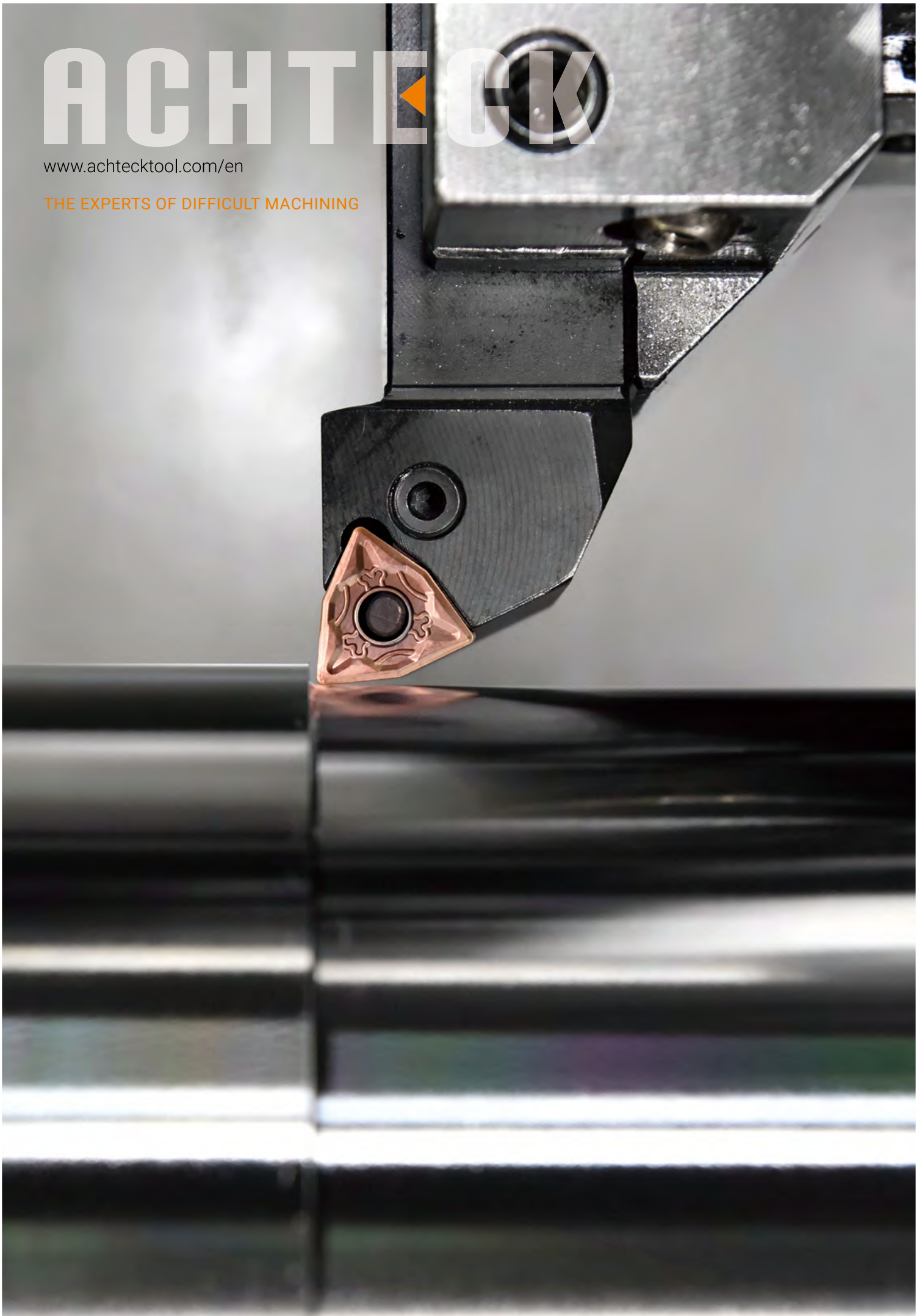


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THE EXPERTS OF DIFFICULT MACHINING



## CUTTING TOOL CATALOG

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**ISO Turning Insert Denomination System**

**C**  
1

**N**  
2

**M**  
3

**G**  
4

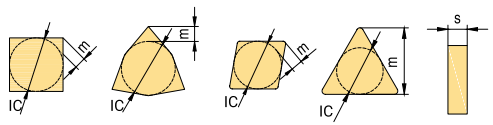
**1- Shape/code**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>H</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>O</b>
<b>P</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>V</b>
<b>W</b>	<b>Z</b>	<b>Others</b>		

**2- Clearance angle**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
<b>E</b>	<b>F</b>	<b>G</b>	<b>N</b>
<b>P</b>	<b>O</b>	<b>Other clearance angle</b>	

