

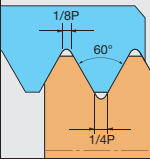
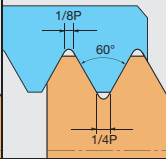
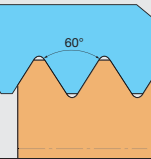
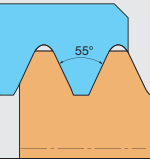
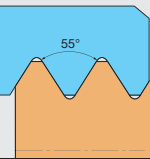
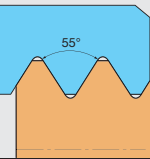
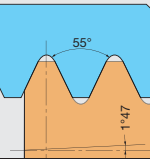
New threading inserts

# TUNGTHREAD

**Best Performance in Threading  
Efficient Threading with Various Thread Types**



## Thread types and applicable inserts

Thread Types		ISO metric 60°		Unified 60°		General 60°		Whitworth 55°		General 55°		Parallel 55°		JIS taper pipe 55°		
																
		<b>M</b> M8 M8x1		<b>UNC</b> 3/8-16UNC <b>UNF</b> No.8-36UNF <b>UNEF</b> 1/4-32UNEF				<b>W</b> W3/4 W50/7				<b>G</b> G1/2 <b>PF</b> PF7 <b>Rp</b> Rp3/4 <b>PS</b> PS7		<b>R</b> R3/4 <b>PT</b> PT7 <b>Rc</b> Rc3/4		
		Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	
External thread	Partial-profile					0.5~1.5 0.5~3 1.75~3 0.5~3 4~6	48~16 48~8 14~8 7~5 6~4			0.5~1.5 0.5~3 1.75~3 0.5~3	48~16 48~8 14~8 7~5					
	Partial-profile with chip-breaker					0.5~1.5 0.5~3 1.75~3	48~16 48~8 14~8			0.5~3 1.75~3	7~5 14~8					
	Full-profile	0.5			(0.794)	32			(0.907)	28			(0.907)	28	(1.337)	19
		0.75			(0.907)	28			(0.970)	26			(0.970)	26	(1.814)	14
		1			(1.058)	24			(1.270)	20			(1.270)	20	(0.907)	28
		1.25			(1.270)	20			(1.411)	18			(1.411)	18	(2.309)	11
		1.5			(1.411)	18			(1.588)	16			(1.588)	16		
		1.75			(1.588)	16			(1.814)	14			(1.814)	14		
		2			(1.814)	14			(2.117)	12			(2.117)	12		
		2.5			(1.954)	13			(2.309)	11			(2.309)	11		
		3			(2.117)	12			(2.540)	10			(2.540)	10		
		3.5			(2.309)	11			(2.822)	9			(2.822)	9		
4			(2.540)	10			(3.175)	8			(3.175)	8				
4.5			(2.822)	9			(3.629)	7			(3.629)	7				
5			(3.175)	8			(4.233)	6			(4.233)	6				
6			(3.629)	7			(5.080)	5			(5.080)	5				
Full-profile with chip-breaker	0.5				24			(1.337)	19			(1.337)	19	(1.337)	19	
	0.75				20			(1.588)	16			(1.588)	16	(1.814)	14	
	1				18			(1.814)	14			(1.814)	14	(2.309)	11	
	1.25				16			(2.309)	11			(2.309)	11			
	1.5				14											
	1.75				13											
	2				12											
	2.5				8											
	3															
Internal thread	Partial-profile					0.5~1.5 0.5~3 1.75~3 0.5~3 4~6	48~16 48~8 14~8 7~5 6~4			0.5~1.5 0.5~3 1.75~3 0.5~3	48~16 48~8 14~8 7~5					
	Partial-profile with chip-breaker					0.5~1.5 0.5~3 1.75~3	48~16 48~8 14~8			0.5~3 1.75~3	7~5 14~8					
	Full-profile	0.5			(0.794)	32			(1.337)	19	(1.337)	19	(1.337)	19	(1.337)	19
		0.75			(0.907)	28			(1.814)	14			(1.814)	14	(1.814)	14
		1			(1.058)	24			(0.907)	28			(0.907)	28	(0.907)	28
		1.25			(1.270)	20			(0.970)	26			(0.970)	26	(2.309)	11
		1.5			(1.411)	18			(1.270)	20			(1.270)	20		
		1.75			(1.588)	16			(1.411)	18			(1.411)	18		
		2			(1.814)	14			(1.588)	16			(1.588)	16		
		2.5			(1.954)	13			(1.814)	14			(1.814)	14		
		3			(2.117)	12			(2.117)	12			(2.117)	12		
		3.5			(2.309)	11			(2.309)	11			(2.309)	11		
4			(2.540)	10			(2.540)	10			(2.540)	10				
4.5			(2.822)	9			(2.822)	9			(2.822)	9				
5			(3.175)	8			(3.175)	8			(3.175)	8				
6			(3.629)	7			(3.629)	7			(3.629)	7				
			(4.233)	6			(4.233)	6			(4.233)	6				
			(5.080)	5			(5.080)	5			(5.080)	5				
Full-profile with chip-breaker	0.5				20			(1.337)	19			(1.337)	19	(1.337)	19	
	0.75				18			(1.588)	16			(1.588)	16	(1.814)	14	
	1				16			(1.814)	14			(1.814)	14	(2.309)	11	
	1.25				14			(2.309)	11			(2.309)	11			
	1.5				14											
	1.75				13											
	2				12											
	2.5				8											
	3															

\* ( ) is reference

	American National pipe 60°		Trapezoidal 30°		Trapezoidal 29°		Oil well pipe				Round DIN405		Aerospace			
							Round		Buttress							
	<b>NPT</b> 3/8-18NPT		<b>NPTF</b>		<b>Tr</b> Tr10x2 <b>TM</b> TM10		<b>TW</b> TW20 <b>ACME</b> 3/8-12ACME		<b>RAPI</b>		<b>BAPI</b>		<b>Rd</b>		<b>UNJ</b>	
	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI	Pitch	TPI
Partial-profile					1.5 2 3 4 5 6		(2.117) (2.540) (3.175) (4.233) (5.080)	12 10 8 6 5								
Partial-profile with chip-breaker																
Full-profile	(0.941) (1.411) (1.814) (2.209) (3.175)	27 18 14 11.5 8	(0.941) (1.411) (1.814) (2.209) (3.175)	27 18 14 11.5 8					(2.540) (3.175)	10 8	(2.540)	10				32 28 24 20 18 16 14 12 10 8
Full-profile with chip-breaker	(1.411) (1.814) (2.209) (3.175)	18 14 11.5 8														
Partial-profile					1.5 2 3 4 5		(2.117) (2.540) (3.175) (4.233) (5.080)	12 10 8 6 5								
Partial-profile with chip-breaker																
Full-profile	(0.941) (1.411) (1.814) (2.209) (3.175)	27 18 14 11.5 8	(1.814) (2.209) (3.175)	14 11.5 8					(2.540) (3.175)	10 8	(2.540)	10				
Full-profile with chip-breaker	(1.411) (1.814) (2.209) (3.175)	18 14 11.5 8														

● **When machining trapezoidal threads:**  
 In trapezoidal threads, since slants of 15° to 30° are left on the crest of the thread as shown in Figure below, these portions must be finished later. Burrless threads can be produced with the full-profile insert.

Trapezoidal thread

Thread height

15° ~ 30°

Portion to be finished later

**Partial-profile inserts**

**Full-profile inserts**

Surface turned in preceding operation

Finishing stock 0.1 ~ 0.2

Thread

Full-profile inserts

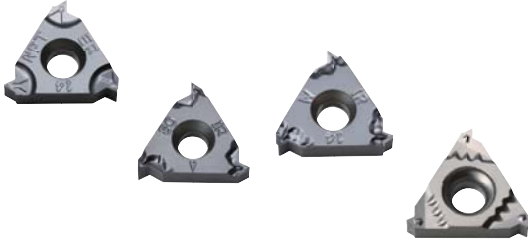
Crest (finished with threading insert)

# Incredible threading productivity in a variety of threads with the new “**TUNGTHREAD**” series

## Features

### 1 Global Standard

- Available with a large variety of thread standards



### 2 Excellent Cutting Performance

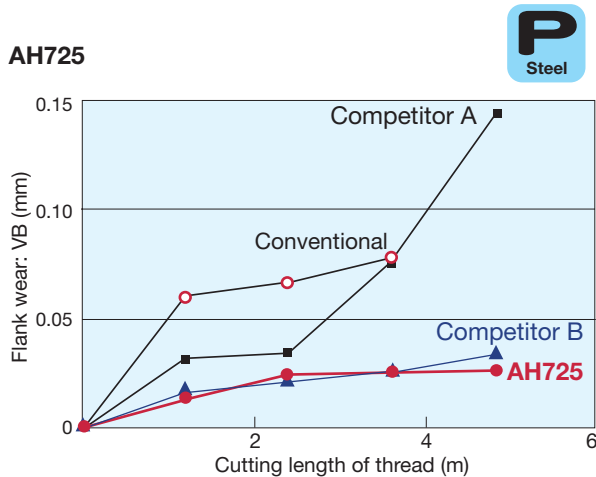
- Improves profile accuracy and chip flow
- New coating delivers long tool life
- User-friendly insert identification with clear marking

**Power Up**

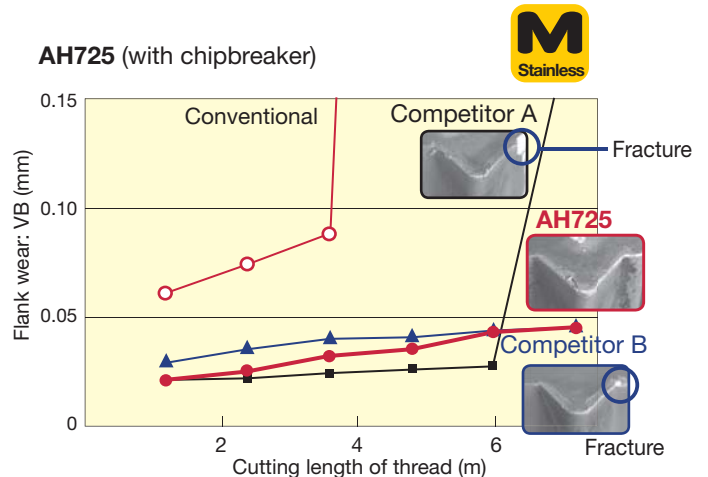


## Cutting performance

Long tool life and excellent wear resistance



Work material : S45C (153HB)  
 Inse rt : 16ER15ISO AH725  
 Cutting speed :  $V_c = 150$  m/min  
 Pitch : 1.5 mm  
 No. of passes : 7 times  
 Infeed method : Radial infeed  
 Cutting fluids : Wet



Work material : SUS304 (195HB)  
 Insert : 16ER15ISO-B AH725  
 Cutting speed :  $V_c = 100$  m/min  
 Pitch : 1.5 mm  
 No. of passes : 11 times  
 Infeed method: Radial infeed  
 Cutting fluids : Wet

## Standard cutting conditions

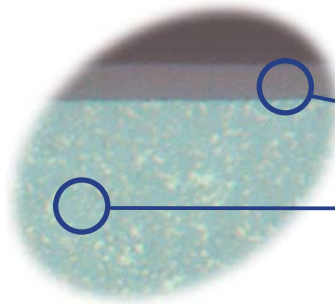
Work material	Hardness	Cutting speed : $V_c$ (m/min)			
		AH725	T313V	NS9530, NS730	TH10
Carbon steels	< 200HB	80 ~ 180	100 ~ 200	150 ~ 200	
	> 200HB	60 ~ 160	100 ~ 150	100 ~ 170	
Stainless steels		50 ~ 130	70 ~ 130		
Cast irons			70 ~ 150		70 ~ 90
Non-ferrous metals					100 ~ 500
Heat-resisting alloys					10 ~ 40
Hard materials	50 ~ 60HRC				10 ~ 30

# Grades

## PVD coated carbide **AH725**



Improved wear and fracture resistance combined with New (Ti, Al)N coating and well-balanced substrate.



