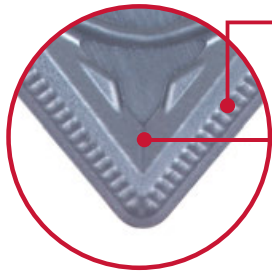
Grade with high hardness and excellent wear resistance



CHIPBREAKERS

HRM For finishing to medium cutting

The 1st recommendation



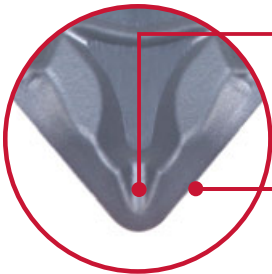
Unique protrusions on the rake face

Reduce the contact area of rake face and chips

Optimized rake face geometry and protrusion

Provide low cutting force and stable chip control

HRF For finishing



Special protrusion

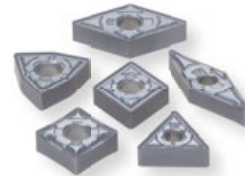
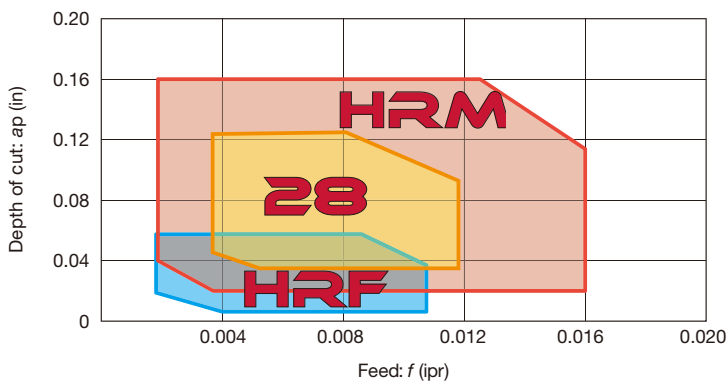
Provides excellent chip control in machining depth of cut less than the corner R

Large rake angle and inclination

Reduce cutting force

APPLICATION AREA AND CHIP CONTROL

Chipbreakers for negative inserts



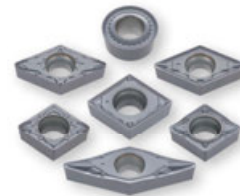
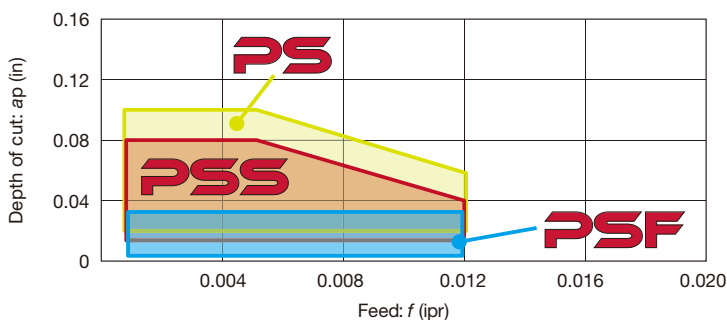
- The -HRF and -HRM styles are added as the first choice chipbreakers to the standard lineup, along with the free-cutting -28 chipbreaker to complement the negative insert range.

- Suited for medium to finish cutting range.

* For D.O.C > 0.157", use inserts in > 0.500" I.C.

Main chipbreakers for positive inserts

(CCMT, CPMT, DCMT, VBMT, VCMT)



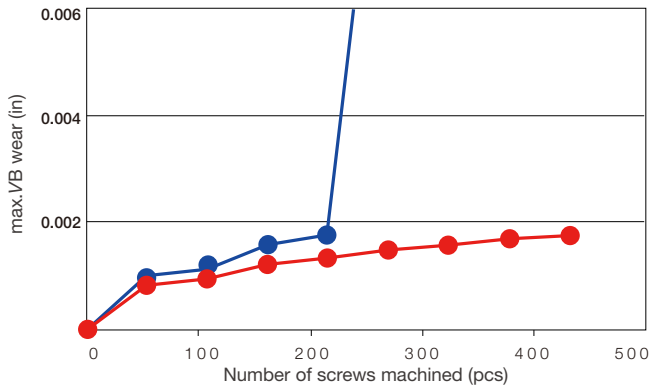
- PSF, PSS, and PS chipbreakers cover finishing to medium cutting.

- Complementary chipbreaker: All-round type

CUTTING PERFORMANCE

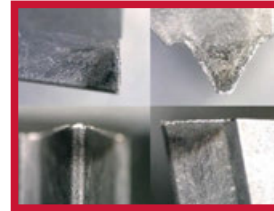
New AH8015 / Threading

M



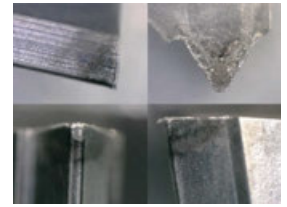
Insert : 16ER15ISO
 Workpiece material : SUS304
 Cutting speed : Vc = 328 sfm
 pitch : 0.059"
 Machining : External threading
 Infeed method : Radial infeed
 Coolant : Wet

After 432 thread



AH8015

After 216 thread



Conventional

ISO	Workpiece materials	Hardness	Cutting speed Vc (sfm)				
			AH725	AH8015	T313V	NS9530	TH10
P	Carbon steel	< 200 HB	260 - 590	260 - 590	328 - 656	490 - 656	-
		> 200 HB	197 - 525	197 - 525	328 - 490	328 - 558	-
M	Stainless steel	-	164 - 427	164 - 427	230 - 427	-	-
K	Cast iron	-	-	-	230 - 490	-	230 - 295
N	Aluminium	-	-	-	-	-	330 - 1640
S	Heat-resistance alloys	-	-	-	-	-	33 - 130
H	High hardened steel	50 - 60 HRC	-	-	-	-	33 - 98

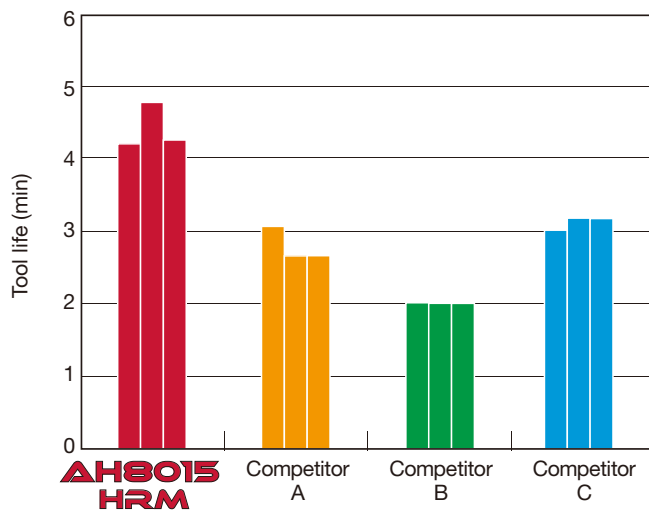
CUTTING PERFORMANCE

AH8015 / HRM

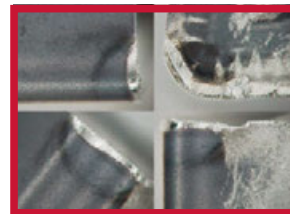
- General machining condition

Insert : CNMG 432 **
 Cutting speed : $V_c = 197$ sfm
 Feed : $f = 0.008$ ipr
 Depth of cut : $a_p = 0.039$ "
 Machining : External turning
 Coolant : Wet

S Inconel 718

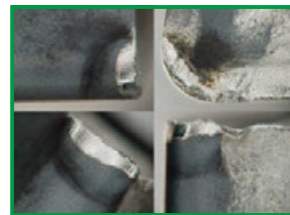


After 4 min.