**3- Tolerance**



Class	Unit	In. Circle dimension IC	Nose height m	Thickness s
A	in	± 0.0010	± 0.0002	± 0.0010
C	in	± 0.0010	± 0.0005	± 0.0010
E	in	± 0.0010	± 0.0010	± 0.0010
F	in	± 0.0005	± 0.0002	± 0.0010
G	in	± 0.0010	± 0.0010	± 0.0005
H	in	± 0.0005	± 0.0005	± 0.0010
J	in	*	± 0.0002	± 0.0010
K	in	*	± 0.0005	± 0.0010
L	in	*	± 0.0010	± 0.0010
M	in	*	*	± 0.0005
U	in	*	*	± 0.0005
N	in	*	*	± 0.0010

\* For details refer to right and below tables

Shape: C, E, H, M, O, P, S, T, R, W				
IC	d		m	
	J,K,L,M,N	U	M, N	U
3/16	±0.002	±0.003	±0.003	±0.005
7/32	±0.002	±0.003	±0.003	±0.005
0.236	±0.002	±0.003	±0.003	±0.005
1/4	±0.002	±0.003	±0.003	±0.005
5/16	±0.002	±0.003	±0.003	±0.005
0.315	±0.002	±0.003	±0.003	±0.005
3/8	±0.002	±0.003	±0.003	±0.005
0.394	±0.002	±0.003	±0.003	±0.005
0.472	±0.003	±0.005	±0.005	±0.007
1/2	±0.003	±0.005	±0.005	±0.008
5/8	±0.004	±0.007	±0.005	±0.011
0.630	±0.003	± 0.007	±0.006	±0.011
3/4	±0.004	±0.007	±0.005	±0.011
0.787	±0.004	±0.007	±0.006	±0.011
0.984	±0.005	±0.010	±0.007	±0.015
1	±0.005	±0.010	±0.007	±0.015
1¼	±0.006	±0.010	±0.008	±0.015
1.260	±0.006	±0.010	±0.200	±0.015

M&N shape	D shape		V shape	
	d	m	d	m
7/32	±0.002	±0.004		
1/4	±0.002	±0.004	±0.002	±0.006
5/16	±0.002	±0.004	±0.002	±0.006
3/8	±0.002	±0.004	±0.002	±0.006
1/2	±0.003	±0.006	±0.003	±0.008
5/8	±0.004	±0.007	±0.004	±0.011
3/4	±0.004	±0.007	±0.004	±0.011

**4 - Type of insert**

<b>A</b>	<b>B</b>	<b>C</b>	<b>F</b>	<b>G</b>
<b>H</b>	<b>J</b>	<b>M</b>	<b>N</b>	<b>Q</b>
<b>R</b>	<b>T</b>	<b>U</b>	<b>W</b>	<b>Z</b>
				<b>Special</b>

<b>4</b>	<b>3</b>
5	6

5- Cutting edge length		insert shape						
in	In.Circle Dimension (in)	C	D	R	S	T	V	W
1.2 (5)	5/32					06		02
1.5 (6)	5			05				
1.8 (7)	7/32			09				
	0.236		06					
2	1/4	06	07			11	11	04
	0.315			08				
3	3/8	09	11	09	09	16	16	06
	0.394			10				
	0.472			12				
4	1/2	12	15	12	12	22	22	08
5	5/8	16		15	15	27		
	0.630			16				
6	3/4	19		19	19	33		
	0.787			20				
	0.984			25				
8	1	25		25	25			
10	1 1/4			31				
	1.260			32				

6- Thickness	
A, B, C, N, O, W,	
H, M, R, T,	
F, G, J, U,	

Example:

0.5(1)	= 1/32
0.6	= 0.040
1(2)	= 0.625
1.2	= 0.075
1.5(3)	= 3/32
2	= 1/8
2.5	= 5/32
3	= 3/16
3.5	= 7/32
4	= 1/4
5	= 5/16
6	= 3/8
7	= 7/16
8	= 1/2

<b>2</b>	<b>F</b>	<b>-</b>	<b>R</b>
7	8	-	9

7- Nose radius	
Corner radius	
Example:	
MO = round insert (metric)	
OO = Sharp	6 = 3/32
0 = 0.004	7 = 7/64
0.5 = 0.008	8 = 1/8
1 = 1/64	X = Others
2 = 1/32	
3 = 3/64	
4 = 1/16	
5 = 5/64	