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

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

## Cermet **NS9530** **New**

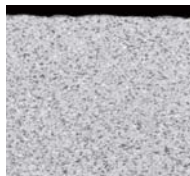


### ● Tough and smooth top layer

Creates the ideal balance of hardness and toughness due to the controlled crystal composition



Consists of incredible fracture and wear resistance  
**Allows exceptionally stable machining!**

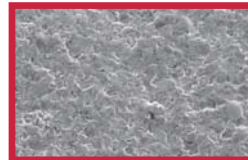


Improved toughness by 25% at the top layer

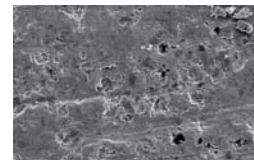
### ● Drastically improved microscopic roughness

Effectively reduces chip welding on edges, improving surface finish. Enhances wear resistance

**NS9530**



**Conventional**

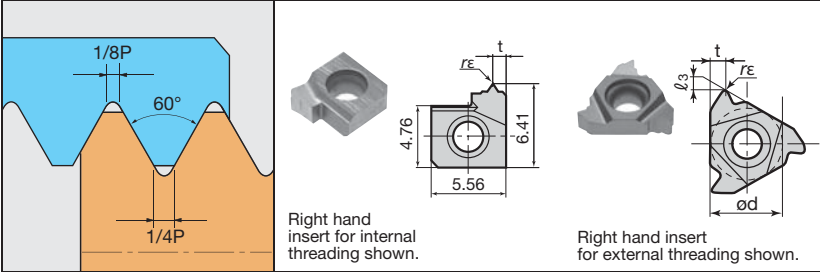


Application	Grade	Substrate			Coating layer		Features
	Application code	Specific gravity	Hardness (HRA)	Transverse rupture strength (GPa)	Main Composition	Thickness (μm)	
<b>P</b> Steel	AH725	14.4	91.5	3.0	(Ti,Al)N	2	General grade Excellent wear resistance and toughness
	P20 - P30						
	NS730	-	-	-	-	-	Cermet for steels Excellent surface finishing
	-						
	NS9530	-	-	-	-	-	Cermet for steels Excellent surface finishing Both wear and fracture resistance are well
	-						
T313V	14.5	90.5	2.3	+ Al <sub>2</sub> O <sub>3</sub>	3	For threading Features specially engineered substrate with excellent impact resistance and plastic deformation with a controlled coating composition	
-							
<b>M</b> Stainless	AH725	14.4	91.5	3.0	(Ti,Al)N	2	General grade Excellent wear resistance and toughness
	M20 - M30						
	T313V	14.5	90.5	2.3	+ Al <sub>2</sub> O <sub>3</sub>	3	For threading Features specially engineered substrate with excellent impact resistance and plastic deformation with a controlled coating composition
-							
<b>K</b> Cast iron	T313V	14.5	90.5	2.3	+ Al <sub>2</sub> O <sub>3</sub>	3	For threading Features specially engineered substrate with excellent impact resistance and plastic deformation with a controlled coating composition
	-						
	TH10	14.7	92.0	2.4	-	-	General turning of cast irons Excellent hardness and toughness
-							
<b>N</b> Non-ferrous	TH10	14.7	92.0	2.4	-	-	General turning of non-ferrous materials Excellent hardness and toughness
	-						
<b>S</b> Super alloy	TH10	14.7	92.0	2.4	-	-	General turning of super alloys Excellent hardness and toughness
	-						
<b>H</b> Hard Materials	TH10	14.7	92.0	2.4	-	-	General turning of hard material Excellent hardness and toughness
	-						

## Insert Specification

Note: There are the different dimensions of “ $l_3$ ” and “ $t$ ” with the inserts, AH725 grade with chipbreaker – ONLY 16 SIZE.  
Please be aware of these differences.

### ISO metric



### Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
11		SNR/L□□□□□11□□
16	CER/L□□□□□16□□ B-SER/L□□□□16 B-CER/L□□□□16 BC-SER/L□□□□16	TSNR/L□□□□□16 SNR/L□□□□□16□□ TCNR/L□□□□□16□□ CNR/L□□□□□16□□
22	CER/L□□□□□22□□	TSNR/L□□□□□22 SNR/L□□□□□22□□ TCNR/L□□□□□22□□ CNR/L□□□□□22□
27	CER/L□□□□□27□	CNR/L□□□□□27□

### Full-profile inserts

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert											
				Cat. No.	Grades			Dimensions (mm)				Cat. No.	Grades			Dimensions (mm)			
					AH725	T313V	TH10	$\phi d$	$t$	$l_3$	$r_E$		AH725	T313V	TH10	$\phi d$	$t$	$l_3$	$r_E$
6	0.75	R							61R075ISO	●		●	-	0.5	-	-	0.05		
	1.0							61R10ISO	●		●	0.07							
	1.25							61R125ISO	●		●	0.09							
	1.5							61R15ISO	●		●	0.11							
	1.75							61R175ISO	●		●	0.12							
	2.0							61R20ISO	●		●	0.14							
11	0.5	R							111R05ISO	●		●	6.35	0.5	1.2	-	0.04		
	0.75									111R075ISO	●						●	0.05	
	1.0	R								111R10ISO	●	●	●	0.9	0.7	-	0.07		
		L								111L10ISO	●						0.09		
	1.25	R								111R125ISO	●			0.9	0.7	-	0.11		
		L								111L125ISO	●						0.12		
	1.5	R								111R15ISO	●	●	●	0.9	0.7	-	0.14		
		L								111L15ISO	●						0.14		
	1.75	R								111R175ISO	●	●		0.9	0.7	-	0.11		
		L								111L175ISO	●						0.12		
2.0	R								111R20ISO	●	●		0.9	0.7	-	0.11			
	L								111L20ISO	●						0.14			
16	0.5	R	16ER05ISO	●		●	9.525	0.5	1.2	0.06	161R05ISO	●		9.525	0.5	1.2	-	0.04	
	0.75		16ER075ISO	●	●	●					161R075ISO	●						●	0.05
	1.0	R	16ER10ISO	●	●	●		0.9	0.7	0.13	161R10ISO	●	●	●	0.9	0.7	-	0.07	
		L	16EL10ISO								161L10ISO	●						0.09	
	1.25	R	16ER125ISO	●	●			0.9	0.7	0.16	161R125ISO	●			0.9	0.7	-	0.09	
		L	16EL125ISO								161L125ISO	●						0.11	
	1.5	R	16ER15ISO	●	●	●		0.9	0.7	0.19	161R15ISO	●	●	●	0.9	0.7	-	0.11	
		L	16EL15ISO								161L15ISO	●						0.12	
	1.75	R	16ER175ISO	●	●			1.6	1.2	0.22	161R175ISO	●	●		1.6	1.2	-	0.12	
		L	16EL175ISO								161L175ISO	●						0.14	
	2.0	R	16ER20ISO	●	●	●		1.6	1.2	0.25	161R20ISO	●	●	●	1.6	1.2	-	0.14	
		L	16EL20ISO	●							161L20ISO	●						0.18	
2.5	R	16ER25ISO	●	●	●	1.6	1.2	0.31	161R25ISO	●	●	●	1.6	1.2	-	0.18			
	L	16EL25ISO							161L25ISO	●						0.21			
3.0	R	16ER30ISO	●	●	●	1.6	1.2	0.38	161R30ISO	●	●	●	1.6	1.2	-	0.21			
	L	16EL30ISO							161L30ISO	●						0.25			
22	3.5	R	22ER35ISO	●	●		12.7	2.5	1.7	0.44	221R35ISO	●	●	12.7	2.5	1.7	-	0.25	
	4.0		22ER40ISO	●	●					0.50	221R40ISO	●	●					0.28	
	4.5		22ER45ISO	●						0.56	221R45ISO	●						0.32	
	5.0		22ER50ISO	●	●					0.63	221R50ISO	●	●					0.35	
27	6.0	R	27ER60ISO	●	●		15.875	3.2	2.2	0.75	271R60ISO	●	●	15.875	3.2	2.2	0.42		

◆● : Stocked items / Packing Quantity = 5 pcs.