AH8015 / HRM

After 2 min.



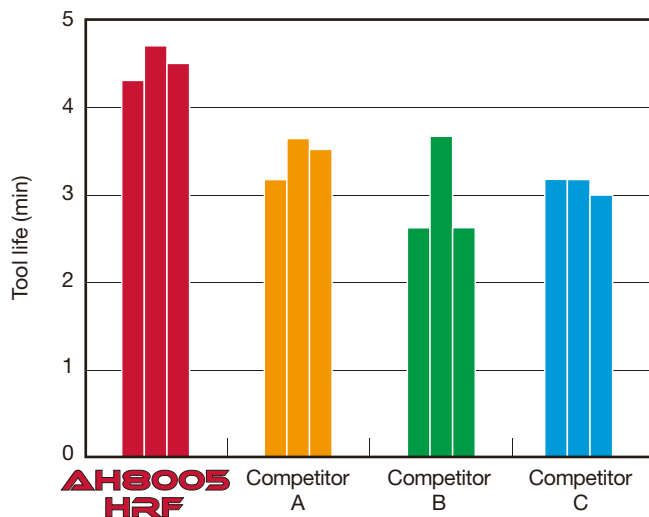
Competitor B

AH8005 / HRF

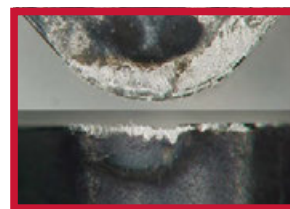
- High-speed cutting

Insert : CNMG 432 **
 Cutting speed : $V_c = 328$ sfm
 Feed : $f = 0.006$ ipr
 Depth of cut : $a_p = 0.012$ "
 Machining : External turning
 Coolant : Wet

S Inconel 718

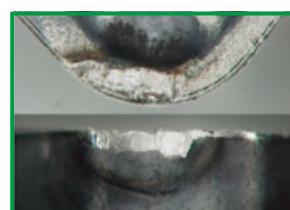


After 2.7 min.



AH8005 / HRF

After 2.7 min.



Competitor B

GRADES

Application	Grade Application code	Substrate			Coating layer	
		Specific gravity	Hardness (HRA)	T.R.S. (GPa)	Main composition	Thickness (μm)
S	AH8005	15.0	93.0	2.2	(Al,Ti)N	3.5
	S01 - S10					
	AH8015	14.9	91.8	3.1	(Al,Ti)N	3.5
	S10 - S20					

STANDARD CUTTING CONDITIONS

Chipbreakers for negative inserts

Chipbreaker	Corner radius RE	Depth of cut ap (in)	Feed f (ipr)	Cutting speed: Vc (sfm)	
				AH8005	AH8015
HRF	0.016	0.008 - 0.059	0.002 - 0.009	130 - 330	66 - 260
	0.031	0.008 - 0.059	0.002 - 0.010	130 - 330	66 - 260
	0.047	0.008 - 0.059	0.003 - 0.011	130 - 330	66 - 260
HRM	0.016	0.020 - 0.157	0.002 - 0.012	130 - 330	66 - 260
	0.031	0.020 - 0.157	0.003 - 0.013	130 - 330	66 - 260
	0.047	0.020 - 0.157	0.004 - 0.014	130 - 330	66 - 260
	0.063	0.020 - 0.157	0.006 - 0.016	130 - 330	66 - 260
28	0.016	0.020 - 0.118	0.003 - 0.008	130 - 330	66 - 260
	0.031	0.020 - 0.118	0.004 - 0.012	130 - 330	66 - 260
	0.047	0.020 - 0.118	0.004 - 0.012	130 - 330	66 - 260

* Values for the inserts with 0.500" I.C. dia.

Chipbreakers for positive inserts

Chipbreaker	Corner radius RE	Depth of cut ap (in)	Feed f (ipr)	Cutting speed: Vc (sfm)	
				AH8005	AH8015
PSF	0.016	0.002 - 0.020	0.001 - 0.008	130 - 330	66 - 260
	0.031	0.002 - 0.020	0.001 - 0.012	130 - 330	66 - 260
PSS	0.016	0.012 - 0.079	0.001 - 0.008	130 - 330	66 - 260
	0.031	0.012 - 0.079	0.001 - 0.012	130 - 330	66 - 260
	0.047	0.012 - 0.079	0.002 - 0.012	130 - 330	66 - 260
PS	0.016	0.020 - 0.098	0.001 - 0.008	130 - 330	66 - 260
	0.031	0.020 - 0.098	0.001 - 0.012	130 - 330	66 - 260
	0.047	0.020 - 0.098	0.002 - 0.012	130 - 330	66 - 260
All-round	0.016	0.020 - 0.118	0.003 - 0.008	130 - 330	66 - 260
	0.031	0.020 - 0.118	0.003 - 0.012	130 - 330	66 - 260
	0.047	0.020 - 0.118	0.003 - 0.012	130 - 330	66 - 260
RS		0.020 - 0.059	0.001 - 0.012	130 - 330	66 - 260
61		0.020 - 0.079	0.008 - 0.024	130 - 330	66 - 260

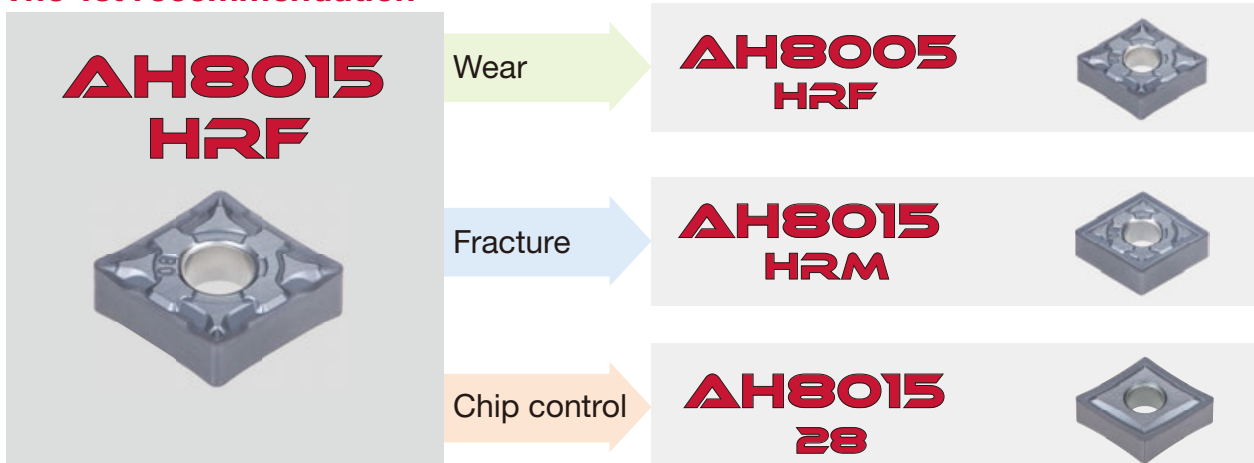
* Values for the inserts with 9.525 mm I.C. dia.