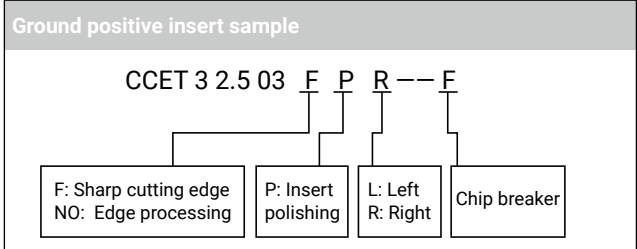
Approaching angle (Kr)	Wiper clearance angle (an)
A = 45°	A = 3°
D = 60°	B = 5°
E = 75°	C = 7°
F = 85°	D = 15°
G = 87°	E = 20°
P = 90°	F = 25°
Z = Others	G = 30°
	N = 0°
	P = 11°
	Z = Others

8- Edge preparation	
F	Sharp cutting edge
NO	Edge processing

9-Direction of the blade	
L	Left
R	Right

10- Chip Breaker Illustration

Refer to page : 28-43



ISO Turning Insert



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Turning Inserts


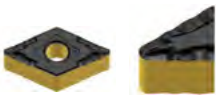
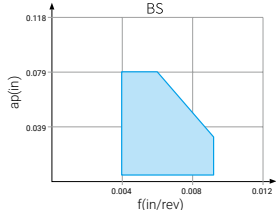
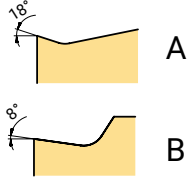

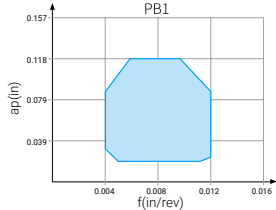
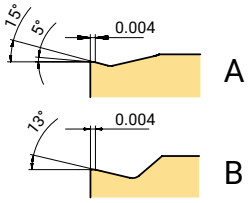

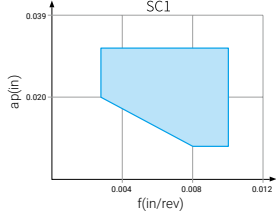
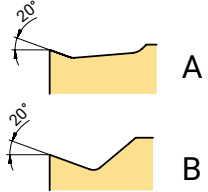

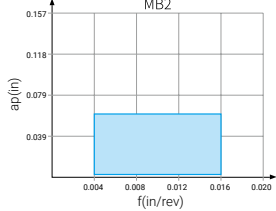
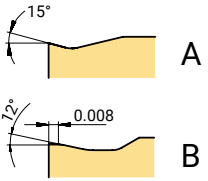

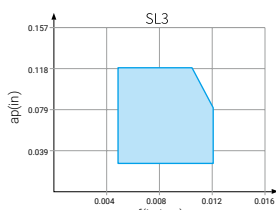
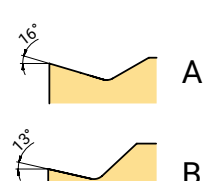
Turning and Grooving Grade Application Guide








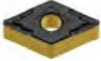
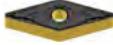

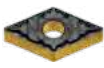





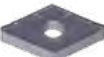










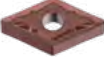




Material Group	ISO	Turning						Grooving/ Parting off			ISO
		Coated		Cermet	Uncoated	PCBN	PCD	Coated		Uncoated	
		CVD	PVD					CVD	PVD		
<b>P</b> Non-alloy steels/ Alloyed steels	P01	AC052P									P01
	P10	AC150P						AC230P			P10
	P20	AC250P		AP200U				AP301U			P20
	P30	AC350P			AT202			AP330M			P30
	P40										P40
	P50										P50
<b>M</b> Stainless steels	M01										M01
	M10	AC100M		AP100S					AP301U		M10
	M20	AC200M		AP301M					AP330M		M20
	M30			AP200U							M30
	M40										M40
<b>K</b> Cast iron	K01	AC100K	AC102K				PB90				K01
	K10	AC202K			AT202			AC230P	AP301U		K10
	K20										K20
	K30										K30
	K40										K40
<b>N</b> Aluminum/Aluminum alloys	N01										N01
	N10				AW100K			PD20		AW100K	N10
	N20										N20
	N30										N30
<b>S</b> Heat resistant alloys	S01			AP100S							S01
	S10	AC100M		AP301M							S10
	S20	AC200M		AP200U							S20
	S30										S30
	S40										S40
<b>H</b> Hardened steels/ Chilled cast iron	H01						PB30				H01
	H10						PB60				H10
	H20										H20
	H30										H30



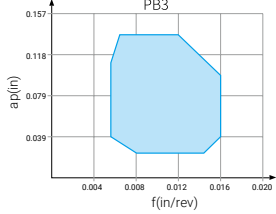
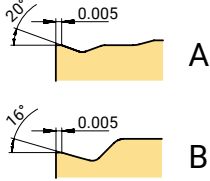