## Full-profile inserts with chipbreaker

Insert size	Pitch	Number of threads	Hand of cut	External insert						Internal insert									
				Cat. No.	Grades			Dimensions (mm)			Cat. No.	Grades			Dimensions (mm)				
					Coated	Cermet		$\phi d$	t	$l_3$		$r_\epsilon$	Coated	Cermet		$\phi d$	t	$l_3$	$r_\epsilon$
						AH725	NS730							New NS9530	AH725				
11	0.5	R							11IR05ISO-B	●	●	●	6.35	0.5	1.2	0.04			
	0.75	R						11IR075ISO-B	●	●	●	0.05							
	1.0	R						11IR10ISO-B	●	●	●	0.08							
	1.25	R						11IR125ISO-B	●	●	●	0.10							
	1.5	R						11IR15ISO-B	●	●	●	0.12							
	1.75	R						11IR175ISO-B	●	●	●	0.12							
	2.0	R						11IR20ISO-B	●	●	●	0.14							
16	0.5	R	16ER05ISO-B		●	●	9.525	0.5	1.2	0.06									
	0.75	R	16ER075ISO-B	◆	●	●		0.6	0.6	0.08									
	1.0	R	16ER10ISO-B	◆	●	●		0.7	0.7	0.11	16IR10ISO-B	◆			0.7	0.6	0.05		
												●	●	0.9	0.7	0.08			
	1.25	R	16ER125ISO-B	◆	●	●		0.9	0.8	0.14	16IR125ISO-B	◆			0.9	0.8	0.07		
												●	●	0.9	0.7	0.10			
	1.5	R	16ER15ISO-B	◆	●	●		1.0	0.8	0.19	16IR15ISO-B	◆			1.0	0.8	0.08		
												●	●	0.9	0.7	0.12			
	1.75	R	16ER175ISO-B	◆	●	●		1.2	0.9	0.20	16IR175ISO-B	◆			1.2	0.9	0.10		
												●	●	1.6	1.2	0.14			
	2.0	R	16ER20ISO-B	◆	●	●		1.3	1.0	0.24	16IR20ISO-B	◆			1.3	1.0	0.12		
												●	●	1.6	1.2	0.14			
	2.5	R	16ER25ISO-B	◆	●	●		1.5	1.1	0.30	16IR25ISO-B	◆			1.5	1.1	0.15		
												●	●	1.6	1.2	0.18			
3.0	R	16ER30ISO-B	◆	●	●	1.6	1.2	0.38	16IR30ISO-B	◆			1.5	1.1	0.18				
										●	●	1.6	1.2	0.21					

Note: ◆ Please be aware of the different dimensions regarding "t" & "l<sub>3</sub>".

Required to modify the position of the cutting edge.

Target designation for the replacement of shim.

◆● : Stocked items / Packing Quantity = 5 pcs.

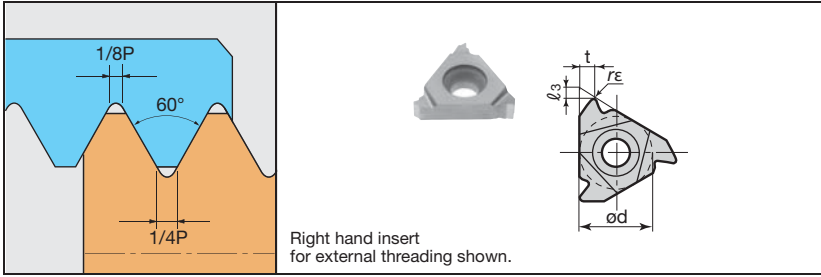
## Designation System for TAC inserts

<b>16</b>	<b>I</b>	<b>R</b>	<b>175</b>	<b>ISO</b>	<b>- B</b>					
①	②	③	④	⑤	⑥					
① Insert size	② External or Internal		③ Hand of insert		④ Pitch (No. of threads)		⑤ Thread type		⑥ Chipbreaker	
Symbol   I. C. dia (mm)	<b>E</b> External	<b>I</b> Internal	<b>R</b> Right hand	<b>L</b> Left hand	<b>Partial-profile inserts</b>		<b>Partial-profile inserts</b>		<b>B</b> With	<b>-</b> Without
06   -	<b>N</b> Ex-Internal				<b>A</b> Pitch: 0.5 ~ 1.5 mm TPI: 48 ~ 16	<b>60°</b> 60° thread angle				
11   6.35					<b>AG</b> Pitch: 0.5 ~ 3.0 mm TPI: 48 ~ 8	<b>55°</b> 55° thread angle				
16   9.525					<b>G</b> Pitch: 1.75 ~ 3.0 mm TPI: 14 ~ 8	<b>TR</b> 30° trapezoidal				
22   12.7					<b>N</b> Pitch: 3.5 ~ 5.0 mm TPI: 7 ~ 5	<b>ACME</b> 29° trapezoidal				
27   15.875					<b>Z</b> Pitch: 4.0 ~ 6.0 mm TPI: 6 ~ 4	<b>RAPI</b> API round				
					<b>Full-profile inserts</b>	<b>BAPI</b> API buttress	<b>Full-profile inserts</b>			
					Metric thread: pitch (mm)×10 or 100 Inch: TPI (TPI / 25.4 mm)	<b>ISO</b> Metric				
					(Examples) 05: 0.5 mm pitch×10 175: 1.75 mm pitch×100 14: 14 TPI / 25.4 mm	<b>UN</b> Unified				
						<b>W</b> Whitworth				
						<b>PT</b> JIS taper pipe				
						<b>NPT</b> National pipe				
						<b>NPTF</b> National pipe				
						<b>RD</b> Round (DIN405)				
						<b>UNJ</b> Aerospace				

Note: Please identify new designation system for internal inserts.  
-i.e. "N" → "I"

(Example) Conventional: 16NR15ISO  
New: 16IR15ISO

**Unified**



Right hand insert for external threading shown.

**Applicable toolholders**

Insert size	External	Internal
11		SNR/L000001100
16	CER/L000001600	TSNR/L0000016
	B-SER/L000016	SNR/L000001600
	B-CER/L000016	TCNR/L000001600
	BC-SER/L000016	CNR/L000001600
22	CER/L000002200	TSNR/L0000022 SNR/L000002200 TCNR/L000002200 CNR/L000002200

**Full-profile inserts**

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert					Internal insert								
				Cat. No.	Grades		Dimensions (mm)			Cat. No.	Grades		Dimensions (mm)				
					Coated		$\varnothing d$	t	$l_3$		$r_{\epsilon}$	Coated		$\varnothing d$	t	$l_3$	$r_{\epsilon}$
					AH725	T313V						AH725	T313V				
11	(0.794)	32	R							<b>11R32UN</b>	●		6.35	0.5	1.2	0.06	
	(0.907)	28	R						<b>11R28UN</b>	●		0.06					
	(1.058)	24	R						<b>11R24UN</b>	●		0.07					
	(1.270)	20	R						<b>11R20UN</b>	●		0.09					
	(1.411)	18	R						<b>11R18UN</b>	●		0.10					
	(1.588)	16	R						<b>11R16UN</b>	●		0.11					
	(1.814)	14	R						<b>11R14UN</b>	●		0.13					
16	(0.794)	32	R	<b>16ER32UN</b>	●		0.5	1.2	0.10	<b>16R32UN</b>	●		9.525	0.5	1.2	0.06	
	(0.907)	28	R	<b>16ER28UN</b>	●					<b>16R28UN</b>	●	0.06					
	(1.058)	24	R	<b>16ER24UN</b>	●					<b>16R24UN</b>	●	0.07					
	(1.270)	20	R	<b>16ER20UN</b>	●		0.9	0.7	0.16	<b>16R20UN</b>	●						0.09
	(1.411)	18	R	<b>16ER18UN</b>	●					<b>16R18UN</b>	●	0.10					
	(1.588)	16	R	<b>16ER16UN</b>	●	●				<b>16R16UN</b>	●	●					0.11
	(1.814)	14	R	<b>16ER14UN</b>	●	●	9.525	0.23	0.23	<b>16R14UN</b>	●	●					0.13
	(1.954)	13	R	<b>16ER13UN</b>	●					<b>16R13UN</b>	●						0.14
	(2.117)	12	R	<b>16ER12UN</b>	●	●				<b>16R12UN</b>	●	●					0.15
	(2.309)	11	R	<b>16ER11UN</b>	●		1.6	1.2	0.29	<b>16R11UN</b>	●						0.16
	(2.540)	10	R	<b>16ER10UN</b>	●					<b>16R10UN</b>	●						0.18
	(2.822)	9	R	<b>16ER9UN</b>	●					<b>16R9UN</b>	●						0.20
(3.175)	8	R	<b>16ER8UN</b>	●	●			0.40	<b>16R8UN</b>	●	●	0.22					
22	(3.629)	7	R	<b>22ER7UN</b>	●		12.7	2.5	1.7	0.45	<b>22R7UN</b>	●		12.7	2.5	1.7	0.25
	(4.233)	6	R	<b>22ER6UN</b>	●					0.53	<b>22R6UN</b>	●					0.30
	(5.080)	5	R	<b>22ER5UN</b>	●					0.64	<b>22R5UN</b>	●					0.36

**Full-profile inserts with chipbreaker**

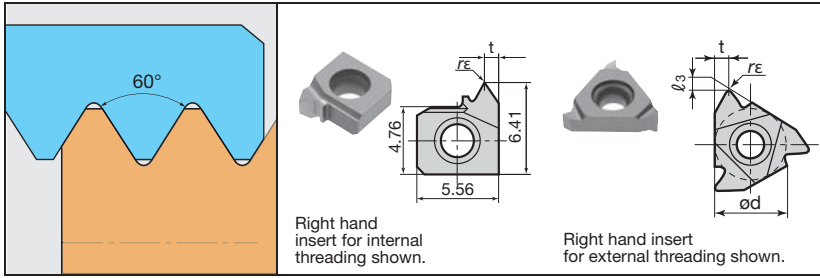
Insert size	Pitch	Number of threads	Hand of cut	External insert					Internal insert																
				Cat. No.	Grades			Dimensions (mm)			Cat. No.	Grades			Dimensions (mm)										
					Coated			$\varnothing d$	t	$l_3$		$r_{\epsilon}$	Coated			$\varnothing d$	t	$l_3$	$r_{\epsilon}$						
					AH725	NS730	NS9530 <i>New</i>						AH725	NS730	NS9530 <i>New</i>										
16	24	R	<b>16ER24UN-B</b>	◆	●	●	9.525	0.8	0.7	0.11	<b>16R24UN-B</b>	◆			9.525	0.9	0.8	0.06							
								0.9	0.7	0.13									0.9	0.7	0.09				
	20	R	<b>16ER20UN-B</b>	◆	●	●		0.9	0.8	0.14		0.9	0.7	0.16					0.9	0.8	0.07				
								0.9	0.7	0.18		◆	●	●		0.9	0.7	0.10							
	18	R	<b>16ER18UN-B</b>	◆	●	●		1.0	0.8	0.15		<b>16R18UN-B</b>	◆	●		●	1.1	0.9	0.09	1.1	0.9	0.09			
								0.9	0.7	0.18		<b>16R18UN-B</b>	●	●		0.9	0.7	0.10							
	16	R	<b>16ER16UN-B</b>	◆	●	●		1.1	0.9	0.19		<b>16R16UN-B</b>	◆	●		●	0.9	0.7	0.11	1.1	0.9	0.10			
								0.9	0.7	0.20		<b>16R16UN-B</b>	●	●		0.9	0.7	0.11							
	14	R	<b>16ER14UN-B</b>	◆	●	●		1.2	1.0	0.22		<b>16R14UN-B</b>	◆	●		●	1.2	0.9	0.10	1.2	0.9	0.10			
								1.6	1.2	0.23		<b>16R14UN-B</b>	●	●		1.6	1.2	0.13							
	13	R	<b>16ER13UN-B</b>	◆	●	●		1.3	1.0	0.24		<b>16R13UN-B</b>	◆				1.4	1.1	0.12	1.4	1.1	0.12			
								1.6	1.2	0.27													1.6	1.2	0.15
	8	R	<b>16ER8UN-B</b>	◆	●	●		1.6	1.2	0.41		<b>16R8UN-B</b>	◆				1.5	1.1	0.19	1.5	1.1	0.19			
								1.6	1.2	0.40													1.6	1.2	0.22
								1.6	1.2	0.40													1.6	1.2	0.22

Note: ◆ Please be aware of the different dimensions regarding "t" & "l<sub>3</sub>".  
 Required to modify the position of the cutting edge.  
 Target designation for the replacement of shim.