SELECTION GUIDE

Chipbreakers for negative inserts

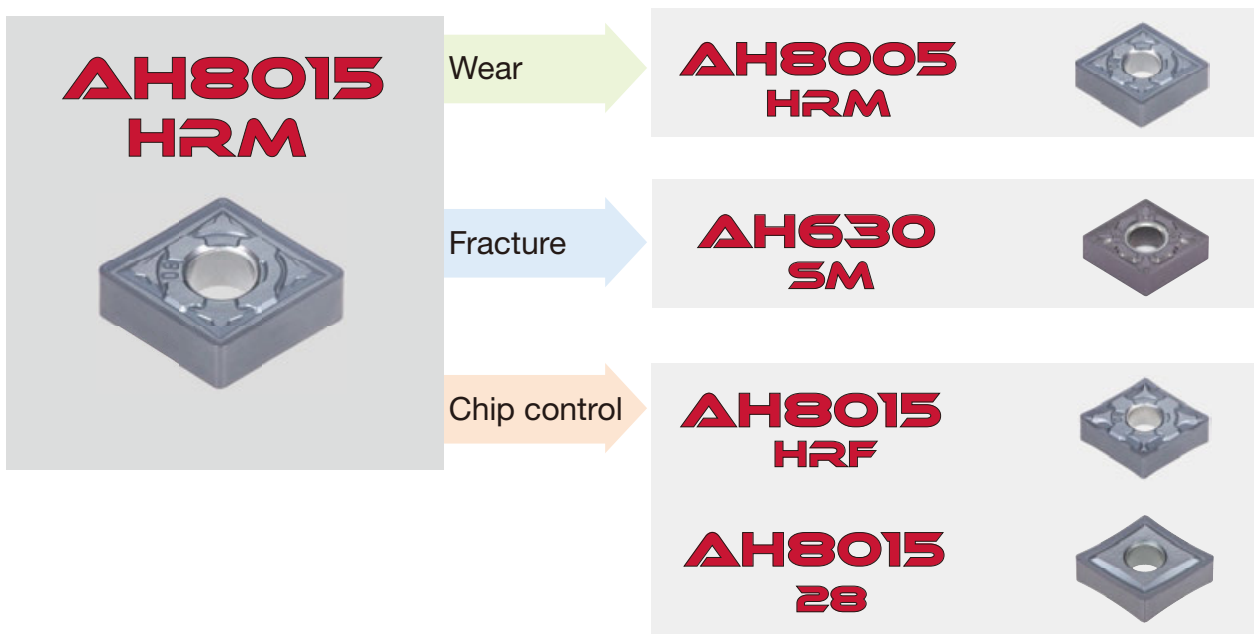
- For finishing ($a_p = 0.008'' - 0.059''$)

The 1st recommendation



- For finishing to medium cutting ($a_p = 0.020'' - 0.157''$)

The 1st recommendation

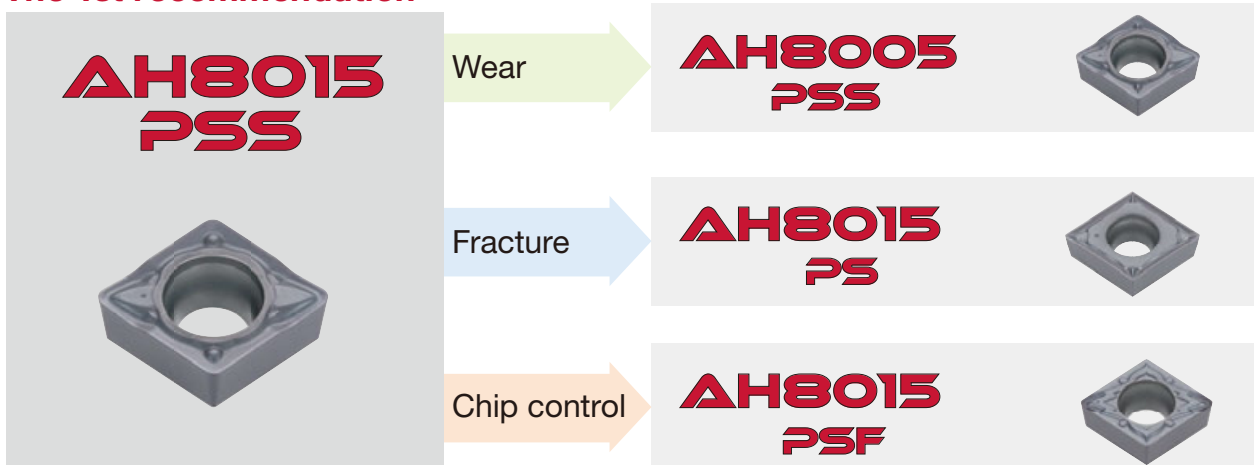


Note: This is a general guide and may not be applicable under the specific conditions.

Chipbreakers for positive inserts

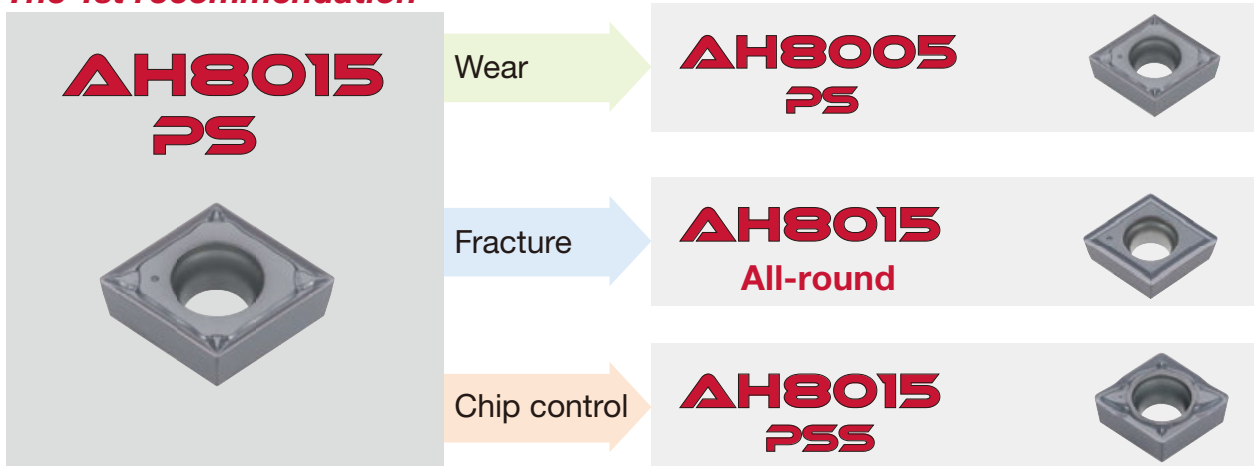
- For finishing ($a_p = 0.012'' - 0.079''$)

The 1st recommendation



- For finishing to medium cutting ($a_p = 0.020'' - 0.098''$)

The 1st recommendation



Note: This is a general guide and may not be applicable under the specific conditions.

TurnLine - Inserts

● : Continuous cutting
● : Light interrupted cutting
⊛ : Heavy interrupted cutting

NEGATIVE TYPE



**Rhombic, 80°
with hole**

P	Steel																			
M	Stainless	●	●																	
K	Cast iron																			
N	Non-ferrous																			
S	Superalloys	●	●																	
H	Hard materials																			

Application	Chipbreaker	Designation	Corner radius	Coating																			
				Inch	Metric	AH8005		AH8015															
Finishing		HRF	CNMG 431 HRF	CNMG120404-HRF	0.4	●	●																
			CNMG 432 HRF	CNMG120408-HRF	0.8	●	●																
			CNMG 433 HRF	CNMG120412-HRF	1.2	●	●																
		TSF	CNMG 330.5E TSF	CNMG090402E-TSF	0.2	●																	
			CNMG 331E TSF	CNMG090404E-TSF	0.4	●																	
			CNMG 332E TSF	CNMG090408E-TSF	0.8	●																	
		CNMG 431 TSF	CNMG120404-TSF	0.4	●																		
Medium cutting			CNMG 432 TSF	CNMG120408-TSF	0.8	●																	
			CNMG 433 TSF	CNMG120412-TSF	1.2	●																	
		TM	CNMG 331E TM	CNMG090404E-TM	0.4	●																	
			CNMG 332E TM	CNMG090408E-TM	0.8	●																	
			CNMG 333E TM	CNMG090412E-TM	1.2	●																	
			CNMG 431 TM	CNMG120404-TM	0.4	●																	
	CNMG 432 TM	CNMG120408-TM	0.8	●																			
	CNMG 433 TM	CNMG120412-TM	1.2	●																			
	CNMG 434 TM	CNMG120416-TM	1.6	●																			