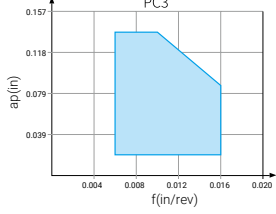
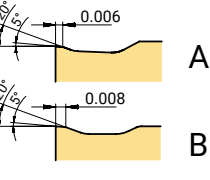
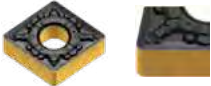
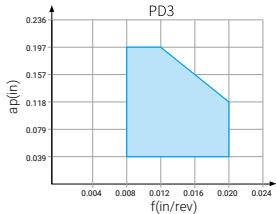
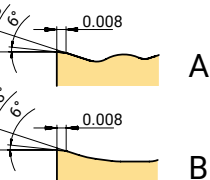
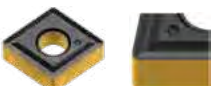
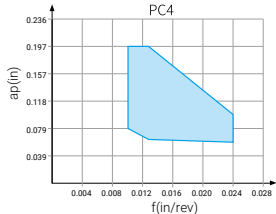
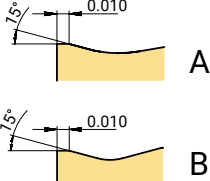

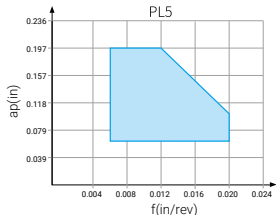
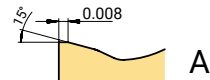
ISO Turning Insert

**Overview of Turning Insert Geometries**









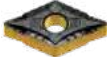




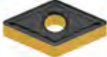




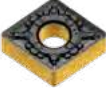
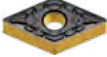




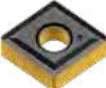
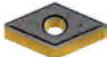







Negative Inserts

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Profiling	<p><b>BS</b></p> 	<p><b>Finishing and semi-finishing profile turning</b>                      Suitable for turning with changing depth of cut. Smooth chip evacuation</p>		
Finishing	<p><b>PB1</b></p> 	<p><b>First choice for steel finish turning</b>                      Light cutting chip breaker, low cutting force, suitable for machining slender shaft, thin wall and unstably clamped parts, good cutting performance</p>		
	<p><b>SC1</b></p> 	<p><b>First choice for heat resistant alloy finish turning</b>                      Excellent performance at low depth of cut.</p>		
	<p><b>MB2</b></p> 	<p><b>First choice for stainless steel finish turning</b>                      High positive rake angle reduced cutting force and built-up edge, can obtain much better surface quality. Very good chip breaking at low feed and cutting depth.</p>		
Light cutting	<p><b>SL3</b></p> 	<p><b>Recommended for heat resistant alloy light turning.</b>                      Suitable for heat resistant alloy, Ti-alloy. Sharp and wavy cutting edge can get good surface finish and good chip breaking results.</p>		



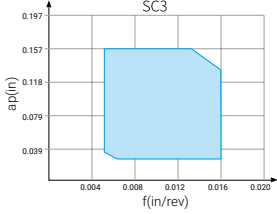
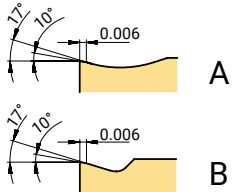

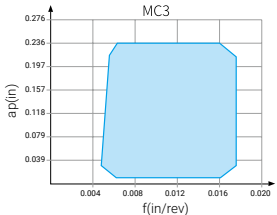
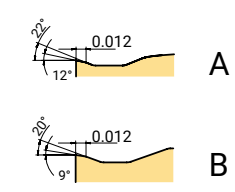

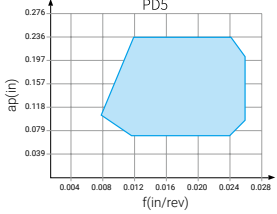
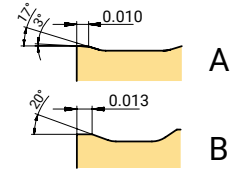

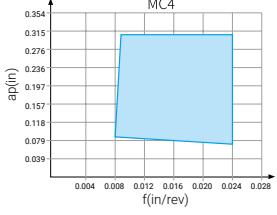
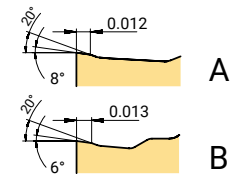