◆● : Stocked items / Packing Quantity = 5 pcs.



# 60° thread angle



## Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
11		SNR/L□□□□□11□□
16	CER/L□□□□□16□□ B-SER/L□□□□16 B-CER/L□□□□16 BC-SER/L□□□□16	TSNR/L□□□□□16 SNR/L□□□□□16□□ TCNR/L□□□□□16□□ CNR/L□□□□□16□□
22	CER/L□□□□□22□□	TSNR/L□□□□□22 SNR/L□□□□□22□□ TCNR/L□□□□□22□□ CNR/L□□□□□22□
27	CER/L□□□□□27□	CNR/L□□□□□27□

## Partial-profile inserts

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert														
				Cat. No.	Grades		Dimensions (mm)				Cat. No.	Grades		Dimensions (mm)								
					Coated	Uncoated	ød	t	ℓ <sub>3</sub>	r <sub>E</sub>		Coated	Uncoated	ød	t	ℓ <sub>3</sub>	r <sub>E</sub>					
					AH725	T313V						TH10	AH725					T313V	TH10			
6	0.5~1.5	48~16	R																			
11	0.5~1.5	48~16	R L																			
16	0.5~1.5	48~16	R	<b>16ERA60</b>	●	●	●	9.525	0.9	0.7	0.06	<b>16IRA60</b>	●	●	●	9.525	0.9	0.7	0.04			
			L	<b>16ELA60</b>	●	●	●		<b>16ILA60</b>	●	●	●										
	R	<b>16ERAG60</b>	●	●		1.6	1.2		0.06	<b>16IRAG60</b>	●	●		1.6	1.2		0.04					
	L	<b>16ELG60</b>	●	●		0.5	1.2		0.22	<b>16ILG60</b>	●	●	●					0.12				
22	3.5~5	7~5	R L	<b>22ERN60</b>	●	●	●	12.7	0.5	1.2	0.44	<b>22IRN60</b>	●	●	●	12.7	2.5	1.7	0.25			
L	<b>22ELN60</b>	●	●		0.5	1.2	0.44		<b>22ILN60</b>	●	●											
27	4~6	6~4	R	<b>27ERZ60</b>	●	●		15.875	0.9	0.7	0.50	<b>27IRZ60</b>	●	●		15.875	3.2	2.2	0.28			

## Partial-profile inserts with chipbreaker

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert														
				Cat. No.	Grades		Dimensions (mm)				Cat. No.	Grades		Dimensions (mm)								
					Coated	Cermet <sup>New</sup>	ød	t	ℓ <sub>3</sub>	r <sub>E</sub>		Coated	Cermet <sup>New</sup>	ød	t	ℓ <sub>3</sub>	r <sub>E</sub>					
					AH725	NS730						NS9530	AH725					NS730	NS9530			
11	0.5~1.5	48~16	R																			
16	0.5~1.5	48~16	R	<b>16ERA60-B</b>	◆			9.525	0.9	0.8	-	<b>16IRA60-B</b>	◆			9.525	0.9	0.8	-			
			R	<b>16ERA60-B</b>		●	●		0.9	0.7	0.06	<b>16IRA60-B</b>		●	●							
	R	<b>16ERAG60-B</b>	◆			1.7	1.2		-	<b>16IRAG60-B</b>	◆			1.7	1.2		-					
	R	<b>16ERAG60-B</b>		●	●	1.6	1.1		0.06	<b>16IRAG60-B</b>		●	●	1.6	1.2		0.04					
1.75~3.0	14~8	R	<b>16ERG60-B</b>	◆			1.7	1.2	-	<b>16IRG60-B</b>	◆			1.7	1.2	-						
1.75~3.0	14~8	R	<b>16ERG60-B</b>		●	●	1.6	1.2	0.22	<b>16IRG60-B</b>		●	●	1.6	1.2	0.14						

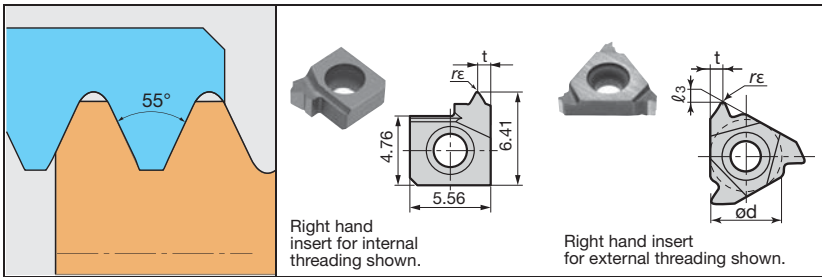
Note: ◆ Please be aware of the different dimensions regarding "t" & "ℓ<sub>3</sub>".

Required to modify the position of the cutting edge.

Target designation for the replacement of shim.

◆● : Stocked items / Packing Quantity = 5 pcs.

## Whitworth



## Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
11		SNR/L□□□□□11□□
16	CER/L□□□□□16□□ B-SER/L□□□□16 B-CER/L□□□□16 BC-SER/L□□□□16	TSNR/L□□□□□16 SNR/L□□□□□16□□ TCNR/L□□□□□16□□ CNR/L□□□□□16□□
22	CER/L□□□□□22□□	TSNR/L□□□□□22 SNR/L□□□□□22□□ TCNR/L□□□□□22□□ CNR/L□□□□□22□□

## Full-profile inserts

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert					Internal insert													
				Cat. No.	Grades		Dimensions (mm)				Cat. No.	Grades			Dimensions (mm)							
					Coated	Uncoated	ød	t	l <sub>3</sub>	r <sub>E</sub>		Coated	Uncoated	ød	t	l <sub>3</sub>	r <sub>E</sub>					
					AH725	T313V						TH10	AH725					T313V	TH10			
6	(1.337)	19	R																			
11	(1.337)	19	R																			
	(1.814)	14	R																			
16	(0.907)	28	R	<b>16ER28W</b>	●	●																
	(0.97)	26	R	<b>16ER26W</b>	●																	
	(1.27)	20	R	<b>16ER20W</b>	●																	
	(1.337)	19	R	<b>16ER19W</b>	●	●																
	(1.411)	18	R	<b>16ER18W</b>	●																	
	(1.588)	16	R	<b>16ER16W</b>	●	●																
	(1.814)	14	R	<b>16ER14W</b>	●	●	●		9.525													
	(1.814)	14	L	<b>16EL14W</b>	●																	
	(2.117)	12	R	<b>16ER12W</b>	●	●																
	(2.309)	11	R	<b>16ER11W</b>	●	●	●			1.6	1.2											
22	(2.54)	10	R	<b>16ER10W</b>	●	●												1.6	1.2			
	(2.822)	9	R	<b>16ER9W</b>	●																	
	(3.175)	8	R	<b>16ER8W</b>	●	●																
	(3.629)	7	R	<b>22ER7W</b>	●																	
	(4.233)	6	R	<b>22ER6W</b>	●				12.7	2.5	1.7											
	(5.08)	5	R	<b>22ER5W</b>	●																	

## Full-profile inserts with chipbreaker

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert					Internal insert												
				Cat. No.	Grades			Dimensions (mm)				Cat. No.	Grades			Dimensions (mm)					
					Coated	Cermet	<b>New</b>	ød	t	l <sub>3</sub>	r <sub>E</sub>		Coated	Cermet	<b>New</b>	ød	t	l <sub>3</sub>	r <sub>E</sub>		
					AH725	NS730	NS9530						AH725	NS730	NS9530						
16	(1.337)	19	R	<b>16ER19W-B</b>	◆					1.0	0.8	0.16									
	(1.588)	16	R	<b>16ER16W-B</b>	◆					0.9	0.7	0.17		●	●				0.9	0.7	0.17
	(1.814)	14	R	<b>16ER14W-B</b>	◆					1.1	0.9	0.20	<b>16IR16W-B</b>	◆					1.1	0.9	0.20
	(1.814)	14	R	<b>16ER14W-B</b>	◆	●	●		9.525	1.2	1.0	0.24	<b>16IR14W-B</b>	◆					1.2	1.0	0.23
	(1.814)	14	R	<b>16ER14W-B</b>	◆	●	●			1.6	1.2	0.23	<b>16IR14W-B</b>	◆	●	●			1.6	1.2	0.23
	(2.309)	11	R	<b>16ER11W-B</b>	◆					1.5	1.1	0.31	<b>16IR11W-B</b>	◆					1.5	1.1	0.30
					●	●			1.6	1.2	0.29			●	●			1.6	1.2	0.29	

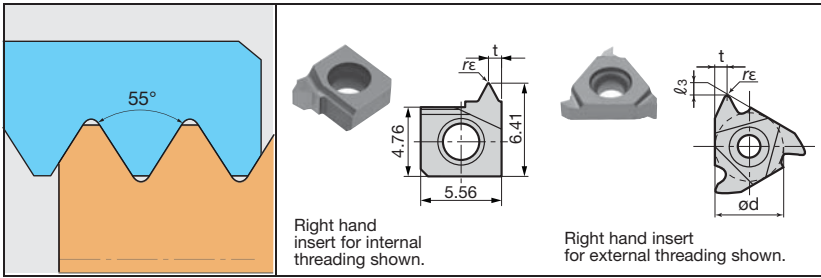
Note: ◆ Please be aware of the different dimensions regarding "t" & "l<sub>3</sub>".

Required to modify the position of the cutting edge.

Target designation for the replacement of shim.

◆● : Stocked items / Packing Quantity = 5 pcs.