● : Line-up

TurnLine - Inserts

- : Continuous cutting
- c : Light interrupted cutting
- s : Heavy interrupted cutting

NEGATIVE TYPE



**Rhombic, 80°
with hole**

	P	M	K	N	S	H
Steel						
Stainless		● c				
Cast iron						
Non-ferrous						
Superalloys		● c				
Hard materials						

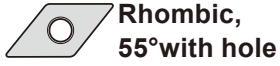
Application	Chipbreaker	Designation		Corner radius	Coating															
		Inch	Metric		AH8005	AH8015														
Finishing to medium cutting		28	CNMG 431-28	CNMG120404-28	0.4	●	●													
			CNMG 432-28	CNMG120408-28	0.8	●	●													
			CNMG 433-28	CNMG120412-28	1.2	●	●													
		HRM	CNMG 431 HRM	CNMG120404-HRM	0.4	●	●													
			CNMG 432 HRM	CNMG120408-HRM	0.8	●	●													
			CNMG 433 HRM	CNMG120412-HRM	1.2	●	●													
			CNMG 542 HRM	CNMG160608-HRM	0.8	●	●													
			CNMG 543 HRM	CNMG160612-HRM	1.2	●	●													
			CNMG 643 HRM	CNMG190612-HRM	1.2	●	●													
			CNMG 644 HRM	CNMG190616-HRM	1.6	●	●													
		TH	CNMG 432 TH	CNMG120408-TH	0.8		●													
			CNMG 433 TH	CNMG120412-TH	1.2		●													
		CNMG 434 TH	CNMG120416-TH	1.6		●														

● : Line-up

TurnLine - Inserts




- : Continuous cutting
- : Light interrupted cutting
- : Heavy interrupted cutting

NEGATIVE TYPE



Rhombic,
55° with hole

P Steel																																						
M Stainless	●	●●																																				
K Cast iron																																						
N Non-ferrous																																						
S Superalloys	●	●●																																				
H Hard materials																																						

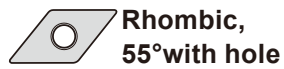
Application	Chipbreaker	Designation	Corner radius	Coating																							
				Inch	Metric	AH8005	AH8015																				
Finishing		HRF DNMG 431 HRF DNMG150404-HRF	0.4	●	●●																						
		DNMG 432 HRF DNMG150408-HRF	0.8	●	●●																						
		DNMG 441 HRF DNMG150604-HRF	0.4	●	●●																						
		DNMG 442 HRF DNMG150608-HRF	0.8	●	●●																						
		TSF DNMG 330.5E TSF DNMG110402E-TSF	0.2		●																						
		DNMG 331E TSF DNMG110404E-TSF	0.4		●																						
		DNMG 332E TSF DNMG110408E-TSF	0.8		●																						
		DNMG 333E TSF DNMG110412E-TSF	1.2		●																						
		DNMG 431 TSF DNMG150404-TSF	0.4		●																						
		DNMG 432 TSF DNMG150408-TSF	0.8		●																						
DNMG 433 TSF DNMG150412-TSF		1.2		●																							
Medium cutting		TM DNMG 331E TM DNMG110404E-TM	0.4		●																						
		DNMG 332E TM DNMG110408E-TM	0.8		●																						
		DNMG 333E TM DNMG110412E-TM	1.2		●																						
		DNMG 431 TM DNMG150404-TM	0.4		●																						
		DNMG 432 TM DNMG150408-TM	0.8		●																						
		DNMG 433 TM DNMG150412-TM	1.2		●																						
		DNMG 434 TM DNMG150416-TM	1.6		●																						
		DNMG 442 TM DNMG150608-TM	0.8		●																						
		DNMG 443 TM DNMG150612-TM	1.2		●																						
DNMG 444 TM DNMG150616-TM	1.6		●																								

● : Line-up

TurnLine - Inserts

● : Continuous cutting
 ● : Light interrupted cutting
 ⊛ : Heavy interrupted cutting

NEGATIVE TYPE



Material	Steel	Stainless	Cast iron	Non-ferrous	Superalloys	Hard materials	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating	Coating
P Steel																				
M Stainless	●	●																		
K Cast iron																				
N Non-ferrous																				
S Superalloys	●	●																		
H Hard materials																				

Application	Chipbreaker	Designation		Corner radius	Coating																		
		Inch	Metric		AH8005	AH8015																	
Finishing to medium cutting		28	DNMG 431-28	DNMG150404-28	0.4	●	●																
			DNMG 432-28	DNMG150408-28	0.8	●	●																
			DNMG 441-28	DNMG150604-28	0.4	●	●																
			DNMG 442-28	DNMG150608-28	0.8	●	●																
		HRM	DNMG 431 HRM	DNMG150404-HRM	0.4	●	●																
			DNMG 432 HRM	DNMG150408-HRM	0.8	●	●																
			DNMG 433 HRM	DNMG150412-HRM	1.2	●	●																
			DNMG 441 HRM	DNMG150604-HRM	0.4	●	●																
			DNMG 442 HRM	DNMG150608-HRM	0.8	●	●																
			DNMG 443 HRM	DNMG150612-HRM	1.2	●	●																
		TH	DNMG 432 TH	DNMG150408-TH	0.8		●																
			DNMG 433 TH	DNMG150412-TH	1.2		●																
			DNMG 434 TH	DNMG150416-TH	1.6																		

● : Line-up

TurnLine - Inserts

- : Continuous cutting
- : Light interrupted cutting
- ⊗ : Heavy interrupted cutting

NEGATIVE TYPE



**Square, 90°
with hole**

M	K	N	S	H																				
P	M	K	N	S	H																			
●	●●		●●																					

P Steel
M Stainless
K Cast iron
N Non-ferrous
S Superalloys
H Hard materials

Application	Chipbreaker	Designation		Corner radius	Coating																				
		Inch	Metric		AH8005	AH8015																			
Finishing		HRF	SNMG 432 HRF	SNMG120408-HRF	0.8	●	●																		
			SNMG 433 HRF	SNMG120412-HRF	1.2	●	●																		
Finishing to medium cutting		HRM	SNMG 432 HRM	SNMG120408-HRM	0.8	●	●																		
			SNMG 433 HRM	SNMG120412-HRM	1.2	●	●																		
			SNMG 542 HRM	SNMG150608-HRM	0.8	●	●																		
			SNMG 543 HRM	SNMG150612-HRM	1.2	●	●																		
			SNMG 643 HRM	SNMG190612-HRM	1.2	●	●																		
	SNMG 644 HRM	SNMG190616-HRM	1.6	●	●																				

● : Line-up

TurnLine - Inserts

- : Continuous cutting
- : Light interrupted cutting
- ✱ : Heavy interrupted cutting

NEGATIVE TYPE



**Triangular, 60°
with hole**

	P	M	K	N	S	H
Steel						
Stainless	●	●				
Cast iron						
Non-ferrous						
Superalloys	●	●				
Hard materials						