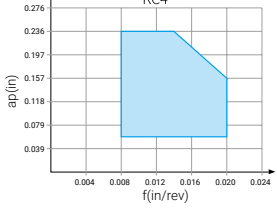
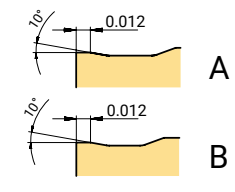
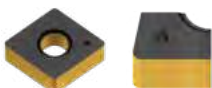
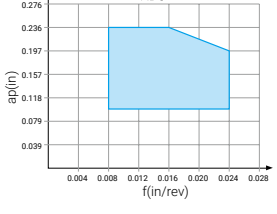
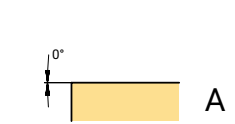
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	CNMG-PB1  P50	DNMG-PB1  P54	SNMG-PB1  P57	TNMG-PB1  P60	VNMG-PB1  P63	WNMG-PB1  P65	
	CNMG-SC1  P50	DNMG-SC1  P54		TNMG-SC1  P60	VNMG-SC1  P63	WNMG-SC1  P65	
	CNMG-MB2  P50	DNMG-MB2  P54	SNMG-MB2  P57	TNMG-MB2  P60	VNMG-MB2  P63	WNMG-MB2  P65	
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

















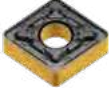















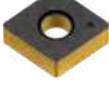




Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Semi-finishing	<p>PB3</p> 	<p><b>First choice for steel semi finish turning</b></p> <p>The positive rake angle combined with small land guarantees edge strength and sharpness, reducing the cutting forces. The wavy side edge design has a good chip breaking results in out-copying turning on the shoulder, and in profile turning at different cutting depths.</p>		
	<p>PC3</p> 	<p><b>Alternative chipbreaker for steel semi-finish turning</b></p> <p>Unique geometry design offers wider chip breaking range. Double rake angle for smooth cutting. Enhanced insert tip reduced crater wear.</p>		
Medium	<p>PD3</p> 	<p><b>First choice for steel medium turning</b></p> <p>It has a strong chip control ability at low feed and cutting depth, and reduces crater wear. The chip breaking is also very good at high feed and cutting depth due to the geometry design. Double rake angle design makes sharp cutting edge and reduces cutting force.</p>		
	<p>PC4</p> 	<p><b>First choice for cast iron medium turning</b></p> <p><b>Alternative chipbreaker for carbon steel and alloy steel medium turning</b></p> <p>Flat T-land guarantees the strength of the cutting edge. This multi-purpose geometry can be used in universal applications.</p>		
	<p>PL5</p> 	<p><b>First choice for steel slender bar turning</b></p> <p>Open chip breaker leads to smooth cutting with low cutting force, which is suitable for slender shaft turning.</p>		




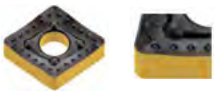
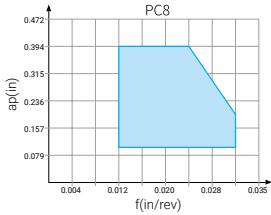
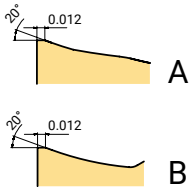

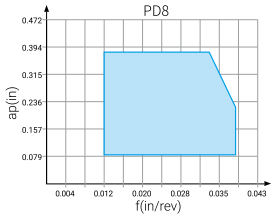
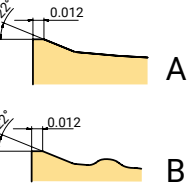
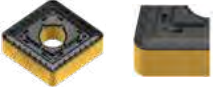
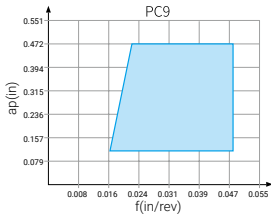
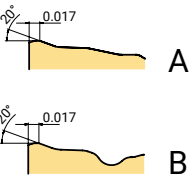

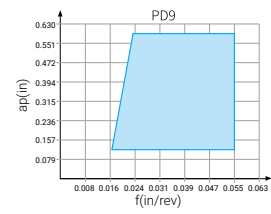
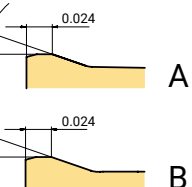
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	<p>CNMG-PB3</p>  <p>P50</p>	<p>DNMG-PB3</p>  <p>P54</p>		<p>TNMG-PB3</p>  <p>P60</p>	<p>VNMG PB3</p>  <p>P63</p>	<p>WNMG-PB3</p>  <p>P65</p>	
	<p>CNMG-PC3</p>  <p>P50</p>	<p>DNMG-PC3</p>  <p>P55</p>	<p>SNMG-PC3</p>  <p>P57</p>	<p>TNMG-PC3</p>  <p>P60</p>	<p>VNMG-PC3</p>  <p>P63</p>	<p>WNMG-PC3</p>  <p>P65</p>	
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	<p>CNMG-PC4</p>  <p>P51</p>	<p>DNMG-PC4</p>  <p>P56</p>	<p>SNMG-PC4</p>  <p>P58</p>	<p>TNMG-PC4</p>  <p>P61</p>	<p>VNMG-PC4</p>  <p>P64</p>	<p>WNMG-PC4</p>  <p>P66</p>	
		<p>DNMG-PL5</p>  <p>P55</p>		<p>TNMG-PL5</p>  <p>P60</p>		<p>WNMG-PL5</p>  <p>P66</p>	