# 55° thread angle



## Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
11		SNR/L□□□□□11□□
16	CER/L□□□□□16□□ B-SER/L□□□□16 B-CER/L□□□□16 BC-SER/L□□□□16	TSNR/L□□□□□16 SNR/L□□□□□16□□ TCNR/L□□□□□16□□ CNR/L□□□□□16□□
22	CER/L□□□□□22□□	TSNR/L□□□□□22 SNR/L□□□□□22□□ TCNR/L□□□□□22□□ CNR/L□□□□□22□□

## Partial-profile inserts

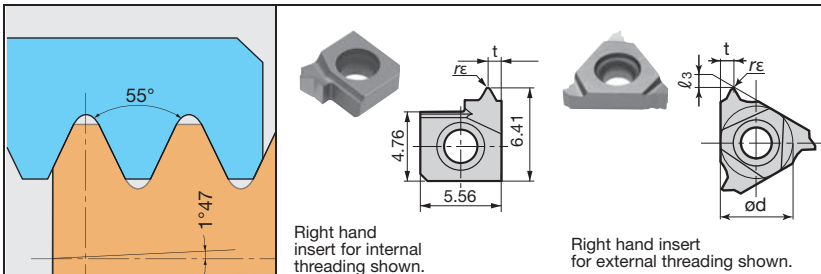
Insert size	Pitch	Number of threads	Hand of cut	External insert					Internal insert										
				Cat. No.	Grades		Dimensions (mm)			Cat. No.	Grades		Dimensions (mm)						
					Coated	Uncoated	ød	t	l <sub>3</sub>		r <sub>E</sub>	Coated	Uncoated	ød	t	l <sub>3</sub>	r <sub>E</sub>		
					AH725	T313V						TH10	AH725					T313V	TH10
6	0.5~1.5	48~16	R								61RA55	●	●	●	-	0.9	-	0.07	
11	0.5~1.5	48~16	R								111RA55	●	●	●	6.35	0.9	0.7	0.07	
16	0.5~1.5	48~16	R	16ERA55	●	●	●	9.525	0.9	0.7	0.07	161RA55	●	●	●	9.525	0.9	0.7	0.07
	0.5~3.0	48~8	R	16ERAG55	●				1.7	1.2	0.07	161RAG55	●				1.7	1.2	0.07
	1.75~3.0	14~8	R	16ERG55	●	●	●		1.6	1.2	0.25	161RG55	●	●	●		1.7	1.2	0.25
22	0.5~3.0	7~5	R	22ERN55	●	●	●	12.7	2.5	1.7	0.50	221RN55	●	●	●	12.7	2.5	1.7	0.50

## Partial-profile inserts with chipbreaker

Note: ◆ Please be aware of the different dimensions regarding "t" & "l<sub>3</sub>". Required to modify the position of the cutting edge. Target designation for the replacement of shim.

Insert size	Pitch	Number of threads	Hand of cut	External insert					Internal insert								
				Cat. No.	Grades		Dimensions (mm)			Cat. No.	Grades		Dimensions (mm)				
					Coated		ød	t	l <sub>3</sub>		r <sub>E</sub>	Coated		ød	t	l <sub>3</sub>	r <sub>E</sub>
					AH725							AH725					
16	0.5~3.0	48~16	R	16ERAG55-B		◆	9.525	1.7	1.2	-	161RAG55-B		◆	9.525	1.7	1.2	-
	1.75~3.0	14~8	R	16ERAG55-B		◆					161RG55-B		◆				

## PT



## Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
11		SNR/L□□□□□11□□
16	CER/L□□□□□16□□ B-SER/L□□□□16 B-CER/L□□□□16 BC-SER/L□□□□16	TSNR/L□□□□□16 SNR/L□□□□□16□□ TCNR/L□□□□□16□□ CNR/L□□□□□16□□

## Full-profile inserts

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert					Internal insert									
				Cat. No.	Grades		Dimensions (mm)			Cat. No.	Grades		Dimensions (mm)					
					Coated	Uncoated	ød	t	l <sub>3</sub>		r <sub>E</sub>	Coated	Uncoated	ød	t	l <sub>3</sub>	r <sub>E</sub>	
					AH725	T313V						TH10	AH725					T313V
6	(1.337)	19	R								61R19PT	●	●	●	-	0.9	-	0.14
11	(1.337)	19	R								111R19PT	●	●	●	6.35	0.9	0.7	0.14
	(1.814)	14	R								111R14PT	●	●	●				0.16
16	(0.907)	28	R	16ER28PT	●	●	9.525	0.9	0.7	0.09								
	(1.337)	19	R	16ER19PT	●	●					161R19PT	●	●	●	9.525	0.9	0.7	0.14
	(1.814)	14	R	16ER14PT	●	●					161R14PT	●	●	●	1.6	1.2	0.16	
	(2.309)	11	R	16ER11PT	●	●					161R11PT	●	●	●	0.26	1.6	1.2	0.26

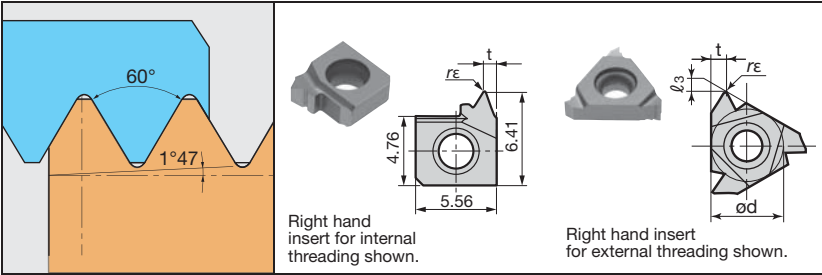
## Full-profile inserts with chipbreaker

Note: ◆ Please be aware of the different dimensions regarding "t" & "l<sub>3</sub>". Required to modify the position of the cutting edge. Target designation for the replacement of shim.

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert					Internal insert												
				Cat. No.	Grades		Dimensions (mm)			Cat. No.	Grades		Dimensions (mm)								
					Coated	Cermet <b>New</b>	ød	t	l <sub>3</sub>		r <sub>E</sub>	Coated	Cermet <b>New</b>	ød	t	l <sub>3</sub>	r <sub>E</sub>				
					AH725	NS730						NS9530	AH725					NS730	NS9530		
16	(1.337)	19	R	16ER19PT-B	●	●	9.525	0.9	0.7	0.18	161R19PT-B		●	●	9.525	0.9	0.7	0.18			
	(1.814)	14	R	16ER14PT-B	◆						161R14PT-B	◆		1.6					1.2	0.25	
				16ER14PT-B	●	●					161R14PT-B		●	●					1.5	1.1	-
	(2.309)	11	R	16ER11PT-B	◆						161R11PT-B	◆		1.6					1.2	0.32	

◆ ● : Stocked items / Packing Quantity = 5 pcs.

### NPT



### Applicable toolholders

Insert size	External	Internal
6		SNR/L000□K06SC-□ SNR/L000□H06-□
16	CER/L0□□□□16□□ B-SER/L0□□□16 B-CER/L0□□□16 BC-SER/L0□□□16	TSNR/L0□□□□16 SNR/L0□□□□16□□ TCNR/L0□□□□16□□ CNR/L0□□□□16□□

### Full-profile inserts

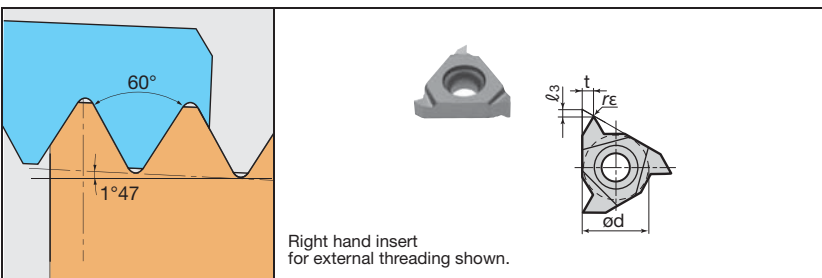
Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert							Internal insert																	
				Cat. No.	Grades		Dimensions (mm)				Cat. No.	Grades		Dimensions (mm)														
					Coated AH725	Uncoated T313V TH10	ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>		ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>													
6	(1.411)	18	R																	6IR18NPT	●		●	-	0.9	-	0.03	
	(0.941)	27	R	16ER27NPT	●			0.5	1.2	0.02				16IR27NPT	●									0.5	1.2	0.02		
	(1.411)	18	R	16ER18NPT	●	●		0.9	0.7	0.03				16IR18NPT	●									0.9	0.7	0.03		
	(1.814)	14	R	16ER14NPT	●			9.525			0.04			●		9.525					16IR14NPT	●		●		1.6	1.2	0.04
	(2.209)	11.5	R	16ER115NPT	●							1.6	1.2									0.05			●			
	(3.175)	8	R	16ER8NPT	●					0.07					●		●						16IR8NPT	●			●	

### Full-profile inserts with chipbreaker

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert							Internal insert																								
				Cat. No.	Grades			Dimensions (mm)				Cat. No.	Grades			Dimensions (mm)																			
					Coated AH725	Cermet NS730	New NS9530	ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>		ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>																			
16	(1.411)	18	R	16ER18NPT-B	◆			9.525				1	0.8	-																					
	(1.814)	14	R	16ER14NPT-B	◆		●					●				1.2	0.9	-	16IR18NPT-B			●	●								0.9	0.7	0.07		
																			16IR14NPT-B	◆														1.5	1.1
	(2.209)	11.5	R	16ER115NPT-B	◆		●					●					1.6	1.2	0.08	16IR14NPT-B			●	●									1.6	1.2	0.08
																				16IR115NPT-B	◆														
	(3.175)	8	R	16ER8NPT-B	◆												1.6	1.2	0.09	16IR115NPT-B			●	●								1.6	1.2	0.09	
												1.8	1.3	-	16IR8NPT-B	◆											1.8	1.3	-						

Note: ◆Please be aware of the different dimensions regarding "t" & "ℓ<sub>3</sub>".  
 Required to modify the position of the cutting edge.  
 Target designation for the replacement of shim.

### NPTF



### Applicable toolholders

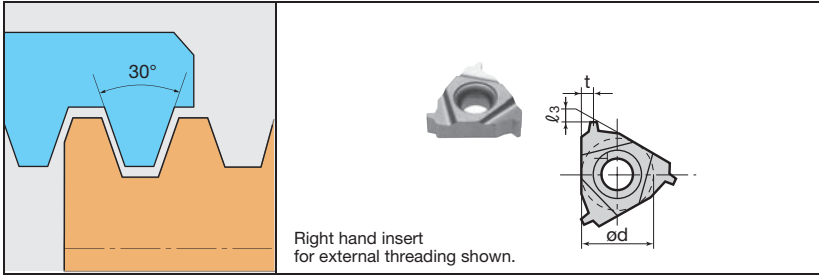
Insert size	External	Internal
16	CER/L0□□□□16□□ B-SER/L0□□□16 B-CER/L0□□□16 BC-SER/L0□□□16	TSNR/L0□□□□16 SNR/L0□□□□16□□ TCNR/L0□□□□16□□ CNR/L0□□□□16□□

### Full-profile inserts

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert							Internal insert																						
				Cat. No.	Grades	Dimensions (mm)				Cat. No.	Grades	Dimensions (mm)																					
					Coated AH725	ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>		ød	t	ℓ <sub>3</sub>	r <sub>ε</sub>																			
16	(0.941)	27	R	16ER27NPTF	●			9.525				0.5	1.2	-																			
	(1.411)	18	R	16ER18NPTF	●											0.9	0.7	-															
	(1.814)	14	R	16ER14NPTF	●																											16IR14NPTF	●
	(2.209)	11.5	R	16ER115NPTF	●																												
	(3.175)	8	R	16ER8NPTF	●																												

◆● : Stocked items / Packing Quantity = 5 pcs.