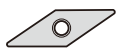
Application	Chipbreaker	Designation		Corner radius	Coating															
		Inch	Metric		AH8005	AH8015														
Finishing	HRF	TNMG 331 HRF	TNMG160404-HRF	0.4	●	●														
		TNMG 332 HRF	TNMG160408-HRF	0.8	●	●														
Medium cutting	TM	TNMG 334 TM	TNMG160416-TM	1.6	●															
Finishing to medium cutting	28	TNMG 331-28	TNMG160404-28	0.4	●	●														
		TNMG 332-28	TNMG160408-28	0.8	●	●														
	HRM	TNMG 331 HRM	TNMG160404-HRM	0.4	●	●														
		TNMG 332 HRM	TNMG160408-HRM	0.8	●	●														
		TNMG 333 HRM	TNMG160412-HRM	1.2	●	●														

● : Line-up

- : Continuous cutting
- ◐ : Light interrupted cutting
- ◑ : Heavy interrupted cutting

TurnLine - Inserts

NEGATIVE TYPE



Rhombic,
35° with hole

P	Steel																									
M	Stainless	●	◐																							
K	Cast iron																									
N	Non-ferrous																									
S	Superalloys	●	◐																							
H	Hard materials																									

Application	Chipbreaker	Designation		Corner radius	Coating																					
		Inch	Metric		AH8005	AH8015																				
Finishing		HRF	VNMG 331 HRF	VNMG160404-HRF	0.4	●	●																			
			VNMG 332 HRF	VNMG160408-HRF	0.8	●	●																			
Finishing to medium cutting		28	VNMG 331-28	VNMG160404-28	0.4	●	●																			
				VNMG 332-28	VNMG160408-28	0.8	●	●																		
		HRM	VNMG 331 HRM	VNMG160404-HRM	0.4	●	●																			
				VNMG 332 HRM	VNMG160408-HRM	0.8	●	●																		
		VNMG 333 HRM	VNMG160412-HRM	1.2	●	●																				

● : Line-up

TurnLine - Inserts

● : Continuous cutting
 ● : Light interrupted cutting
 ✳ : Heavy interrupted cutting

NEGATIVE TYPE



Trigon, 80°
with hole

P	Steel		
M	Stainless	●	●
K	Cast iron		
N	Non-ferrous		
S	Superalloys	●	●
H	Hard materials		

Application	Chipbreaker	Designation		Corner radius	Coating																							
		Inch	Metric		AH8005	AH8015																						
Finishing	HRF	WNMG 431 HRF	WNMG080404-HRF	0.4	●	●																						
		WNMG 432 HRF	WNMG080408-HRF	0.8	●	●																						
	TSF	WNMG 330.5E TSF	WNMG060402E-TSF	0.2	●																							
		WNMG 331E TSF	WNMG060404E-TSF	0.4	●																							
		WNMG 332E TSF	WNMG060408E-TSF	0.8	●																							
		WNMG 333E TSF	WNMG060412E-TSF	1.2	●																							
		WNMG 431 TSF	WNMG080404-TSF	0.4	●																							
		WNMG 432 TSF	WNMG080408-TSF	0.8	●																							
Medium cutting	TM	WNMG 433 TSF	WNMG080412-TSF	1.2	●																							
		WNMG 331E TM	WNMG060404E-TM	0.4	●																							
		WNMG 332E TM	WNMG060408E-TM	0.8	●																							
		WNMG 333E TM	WNMG060412E-TM	1.2	●																							
		WNMG 431 TM	WNMG080404-TM	0.4	●																							
		WNMG 432 TM	WNMG080408-TM	0.8	●																							
		WNMG 433 TM	WNMG080412-TM	1.2	●																							
Finishing to medium cutting	HRM	WNMG 434 TM	WNMG080416-TM	1.6	●																							
		WNMG 431 HRM	WNMG080404-HRM	0.4	●	●																						
		WNMG 432 HRM	WNMG080408-HRM	0.8	●	●																						
	TH	WNMG 433 HRM	WNMG080412-HRM	1.2	●	●																						
		WNMG 432 TH	WNMG080408-TH	0.8	●																							
		WNMG 433 TH	WNMG080412-TH	1.2	●																							
		WNMG 434 TH	WNMG080416-TH	1.6	●																							

● : Line-up

- : Continuous cutting
- ◐ : Light interrupted cutting
- ⊛ : Heavy interrupted cutting

TurnLine - Inserts

POSITIVE TYPE



Rhombic, 80°
with hole
Positive 7°

P	Steel																												
M	Stainless	●	◐																										
K	Cast iron																												
N	Non-ferrous																												
S	Superalloys	●	◐																										
H	Hard materials																												

Application	Chipbreaker	Designation		Corner radius	Coating																								
		Inch	Metric		AH8005	AH8015																							
		PSF	CCMT 21.51 PSF				CCMT060204-PSF	0.4	●	●																			
Finishing			CCMT 32.51 PSF	CCMT09T304-PSF	0.4	●	●																						
Finishing to light cutting		PSS	CCMT 21.51 PSS	CCMT060204-PSS	0.4	●	●																						
			CCMT 21.52 PSS	CCMT060208-PSS	0.8	●	●																						
			CCMT 32.51 PSS	CCMT09T304-PSS	0.4	●	●																						
			CCMT 32.52 PSS	CCMT09T308-PSS	0.8	●	●																						
Finishing to medium cutting		PS	CCMT 21.50.5 PS	CCMT060202-PS	0.2	●	●																						
			CCMT 21.51 PS	CCMT060204-PS	0.4	●	●																						
			CCMT 21.52 PS	CCMT060208-PS	0.8	●	●																						
			CCMT 32.50.5 PS	CCMT09T302-PS	0.2	●	●																						
			CCMT 32.51 PS	CCMT09T304-PS	0.4	●	●																						
			CCMT 32.52 PS	CCMT09T308-PS	0.8	●	●																						
			CCMT 431 PS	CCMT120404-PS	0.4	●	●																						
			CCMT 432 PS	CCMT120408-PS	0.8	●	●																						
For external turning on Swiss lathes		JS	CCGT 21.50N-JS	CCGT060201N-JS	0.1	●	●																						
			CCGT 21.50.5N-JS	CCGT060202N-JS	0.2	●	●																						
			CCGT 21.51N-JS	CCGT060204N-JS	0.4	●	●																						
			CCGT 32.50N-JS	CCGT09T301N-JS	0.1	●	●																						
			CCGT 32.50.5N-JS	CCGT09T302N-JS	0.2	●	●																						
			CCGT 32.51N-JS	CCGT09T304N-JS	0.4	●	●																						
For external turning on Swiss lathes (sharp edge)		JS	CCGT 21.50N-JS	CCGT060201FN-JS	<0.1	●	●																						
			CCGT 21.50.5N-JS	CCGT060202FN-JS	<0.2	●	●																						
			CCGT 21.51N-JS	CCGT060204FN-JS	<0.4	●	●																						
			CCGT 32.50N-JS	CCGT09T301FN-JS	<0.1	●	●																						
			CCGT 32.50.5N-JS	CCGT09T302FN-JS	<0.2	●	●																						
			CCGT 32.51N-JS	CCGT09T304FN-JS	<0.4	●	●																						

● : Line-up

TurnLine - Inserts

● : Continuous cutting
 ● : Light interrupted cutting
 ⊛ : Heavy interrupted cutting

POSITIVE TYPE



P	Steel																						
M	Stainless	●	●																				
K	Cast iron																						
N	Non-ferrous																						
S	Superalloys	●	●																				
H	Hard materials																						