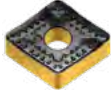


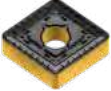

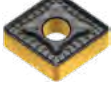

ISO Turning Insert

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Medium	<p>SC3</p> 	<p><b>First choice for heat resistant alloy medium turning</b></p> <p>Used in heat resistant alloy and titanium alloy medium turning. Large rake angle and small land width design allows for easy cutting and is suitable for soft steel turning.</p>		
	<p>MC3</p> 	<p><b>First choice for stainless steel medium turning</b></p> <p>Sharp cutting edge, low cutting force, wide chip breaking range and good chip removability.</p>		
Roughing	<p>PD5</p> 	<p><b>Alternative chipbreaker for steel rough turning</b></p> <p>A strong cutting edge. Double rake angle design effectively reduces the cutting force, can still have good chip breaking at small cutting depth.</p>		
	<p>MC4</p> 	<p><b>Alternative chipbreaker for stainless steel and heat resistant alloy rough turning</b></p> <p>Large chip breaker design, smooth chip evacuation, good chip breaking, with high metal removal rate.</p>		
	<p>KC4</p> 	<p><b>First choice for cast iron turning</b></p> <p>It has strong cutting edge, reliable and stable performance.</p>		
	<p>KD5</p> 	<p><b>First choice for cast iron rough turning</b></p> <p>High cutting edge strength, suitable for interrupt cutting and unstable cutting.</p>		

	80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
	CNMG-SC3  P51	DNMG-SC3  P55	SNMG-SC3  P57	TNMG-SC3  P60	VNMG-SC3  P64	WNMG-SC3  P66	
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	CNMG-PD5  P52	DNMG-PD5  P56	SNMG-PD5  P58	TNMG-PD5  P61		WNMG-PD5  P67	
	CNMG-MC4  P51	DNMG-MC4  P56	SNMG-MC4  P58	TNMG-MC4  P61		WNMG-MC4  P67	
	CNMG-KC4  P52	DNMG-KC4  P56	SNMG-KC4  P58	TNMG-KC4  P61	VNMG-KC4  P64	WNMG-KC4  P67	
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ISO Turning Insert



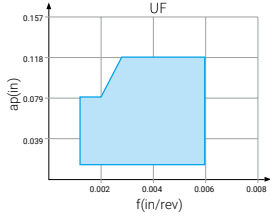
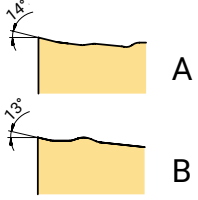

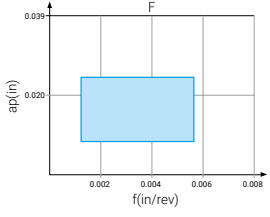


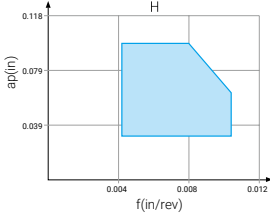
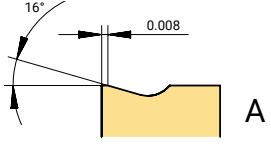
Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Heavy roughing	<p>PC8</p> 	<p><b>Light cutting geometry for heavy turning</b> Positive rake angle and curved cutting edge design, low cutting force.</p>		
	<p>PD8</p> 	<p><b>Heavy turning geometry for soft steel and stainless steel</b> The geometry design ensures low cutting force. Suitable for low power machine tools. Applied in steel, stainless steel and cast iron heavy turning.</p>		
	<p>PC9</p> 	<p><b>First choice for steel heavy rough turning</b> Wavy geometry is good for chip breaking. The geometry has a big space for chips, which is suitable for high metal removal rate.</p>		
	<p>PD9</p> 	<p><b>Alternative chipbreaker for steel heavy rough turning</b> High edge strength is suitable for big cutting depth and high feed turning. High machining reliability.</p>		












	80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
	CNMM-PC8  P53						
	CNMM-PD8  P53		SNMM-PD8  P59	TNMM-PD8  P62			
	CNMM-PC9  P53		SNMM-PC9  P59				
	CNMM-PD9  P53		SNMM-PD9  P59				

ISO Turning Insert



Negative Ground Insert



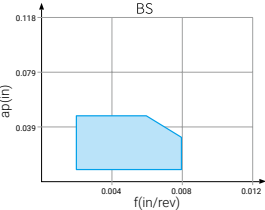
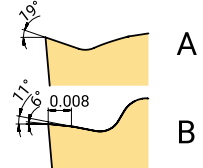