## 30° Trapezoidal (DIN103)

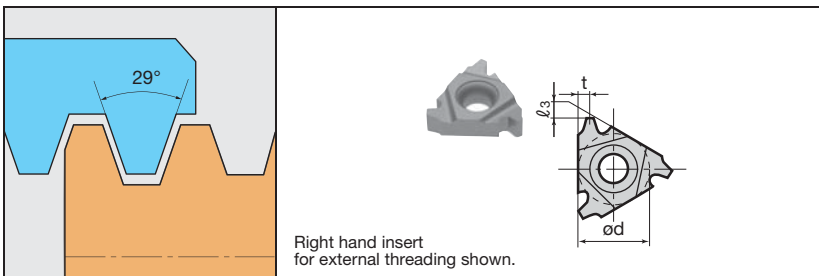


### Applicable toolholders

Insert size	External	Internal
16	CER/L0000016□□ B-SER/L00016 B-CER/L00016 BC-SER/L00016	TSNR/L0000016 SNR/L0000016□□ TCNR/L0000016□□ CNR/L0000016□□
22	CER/L0000022□□	TSNR/L0000022 SNR/L0000022□□ TCNR/L0000022□□ CNR/L0000022□
27	CER/L0000027□	CNR/L0000027□

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert									
				Cat. No.	Grades		Dimensions (mm)		Cat. No.	Grades		Dimensions (mm)					
					Coated		ød	t		l <sub>3</sub>	r <sub>ε</sub>	Coated		ød	t	l <sub>3</sub>	r <sub>ε</sub>
					AH725	T313V						AH725	T313V				
16	1.5		R	16ER15TR	●		9.525	0.9	0.7	-	16IR15TR	●		9.525	0.9	0.7	-
	2		R	16ER20TR	●	●		1.6	1.3		16IR20TR	●	●		1.6	1.3	
	3		R	16ER30TR	●	●		16IR30TR	●		●						
22	4		R	22ER40TR	●	●	12.7	2.5	2	-	22IR40TR	●	●	12.7	2.5	2	-
	5		R	22ER50TR	●	●		22IR50TR	●		●						
27	6		R	27ER60TR	●	●	15.875	3.2	2.5	-							

## 29° Trapezoidal (ACME)

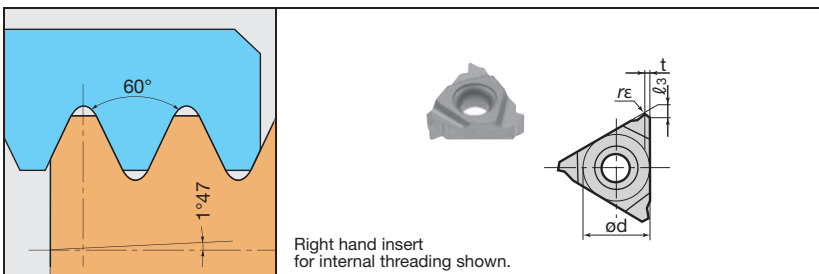


### Applicable toolholders

Insert size	External	Internal
16	CER/L0000016□□ B-SER/L00016 B-CER/L00016 BC-SER/L00016	TSNR/L0000016 SNR/L0000016□□ TCNR/L0000016□□ CNR/L0000016□□
22	CER/L0000022□□	TSNR/L0000022 SNR/L0000022□□ TCNR/L0000022□□ CNR/L0000022□

Insert size	Pitch (Reference)	Number of threads	Hand of cut	External insert				Internal insert									
				Cat. No.	Grades		Dimensions (mm)		Cat. No.	Grades		Dimensions (mm)					
					Coated		ød	t		l <sub>3</sub>	r <sub>ε</sub>	Coated		ød	t	l <sub>3</sub>	r <sub>ε</sub>
					AH725	T313V						AH725	T313V				
16	(2.117)	12	R	16ER12ACME	●		9.525	1.6	1.3	-	16IR12ACME	●		9.525	1.6	1.3	-
	(2.540)	10	R	16ER10ACME	●			16IR10ACME	●								
	(3.175)	8	R	16ER8ACME	●	●		16IR8ACME	●		●						
22	(4.233)	6	R	22ER6ACME	●	●	12.7	2.5	2	-	22IR6ACME	●	●	12.7	2.5	2	-
	(5.080)	5	R	22ER5ACME	●	●		22IR5ACME	●		●						

## Round



### Applicable toolholders

Insert size	External	Internal
16	CER/L0000016□□ B-SER/L00016 B-CER/L00016 BC-SER/L00016	TSNR/L0000016 SNR/L0000016□□ TCNR/L0000016□□ CNR/L0000016□□

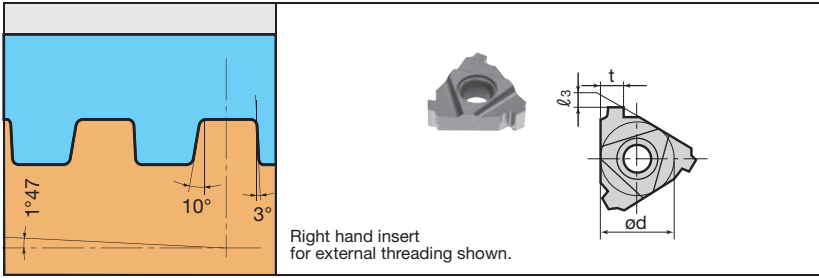
## Full-profile inserts

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert									
				Cat. No.	Grades		Dimensions (mm)		Cat. No.	Grades		Dimensions (mm)					
					Coated		ød	t		l <sub>3</sub>	r <sub>ε</sub>	Coated		ød	t	l <sub>3</sub>	r <sub>ε</sub>
					AH725	T313V						AH725	T313V				
16	(2.54)	10	R	16ER10RAPI	●		9.525	1.6	1.2	0.36	16IR10RAPI	●	●	9.525	1.6	1.2	0.36
	(3.175)	8	R	16ER8RAPI	●			0.43	16IR8RAPI	●	●	0.43					

◆● : Stocked items / Packing Quantity = 5 pcs.

## Buttress

### Full-profile inserts

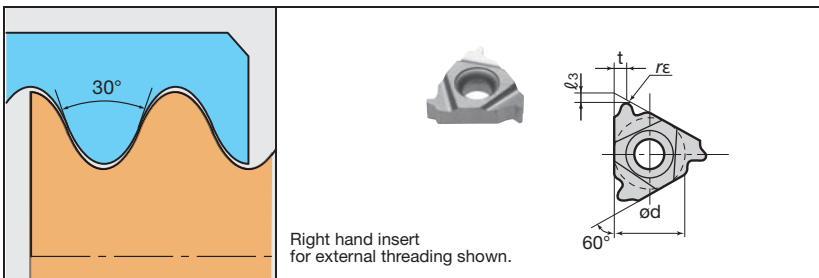


### Applicable toolholders

Insert size	External	Internal
22	CER/L0000002200	TSNR/L00000022 SNR/L0000002200 TCNR/L0000002200 CNR/L000000220

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert							
				Cat. No.	Grades	Dimensions (mm)			Cat. No.	Grades	Dimensions (mm)				
					Coated AH725	ød	t	l <sub>3</sub>		r <sub>ε</sub>	Coated AH725	ød	t	l <sub>3</sub>	r <sub>ε</sub>
22	(2.54)	10	R	22ER5BAPI	●	12.7	3.72	2.2	-	22IR5BAPI	●	12.7	3.45	2.2	-

## Round (DIN405)



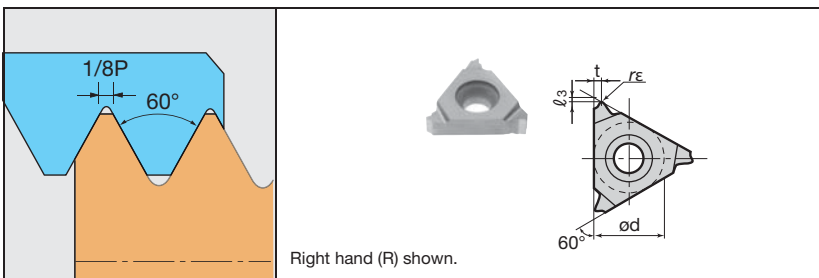
### Applicable toolholders

Insert size	External	Internal
16	CER/L0000001600 B-SER/L000016 B-CER/L000016 BC-SER/L000016	TSNR/L00000016 SNR/L0000001600 TCNR/L0000001600 CNR/L0000001600
22	CER/L0000002200	TSNR/L00000022 SNR/L0000002200 TCNR/L0000002200 CNR/L000000220

### Full-profile inserts

Insert size	Pitch	Number of threads	Hand of cut	External insert				Internal insert							
				Cat. No.	Grades	Dimensions (mm)			Cat. No.	Grades	Dimensions (mm)				
					Coated AH725	ød	t	l <sub>3</sub>		r <sub>ε</sub>	Coated AH725	ød	t	l <sub>3</sub>	r <sub>ε</sub>
16		10	R	16ER10RD		9.525	1.6	1.5	0.60	16IR10RD		9.525	1.6	1.5	0.55
		8	R	16ER8RD					0.75	16IR8RD					0.68
22		6	R	22ER6RD		12.7	2.5	2.0	1.00	22IR6RD		12.7	2.5	2.0	0.91
		4	R	22ER4RD					1.50	22IR4RD					1.36

## Aerospace



### Applicable toolholders

Insert size	External
16	CER/L0000001600 B-SER/L000016 B-CER/L000016 BC-SER/L000016

### Full-profile inserts

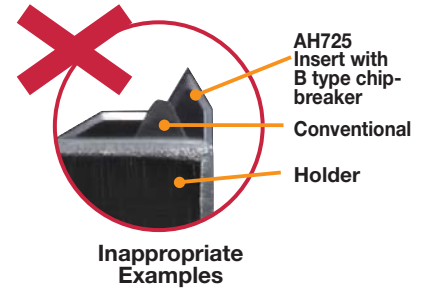
Insert size	Pitch	Number of threads	Hand of cut	External insert					
				Cat. No.	Grades	Dimensions (mm)			
					Coated AH725	ød	t	l <sub>3</sub>	r <sub>ε</sub>
16		32	R	16ER32UNJ	●	9.525	0.5	1.2	0.13
		28	R	16ER28UNJ	●				0.15
		24	R	16ER24UNJ	●				0.18
		20	R	16ER20UNJ	●		0.9	0.7	0.21
		18	R	16ER18UNJ	●				0.24
		16	R	16ER16UNJ	●				0.26
		14	R	16ER14UNJ	●		1.6	1.2	0.3
		12	R	16ER12UNJ	●				0.35
		10	R	16ER10UNJ	●				0.42
		8	R	16ER8UNJ	●		0.53		

◆● : Stocked items / Packing Quantity = 5 pcs.