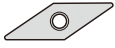
Application	Chipbreaker	Designation		Corner radius	Coating																			
		Inch	Metric		AH8005	AH8015																		
		PSF	DCMT 32.51 PSF		DCMT11T304-PSF	0.4	●	●																
Finishing		DCMT 32.52 PSF	DCMT11T308-PSF	0.8	●	●																		
Finishing to light cutting		PSS	DCMT 32.51 PSS	DCMT11T304-PSS	0.4	●	●																	
			DCMT 32.52 PSS	DCMT11T308-PSS	0.8	●	●																	
			DCMT 32.53 PSS	DCMT11T312-PSS	1.2	●	●																	
Finishing to medium cutting		PS	DCMT 21.50.5 PS	DCMT070202-PS	0.2	●	●																	
			DCMT 21.51 PS	DCMT070204-PS	0.4	●	●																	
			DCMT 21.52 PS	DCMT070208-PS	0.8	●	●																	
			DCMT 32.50.5 PS	DCMT11T302-PS	0.2	●	●																	
			DCMT 32.51 PS	DCMT11T304-PS	0.4	●	●																	
			DCMT 32.52 PS	DCMT11T308-PS	0.8	●	●																	
			DCMT 32.53 PS	DCMT11T312-PS	1.2	●	●																	
For external turning on Swiss lathes (sharp edge)		JS	DCMT 21.50FN-JS	DCGT070201FN-JS	<0.1	●	●																	
			DCMT 21.50.5FN-JS	DCGT070202FN-JS	<0.2	●	●																	
			DCMT 32.50FN-JS	DCGT11T301FN-JS	<0.1	●	●																	
			DCMT 32.50.5FN-JS	DCGT11T302FN-JS	<0.2	●	●																	
			DCMT 32.51FN-JS	DCGT11T304FN-JS	<0.4	●	●																	
For external turning on Swiss lathes		JS	DCGT 21.50N-JS	DCGT070201N-JS	0.1	●	●																	
			DCMT 21.50.5N-JS	DCGT070202N-JS	0.2	●	●																	
			DCMT 32.50N-JS	DCGT11T301N-JS	0.1	●	●																	
			DCMT 32.50.5N-JS	DCGT11T302N-JS	0.2	●	●																	
			DCMT 32.51N-JS	DCGT11T304N-JS	0.4	●	●																	

● : Line-up

TurnLine - Inserts

- : Continuous cutting
- : Light interrupted cutting
- : Heavy interrupted cutting

POSITIVE TYPE



**Rhombic, 35°
with hole
Positive 7°**

P	Steel																			
M	Stainless	●	●																	
K	Cast iron																			
N	Non-ferrous																			
S	Superalloys	●	●																	
H	Hard materials																			

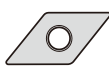
Application	Chipbreaker	Designation		Corner radius	Coating																												
		Inch	Metric		AH8005	AH8015																											
Finishing		PSF	VCMT 331 PSF	VCMT160404-PSF	0.4	●	●																										
			VCMT 332 PSF	VCMT160408-PSF	0.8	●	●																										
Finishing to light cutting		PSS	VCMT 331 PSS	VCMT160404-PSS	0.4	●	●																										
			VCMT 332 PSS	VCMT160408-PSS	0.8	●	●																										
Finishing to medium cutting		PS	VCMT 220.5 PS	VCMT110302-PS	0.2	●	●																										
			VCMT 221 PS	VCMT110304-PS	0.4	●	●																										
			VCMT 222 PS	VCMT110308-PS	0.8	●	●																										
			VCMT 331 PS	VCMT160404-PS	0.4	●	●																										
			VCMT 332 PS	VCMT160408-PS	0.8	●	●																										
Medium cutting		All-round	VCMT 331	VCMT160404	0.4	●	●																										
			VCMT 332	VCMT160408	0.8	●	●																										
			VCMT 333	VCMT160412	1.2	●	●																										

● : Line-up



TurnLine - Inserts

● : Continuous cutting
 ● : Light interrupted cutting
 ✱ : Heavy interrupted cutting

POSITIVE TYPE

 **Rhombic,
55° with hole**

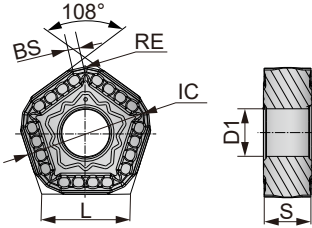
P Steel	
M Stainless	●
K Cast iron	●
N Non-ferrous	●
S Superalloys	●
H Hard materials	●

Application	Chipbreaker	Designation		Corner radius	Coated																					
		Inch	Metric		AH8015																					
Finishing to medium cutting		TS	DXGU 220.5R TS	DXGU070302R-TS	0.2	●																				
			DXGU 220.5L TS	DXGU070302L-TS	0.2	●																				
			DXGU 221R TS	DXGU070304R-TS	0.4	●																				
			DXGU 221L TS	DXGU070304L-TS	0.4	●																				
			DXGU 222R TS	DXGU070308R-TS	0.8	●																				
			DXGU 222L TS	DXGU070308L-TS	0.8	●																				
Finishing (Low cutting force)		SS	DXGU 220.5R SS	DXGU070302R-SS	0.2	●																				
			DXGU 220.5L SS	DXGU070302L-SS	0.2	●																				
			DXGU 221R SS	DXGU070304R-SS	0.4	●																				
			DXGU 221L SS	DXGU070304L-SS	0.4	●																				

* Corner radius has minus tolerance

● : Line up

POMG-MNW



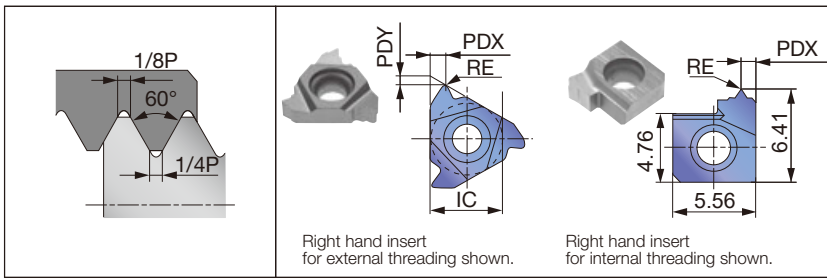
	P	M	K	N	S	H
Steel						
Stainless						
Cast iron						
Non-ferrous						
Superalloys						
Hard materials						

● : Continuous cutting
 ● : Light interrupted cutting
 ✖ : Heavy interrupted cutting

Designation	Corner radius	Coated						IC (mm)	L (mm)	BS (mm)	S (mm)	D1 (mm)
		AH8015										
POMG110612-MNW	1.2	●					15.875	11.53	1.5	6.35	6.35	
POMG130612-MNW	1.2	●					19.050	13.84	2.0	6.35	7.93	

● : Line up

ISO metric



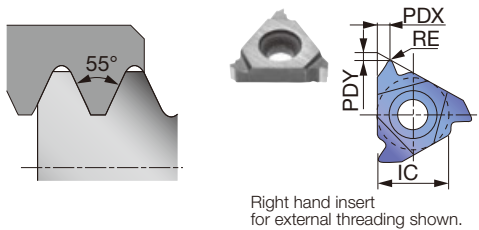
Full-profile inserts

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (mm)						
				Designation	Grades		IC	PDX	PDY	RE
					Coating					
					AH8015					
16	2	R	16ER20ISO	●		9.525	1.6	1.2	0.25	

Full-profile inserts with chipbreaker

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (mm)							Internal insert (mm)						
				Designation	Grades		IC	PDX	PDY	RE	Designation	Grades		IC	PDX	PDY	RE
					Coating												
					AH8015												
16	1	R	16ER10ISO-M	●		9.525	0.9	0.7	0.13	16IR10ISO-M	●		9.525	0.9	0.7	0.08	
16	1.25	R	16ER125ISO-M	●		9.525	0.9	0.7	0.16	16IR125ISO-M	●		9.525	0.9	0.7	0.1	
16	1.5	R	16ER15ISO-M	●		9.525	0.9	0.7	0.19	16IR15ISO-M	●		9.525	0.9	0.7	0.12	