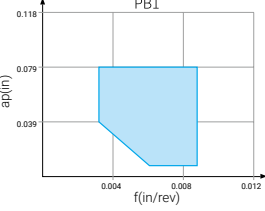
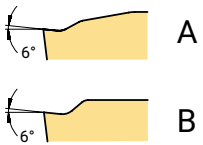

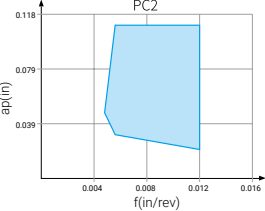
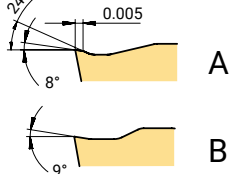
Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Finishing	<p>UF</p> 	<p><b>Suitable for precision turning</b> Low cutting forces, good chip breaking, suitable for finish turning.</p>		
	<p>F</p> 	<p><b>Finish turning</b> Low cutting force, good chip control. The sharp edge produces a good surface finish.</p>		
Semi-finishing-Rough machining	<p>H</p> 	<p><b>Light turning</b> Excellent chip control at low to medium feed rates. Strong edge strength.</p>		









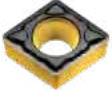
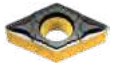




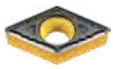



80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
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			<p>TNGG-H</p>  <p>P62</p>			

ISO Turning Insert


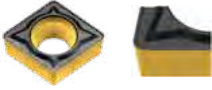
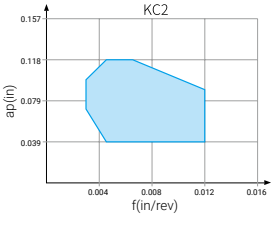
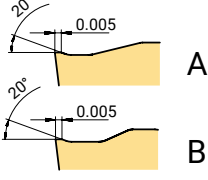
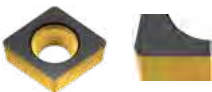
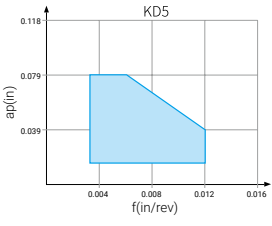
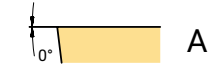
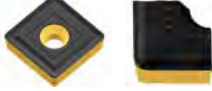
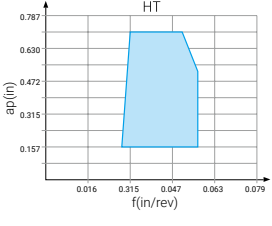
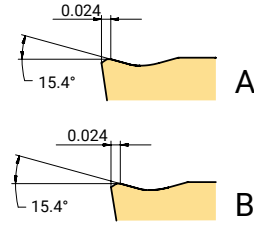

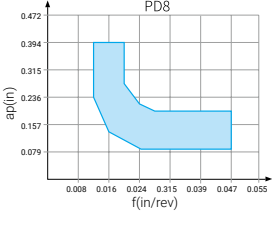
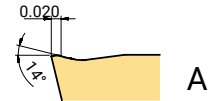

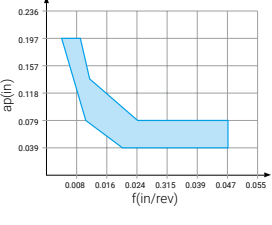
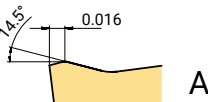
**Overview of Turning Insert Geometry**

Positive Pressed Insert













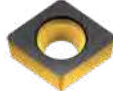






Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Profiling	<p>BS</p> 	<p><b>Profile turning</b> Profile turning or turning with changing depth of cut, smooth chip evacuation.</p>		
Finishing	<p>PB1</p> 	<p><b>First choice for steel finish turning</b> Positive rake angle reduces cutting force and built-up edge, and obtains better surface finish and longer tool life. Also can be used in stainless steel turning.</p>		
Semi-finishing	<p>PC2</p> 	<p><b>First choice for steel and stainless steel semi-finish turning</b> Sharp geometry design ensures low cutting force, less built-up edge and excellent chip control.</p>		

	80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
					VBMT-BS  P85		
	CCMT-PB1 CPMT-PB1  P71	DCMT-PB1  P75	SCMT-PB1  P78	TCMT-PB1 TPMT-PB1  P80	VBMT-PB1 VCMT-PB1  P86		
	CCMT-PC2 CPMT-PC2  P71	DCMT-PC2  P75	SCMT-PC2  P78	TCMT-PC2 TPMT-PC2  P80	VBMT-PC2 VCMT-PC2  P86		