# IMPORTANT NOTICE

## Replacement of shim sheet

Please check the items used and replace shims if necessary (see the following list).



### List of interchangeable Shims (Size 16 · Insert).

Holder type	Lead Angle	External Cat. No.		Internal Cat. No.	
		① Conventional	① Standard (New)	② Conventional	② Standard (New)
Dual clamping methods of screw-on and clamp-on	4°	GXE16-4DT	<b>AE16-4DT</b>	GXN16-4DT	<b>AN16-4DT</b>
	3°	GXE16-3DT	<b>AE16-3DT</b>	GXN16-3DT	<b>AN16-3DT</b>
	2°	GXE16-2DT	<b>AE16-2DT</b>	GXN16-2DT	<b>AN16-2DT</b>
	1° (Standard)	GX16-1DT	<b>A16-1DT</b>	GX16-1DT	<b>A16-1DT</b>
	0°	GXE16-0DT	<b>AE16-0DT</b>	GXN16-0DT	<b>AN16-0DT</b>
	-1°	GXE16-99DT	<b>AE16-99DT</b>	GXN16-99DT	<b>AN16-99DT</b>
	-2°	GXE16-98DT	<b>AE16-98DT</b>	GXN16-98DT	<b>AN16-98DT</b>
Clamp-on	4°	GXE16-4	<b>AE16-4</b>	GXN16-4	<b>AN16-4</b>
	3°	GXE16-3	<b>AE16-3</b>	GXN16-3	<b>AN16-3</b>
	2°	GXE16-2	<b>AE16-2</b>	GXN16-2	<b>AN16-2</b>
	1° (Standard)	GXE16-1	<b>A16-1</b>	GXN16-1	<b>A16-1</b>
	0°	GXE16-0	<b>AE16-0</b>	GXN16-0	<b>AN16-0</b>
	-1°	GXE16-99	<b>AE16-99</b>	GXN16-99	<b>AN16-99</b>
	-2°	GXE16-98	<b>AE16-98</b>	GXN16-98	<b>AN16-98</b>

### Target items for the replacement of shims (Size 16 · Insert).

Thread type	External			Internal		
	Cat. No.	Grades	Replacement	Cat. No.	Grades	Replacement
ISO		AH725	① → ①	16IR15ISO-B	AH725	② → ②
				16IR175ISO-B		
				16IR20ISO-B		
55°	16ERAG55-B			16IRAG55-B		
				16IRG55-B		
60°	16ERA60-B			16IRAG60-B		
				16IRA60-B		
				16IRG60-B		
UN				16IR18UN-B		
				16IR16UN-B		
				16IR14UN-B		
W				16IR16W-B		
				16IR14W-B		
PT				16IR14PT-B		
NPT	16ER8NPT-B	16IR14NPT-B				
		16IR115NPT-B				

## Threading Guidelines

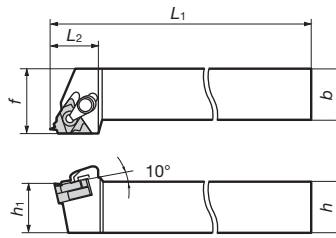
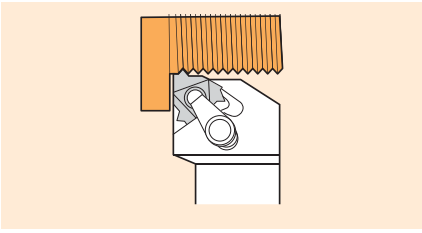
Determine the in-feed per pass and number of threads while referring to the table and description below.

Pitch	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5 ~
No. of threads	48	32	24	20	16	14	12	10	8	7	6	5.5	5 ~
No. of passes	4 ~ 6	4 ~ 7	4 ~ 8	5 ~ 9	6 ~ 10	7 ~ 12	7 ~ 12	8 ~ 14	10 ~ 16	11 ~ 18	11 ~ 18	11 ~ 19	12 ~ 24

Note:

- When using the full-profile insert, set the total infeed amount by taking the finish stock of 0.1mm into account.
- Set the first infeed to 150~200% of nose R and do not allow it to exceed 0.5 mm.
- The in-feed amount during the final pass must be a minimum of 0.05mm. No zero cuts should be made. (Extra-small in-feed or zero cutting of work hardened surfaces will reduce tool life.)
- The partial-profile insert or inside diameter insert has small nose R. Reduce the infeed per pass and increase the no. of passes.
- Regarding standard in-feed per passes and no. of passes, please refer to our catalogue.

## Holder Specification

**CE R/L**
**External threading**
**S/C type (Dual methods of screw-on and clamp-on clamping)**


Pitch	No. of threads	No. of corners
0.5 ~ 6.0 mm	32 ~ 4	3

Right hand (R), carbide shank type shown.

### Steel shank (Dual methods of screw-on and clamp-on clamping)

Cat. No.	Stock		Dimensions (mm)						Insert	Parts				
	R	L	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f		Clamp set	Shim	Shim screw	Clamping screw	Wrench
CER/L1212H16DT	●	●	12	12	100	24	12	16	16ER/L□□□□					
CER/L1616H16DT	●	●	16	16	100	24	16	20						
CER/L2020K16DT	●	●	20	20	125	24	20	25						
CER/L2525M16DT	●	●	25	25	150	28	25	32						
CER/L2525M22DT	●	●	25	25	150	31.3	25	32	22ER/L□□□□	CSP22	GX22-1DT	DTS6-4	CSTB-4ST	T-15F T-20F P-4

Note: New shim is used for both right and left hand toolholders.

### Steel shank (Clamp-on type)

Cat. No.	Stock		Dimensions (mm)						Insert	Parts				
	R	L	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f		Clamp set	Shim set R	Shim set L	Clamping screw	Wrench
CER/L1212H16T			12	12	100	22	12	16	16ER/L□□□□					
CER/L1616H16T			16	16	100	22	16	20						
CER/L2020K16T			20	20	125	22	20	25						
CER/L2525M16T			25	25	150	25	25	32						
CER/L3232P16T	●		32	32	170	32	32	40	22ER/L□□□□	CSP22	NXE22-1	NXN22-1	-	T-20F
CER/L2525M22T			25	25	150	28	25	32						
CER/L3232P22T	●		32	32	170	32	32	40	27ER/L□□□□	CSP27	NXE27-1	NXN27-1	-	P-4
CER/L4040R22T			40	40	200	36	40	50						
CER/L2525M27T	●		25	25	150	34	25	32						
CER/L3232P27T	●		32	32	170	34	32	40						
CER/L4040R27T			40	40	200	40	40	50						

Note:

A clamp set for CER/L type consists of a clamp and a clamp screw.

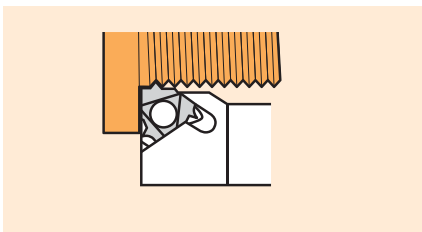
A shim set for CER/L type consists of a shim and a shim screw.

Standard shims for CER/L type can be used for both left hand and right hand toolholders. Use either of the sides depending on the hand.

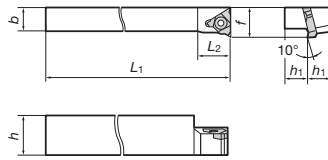
● : Stocked items



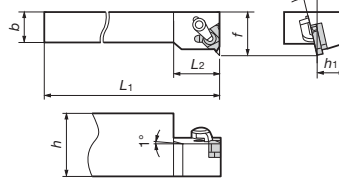
## B-S/C E R/L External threading For gang tooling S/C type (Dual methods of screw-on and clamp-on clamping)



B-SER/L Screw-on type



B-CER/L Clamp-on type



Pitch	No. of threads	No. of corners
0.5 ~ 6.0 mm	32 ~ 4	3

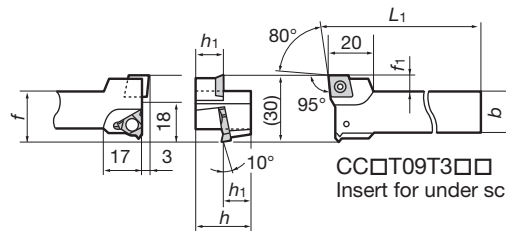
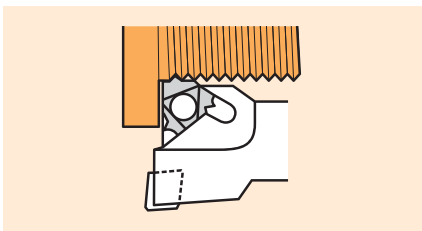
Right hand (R) shown.

### Steel shank

Cat. No.	Stock		Dimensions (mm)						Insert	Parts				
	R	L	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f		Clamp set	Shim set R	Shim set L	Clamping screw	Wrench
B-SER/L10H16	●		20	10	100	15	10	16	16ER/L□□□□	-	-	-	CSTB-3.5	T-15F
B-SER/L12K16	●		24	12	125	18	12	18		-	-	-	-	-
B-CER/L16M16	●	●	32	16	150	24	16	22		CSP16	A16-1	A16-1	-	T-15F

## BC-SE R/L External threading

For gang tooling S type (Screw-on)



Pitch	No. of threads	No. of corners
0.5 ~ 6.0 mm	32 ~ 4	3

CC□T09T3□□  
Insert for under screw

Right hand (R), carbide shank type shown.