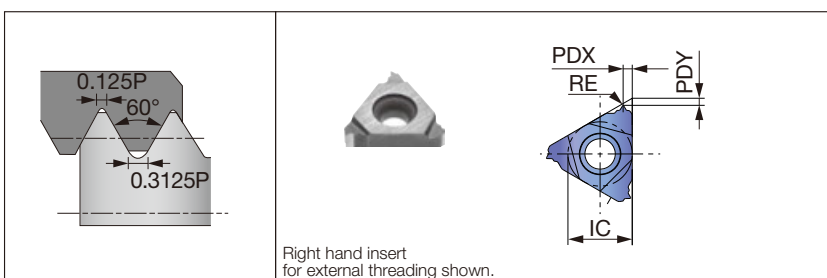
Whitworth



Full-profile inserts

Insert size	Pitch (Reference) (mm)	TPI	Hand of cut	External insert (mm)							Internal insert (mm)						
				Designation	Grades		IC	PDX	PDY	RE	Designation	Grades		IC	PDX	PDY	RE
					Coating												
					AH8015												
16	(1.814)	14	R	16ER14W-M	●		9.525	1.6	1.2	0.23	16IR14W-M	●		9.525	1.6	1.2	0.23

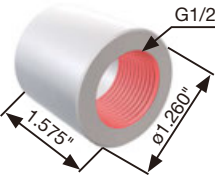
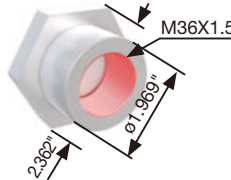
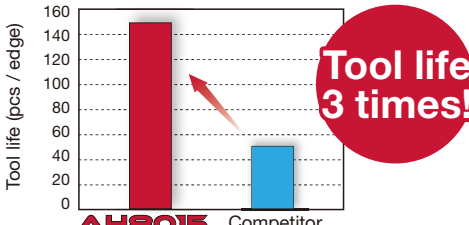
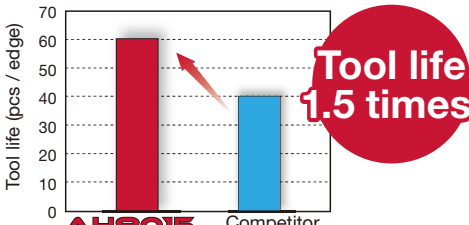
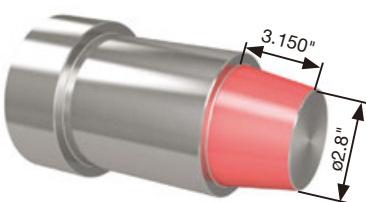
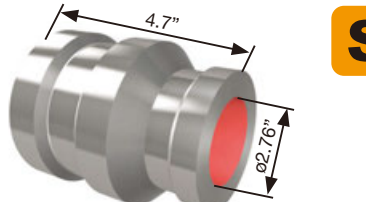
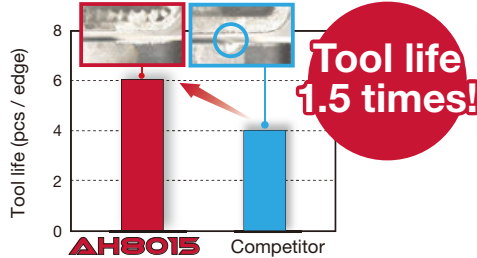
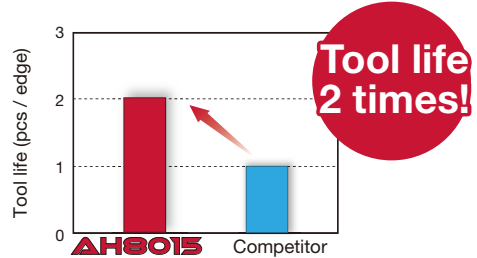
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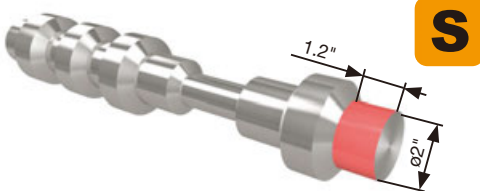
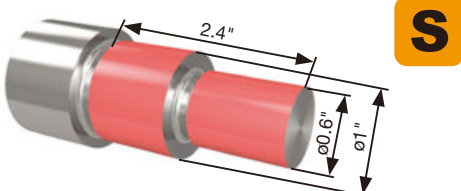
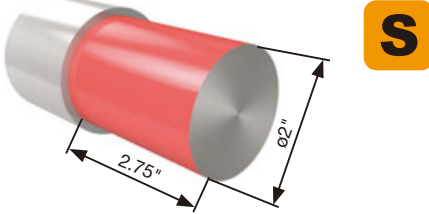
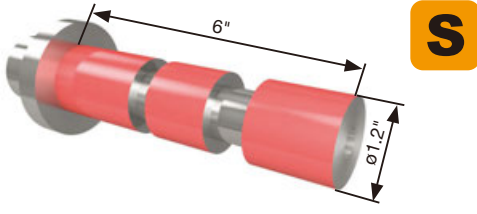


Insert size	Pitch (Reference) (mm)	TPI	Hand of cut	External insert (mm)						
				Designation	Grades		IC	PDX	PDY	RE
					Coating					
					AH8015					
11	1	R	11IR10MJ	●		6.35	0.9	0.7	0.05	

● : Line up

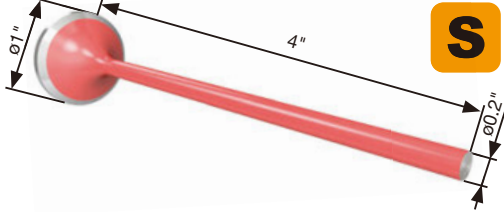
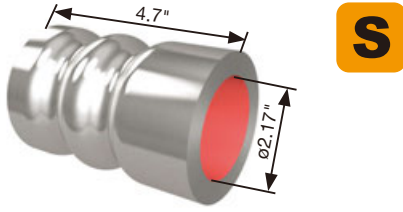
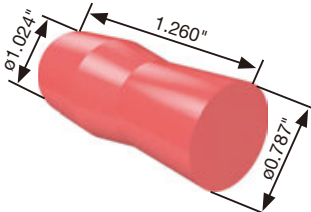
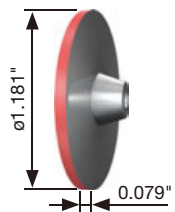
PRACTICAL EXAMPLES

Workpiece type		Pipe	End cover
Insert		16IR14W-M	16IR15ISO-M
Grade		AH8015	AH8015
Workpiece material		SUS304, X5CrNi18-9 	SCM440, 42CrMo4 
Cutting conditions	Thread	G1/2 (14TPI)	M36X1.5
	Thread depth : (in)	0.630	0.748
	Cutting speed : Vc (sfm)	262	361
	Pass number (pass)	8	6
	Infeed method	Radial infeed	Radial infeed
	Coolant	Wet	Wet
Results		 <p>Tool life 3 times!</p> <p>AH8015 high wear resistance and high chipping resistance extends tool life by 3 times.</p>	 <p>Tool life 1.5 times!</p> <p>AH8015 high wear resistance extends tool life by 1.5 times also for alloy steel.</p>
Workpiece type		Valve parts	Aircraft parts
Insert		CNMG 432 HRM	CNMG 432 HRM
Grade		AH8015	AH8015
Workpiece material		Inconel 625 	Inconel 718 
Cutting conditions	Cutting speed: Vc (sfm)	100	130
	Feed : f (ipr)	0.008	0.009
	Depth of cut : ap (in)	0.059	0.078
	Coolant	Wet	Wet
Results		 <p>Tool life 1.5 times!</p> <p>AH8015 with HRM chipbreaker greatly reduces notch wear and extends tool life by 1.5 times.</p>	 <p>Tool life 2 times!</p> <p>AH8015 wear and fracture resistance doubles tool life.</p>

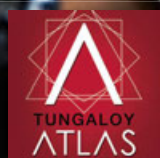
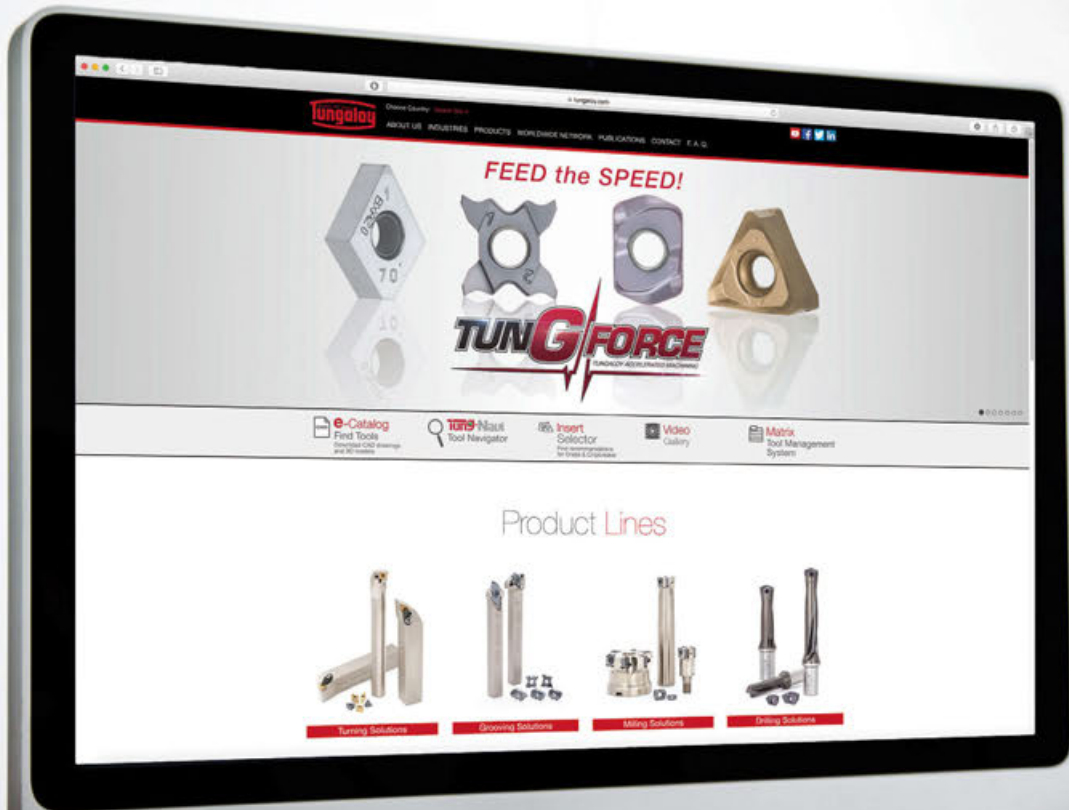
Workpiece type		Shaft parts	Valve parts												
Insert		CNMG 432 HRM	CNMG 432 HRM												
Grade		AH8005	AH8005												
Workpiece material		Inconel 718	Inconel 718												
Cutting conditions															
Cutting speed: V_c (sfm)		160	260												
Feed : f (ipr)		0.011	0.008												
Depth of cut : a_p (in)		0.138	0.039 - 0.059												
Coolant		Wet	Wet												
Results		 <p>Tool life 1.5 times!</p> <p> <table border="1"> <tr><th>Tool</th><th>Tool life (pcs / edge)</th></tr> <tr><td>AH8005 HRM</td><td>3</td></tr> <tr><td>Competitor</td><td>2</td></tr> </table> </p> <p>AH8005 with high wear resistance extends tool life by 1.5 times.</p>	Tool	Tool life (pcs / edge)	AH8005 HRM	3	Competitor	2	 <p>Tool life 1.2 times!</p> <p> <table border="1"> <tr><th>Tool</th><th>Tool life (pcs / edge)</th></tr> <tr><td>AH8005 HRM</td><td>24</td></tr> <tr><td>Competitor</td><td>20</td></tr> </table> </p> <p>Due to outstanding wear resistance, AH8005 extends tool life by 1.2 times.</p>	Tool	Tool life (pcs / edge)	AH8005 HRM	24	Competitor	20
Tool	Tool life (pcs / edge)														
AH8005 HRM	3														
Competitor	2														
Tool	Tool life (pcs / edge)														
AH8005 HRM	24														
Competitor	20														
Workpiece type		Tube parts	Aircraft parts												
Insert		CNMG 432 HRF	CNMG 433 HRF												
Grade		AH8015	AH8015												
Workpiece material		Hastelloy 276	Inconel 909												
Cutting conditions															
Cutting speed: V_c (sfm)		260	180												
Feed : f (ipr)		0.004	0.012												
Depth of cut : a_p (in)		0.059" x 8 pass	0.020												
Coolant		Wet	Wet												
Results		 <p>Tool life 4 times!</p> <p> <table border="1"> <tr><th>Tool</th><th>Tool life (pcs / edge)</th></tr> <tr><td>AH8015 HRF</td><td>4</td></tr> <tr><td>Competitor</td><td>1</td></tr> </table> </p> <p>AH8015 has good balance between wear and fracture resistance, increasing tool life by 4 times.</p>	Tool	Tool life (pcs / edge)	AH8015 HRF	4	Competitor	1	 <p>Tool life 1.5 times!</p> <p> <table border="1"> <tr><th>Tool</th><th>Tool life (pcs / edge)</th></tr> <tr><td>AH8015 HRF</td><td>6</td></tr> <tr><td>Competitor</td><td>4</td></tr> </table> </p> <p>AH8015 provides better surface finish and extends tool life by 1.5 times.</p>	Tool	Tool life (pcs / edge)	AH8015 HRF	6	Competitor	4
Tool	Tool life (pcs / edge)														
AH8015 HRF	4														
Competitor	1														
Tool	Tool life (pcs / edge)														
AH8015 HRF	6														
Competitor	4														

AH8000 SERIES

TUNGALOY

Workpiece type		Valve parts	Aircraft parts
Insert		CNMG 432 HRF	CNMG 432 HRF
Grade		AH8005	AH8005
Workpiece material		Inconel 718	Inconel 718
Cutting conditions			
Cutting speed: V_c (sfm)		330	230
Feed : f (ipr)		0.004 - 0.006	0.007
Depth of cut : a_p (in)		0.012	0.020
Coolant		Wet	Wet
Results		 <p>Tool life 1.5 times!</p> <p>AH8005 delivers outstanding wear resistance, increasing tool life by 1.5 times.</p>	 <p>Tool life 1.3 times!</p> <p>AH8005 with excellent wear resistance, provides good surface quality and extends tool life by 1.3 times.</p>
Workpiece type		Seal pin	Turbine parts
Insert		VCMT432-PS	CCMT09T304-PSF
Grade		AH8005	AH8005
Workpiece material		Inconel 718	Inconel 718
Cutting conditions			
Cutting speed: V_c (sfm)		150	330
Feed : f (ipr)		0.008	0.005
Depth of cut : a_p (in)		0.020	0.003
Machining		External turning and facing	External turning
Coolant		Wet	Wet
Results		 <p>Tool life 2 times!</p> <p>AH8005 with PS chipbreaker improves productivity by 1.3 times due to increased feed rate and speed, doubling tool life.</p>	 <p>Tool life 1.5 times!</p> <p>AH8005 with PSF chipbreaker provides excellent chip control and wear resistance, extending tool life by 1.5 times.</p>

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www.tungaloy.com

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