### Steel shank

Cat. No.	Stock		Dimensions (mm)						Insert	Parts		
	R	L	h	b	L <sub>1</sub>	L <sub>2</sub>	h <sub>1</sub>	f		f <sub>1</sub>	Clamping screw	Wrench
BC-SER/L12K16	●		24	16	125	-	12	23	7	16ER/L□□□□	CSTB-3.5	T-15F
BC-SER/L16M16			32	20	150	-	16	25	5	CC□T09T3□□		

## SN R/L-2/3 Internal threading

S type (Screw-on)

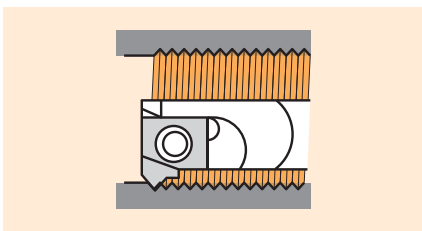
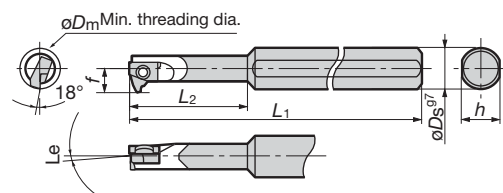
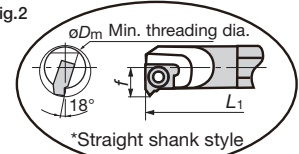


Fig.1



Pitch	No. of threads	No. of corners
0.5 ~ 2.0 mm	48 ~ 16	1

Fig.2



\*Straight shank style

Right hand (R), carbide shank type shown.

### Steel shank

Cat. No.	Stock		Dimensions (mm)							Insert	Parts		Figure	
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	f	L <sub>1</sub>	L <sub>2</sub>	h	Lead Angle Le		Clamping screw	Wrench		
SNR/L0006H06-2	●		8	8	4.7	100	18	7	2°	6IR/L□□□□	CSTB-2L040	T-6F	Fig.1	
SNR/L0006H06-3	●								3°					
SNR/L0008H06-2	●		10	8	5.7	100	-	7	2°		CSTB-2L	T-6F		Fig.2
SNR/L0008H06-3	●								3°					

### Carbide shank

Cat. No.	Stock		Dimensions (mm)							Insert	Parts		Figure	
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	f	L <sub>1</sub>	L <sub>2</sub>	h	Lead Angle Le		Clamping screw	Wrench		
SNR/L0006K06SC-2	●		8	8	4.7	125	30	7	2°	6IR/L□□□□	CSTB-2L040	T-6F	Fig.1	
SNR/L0006K06SC-3	●								3°					
SNR/L0008K06SC-2	●		10	8	5.7	125	-	7	2°		CSTB-2L	T-6F		Fig.2
SNR/L0008K06SC-3	●								3°					

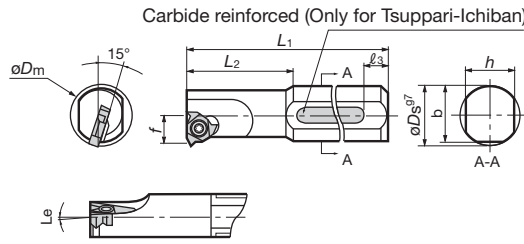
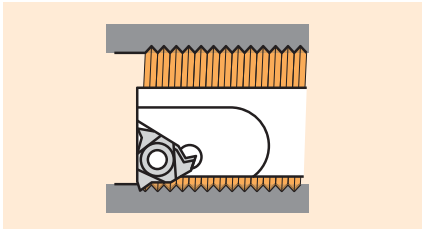
Note: When using a right or left hand insert, the right hand insert (6IR \*\* type), is used for the right hand toolholders (SNR \*\* type).

● : Stocked items

## SN R/L

## Internal threading

## S type (Screw-on)



Pitch	No. of threads	No. of corners
0.5 ~ 6.0 mm	48 ~ 5	3

Right hand (R),  
Tsuppari-Ichiban type shown.

### “Tsuppari-Ichiban” shank

Cat. No.	Stock		Dimensions (mm)								Insert	Parts		
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$l_3$	$h$	$b$		Lead Angle $Le$	Clamping screw	Wrench
TSNR/L0016Q16	●		19	16	10.6	180	40	59	15		1°	16IR/L□□□□	CSTB-3.5	T-15F
TSNR/L0020R22	●		24	20	13.9	200	50	49	18			22IR/L□□□□	CSTB-4	

### Steel shank

Cat. No.	Stock		Dimensions (mm)								Insert	Parts		
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$l_3$	$h$	$b$		Lead Angle $Le$	Clamping screw	Wrench
SNR/L0010K11	●	●	12	16	6.6	125	25	-	15	15.5	1°	11IR/L□□□□	CSTB-2.5	T-8F
SNR/L0010K11-2	●										2°			
SNR/L0010K11-3	●										3°			
SNR/L0013L11	●	●	15	16	8.2	140	32.5	-	15	15.5	1°	16IR/L□□□□	CSTB-3.5	T-15F
SNR/L0013L11-2	●										2°			
SNR/L0013L11-3	●										3°			
SNR/L0016M16	●	●	19	16	10.6	150	40	-	15	15.5	1°	22IR/L□□□□	CSTB-4	T-15F
SNR/L0016M16-2	●										2°			
SNR/L0016M16-3	●										3°			
SNR/L0020Q22	●	●	24	20	13.9	180	50	-	18	19	1°	11IR/L□□□□	CSTB-2.5	T-8F
SNR/L0020Q22-2	●										2°			
SNR/L0020Q22-3	●										3°			

### Carbide shank

Cat. No.	Stock		Dimensions (mm)								Insert	Parts		
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$l_3$	$h$	$b$		Lead Angle $Le$	Clamping screw	Wrench
SNR/L0010M11SC	●		13	10	7.4	150	24	-	9	-	1°	11IR/L□□□□	CSTB-2.5	T-8F
SNR/L0010M11SC-2	●										2°			
SNR/L0010M11SC-3	●										3°			
SNR/L0012P11SC	●		15	12	8.5	170	28	-	11	-	1°	16IR/L□□□□	CSTB-3.5	T-15F
SNR/L0012P11SC-2	●										2°			
SNR/L0012P11SC-3	●										3°			
SNR/L0016R16SC	●	●	20	16	11.9	200	35	-	15	-	1°	11IR/L□□□□	CSTB-2.5	T-8F
SNR/L0016R16SC-2	●										2°			
SNR/L0016R16SC-3	●										3°			

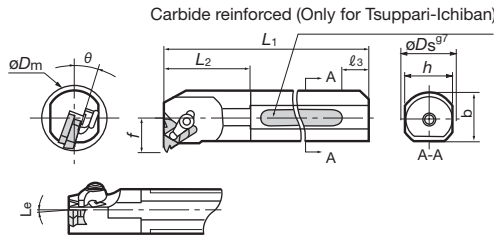
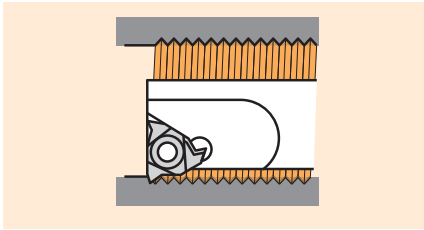
When using a right or left hand insert, the right hand insert (□□IR\*\*type) is used for the right hand toolholders (SNR\*\*type) and left hand insert (□□IL\*\*type) is used for the left hand toolholders (SNL\*\*type).

● : Stocked items

# CN R/L

## Internal threading

## S/C type (Dual methods of screw-on and clamp-on clamping)



Pitch	No. of threads	No. of corners
0.5 ~ 6.0 mm	48 ~ 5	3

Right hand (R),  
Tsuppari-Ichiban type shown.

### “Tsuppari-Ichiban” shank (Dual methods of screw-on and clamp-on clamping)

Cat. No.	Stock		Dimensions (mm)									Insert	Parts					
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$l_3$	$h$	$b$	$\theta$		Lead Angle $Le$	Clamp set	Shim	Shim screw	Clamping screw	Wrench
TCNR/L0020R16DT	●		24	20	14	200	30	49	18				16IR/L□□□□	CSP16	A16-1DT	DTS5-3.5	CSTB-3.5ST	T-15F P-3.5
TCNR/L0025S16DT	●		29	25	16.5	250	38	64	23	-	15°	1°	16IR/L□□□□	CSP16	A16-1DT	DTS5-3.5	CSTB-3.5ST	T-15F P-3.5
TCNR/L0032T16DT			37	32	20.1	300	48	53	30				16IR/L□□□□	CSP16	A16-1DT	DTS5-3.5	CSTB-3.5ST	T-15F P-3.5
TCNR/L0025S22DT	●		30	25	18.2	250	38	64	23	-	15°	1°	22IR/L□□□□	CSP22	GX22-1DT	DTS6-4	CSTB-4ST	T-15F T-20F P-4
TCNR/L0032T22DT			38	32	21.9	300	48	53	30				22IR/L□□□□	CSP22	GX22-1DT	DTS6-4	CSTB-4ST	T-15F T-20F P-4

Note: Shim is used for both right and left hand toolholders.

### Steel shank (Clamp-on type)

Cat. No.	Stock		Dimensions (mm)									Insert	Parts					
	R	L	Min. threading dia. $\phi D_m$	$\phi D_s$	$f$	$L_1$	$L_2$	$l_3$	$h$	$b$	$\theta$		Lead Angle $Le$	Clamp set	Shim set R	Shim set L	Clamping screw	Wrench
CNR/L0020P16	●	●	24	20	14	170	30		18	19								
CNR/L0025R16	●	●	29	25	16.5	200	38		23	24								
CNR/L0032S16	●	●	37	32	20.1	250	48	-	30	31	15°	1°	16IR/L□□□□	CSP16	A16-1	A16-1	-	T-15F
CNR/L0040T16			45	40	24.1	300	60		37	38.5								
CNR/L0050U16			55	50	29.4	350	75		47	48.5								
CNR/L0025R22	●	●	30	25	18.2	200	38		23	24								
CNR/L0032S22	●	●	38	32	21.9	250	48		30	31								
CNR/L0040T22			46	40	26.1	300	60	-	37	38.5	15°	1°	22IR/L□□□□	CSP22	NXN22-1	NXE22-1	-	T-20F
CNR/L0050U22			56	50	31	350	75		47	48.5								
CNR/L0063V22			69	63	37.5	400	95		60	61.5								
CNR/L0040T27	●		46	40	26.9	300	60		37	38.5								
CNR/L0050U27			56	50	31.9	350	75	-	47	48.5	10°	1°	27IR/L□□□□	CSP27	NXN27-1	NXE27-1	-	P-4
CNR/L0063V27			70	63	38.7	400	95		60	61.5								

Note: • A clamp set for CNR/L type toolholders consists of a clamp and a clamp screw.  
 • A shim set for CNR/L type toolholders consists of a shim and a shim fixing screw.  
 • Standard shims for CNR/L type toolholders are commonly used for right and left hand toolholders.  
 When using a right or left hand insert, the right hand insert (□□IR\*\*type) is used for the right hand toolholder (CNR\*\*type) and left hand insert (□□IL\*\*type) is used for left hand toolholder (CNL\*\*type).

● : Stocked items



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