ISO Turning Insert



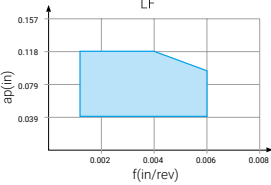
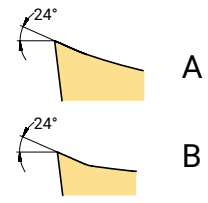

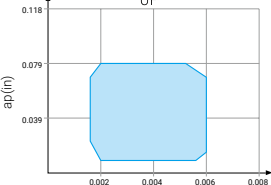
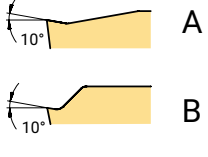
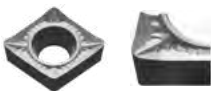
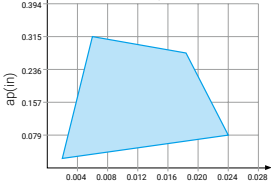
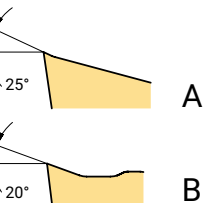

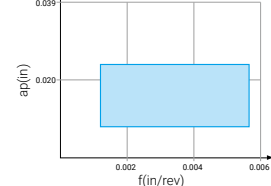


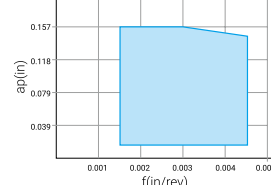
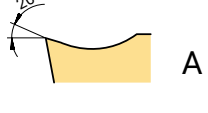

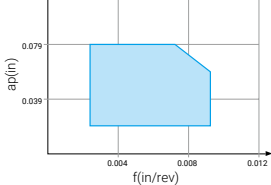
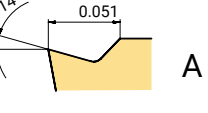
Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Medium	KC2 	<b>General purpose geometry for steel, stainless steel and cast iron turning</b> Suitable for medium and rough turning. Simple and durable chip breaker design, very good versatility and wide application range.		
Roughing	KD5 	<b>Geometry for cast iron rough turning</b> Suitable for unstable machining due to its strong cutting edge. Reduced chipping.		
	HT 	<b>Geometry for steel turning with large cutting depth</b> Open chip breaker is suitable for large cutting depth with smooth chip evacuation. Good cost efficiency.		
Semi-finishing	PD8 	<b>Geometry for carbon steel and alloy steel heavy turning</b> The wide chip breaker avoids chip jamming at deep depth of cut. Has good chip control at light depth of cut as well.		
Medium	No code 	<b>Alternative chipbreaker for cast iron and alloy steel medium turning</b> Negative land and big rake angle design ensure cutting edge strength and sharpness.		


































	80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
	<p>CCMT-KC2</p>  <p>P72</p>	<p>DCMT-KC2</p>  <p>P75</p>	<p>SCMT-KC2</p>  <p>P78</p>	<p>TCMT-KC2</p>  <p>P81</p>	<p>VBMT-KC2</p>  <p>P86</p>		
	<p>CCMW-KD5</p>  <p>P72</p>	<p>DCMW-KD5</p>  <p>P76</p>	<p>SCMW-KD5</p>  <p>P78</p>	<p>TCMW-KD5</p>  <p>P81</p>			
			<p>SCMT-HT</p>  <p>P78</p>				
							<p>RCMX-PD8</p>  <p>P90</p>
							<p>RCMX</p>  <p>P90</p>

ISO Turning Insert

Positive Ground Insert

Application	Chip breaker	Features	Chip breaking range	Cross section geometry 
Finishing	<p>LF</p> 	<p><b>Finish turning</b> Sharp cutting edge, low cutting force, suitable for Swiss-type automatic lathe with 2 direction machining.</p>		
	<p>UF</p> 	<p><b>First choice for heat resistant alloy turning</b> Peripheral ground finish turning inserts. High repeatability on insert positioning. Sharp cutting edge can achieve good machining tolerance.</p>		
Semi-finishing	<p>NC2</p> 	<p><b>Choice for aluminium alloy turning</b> Very positive rake angle is designed for non-ferrous metal finish and semi-finish turning. It reduces the cutting force and make smooth chip evacuation. The polished rake surface, with reduced friction and built-up edge.</p>		
Finishing	<p>F</p> 	<p><b>Choice for finish turning</b> Excellent chip control at low feed rate. Very low cutting force.</p>		
Low feed	<p>M</p> 	<p><b>Suitable for medium turning in automatic lathes</b> Excellent chip control at low to medium feed rates. Reliable machining. Big rake angle avoids work hardening.</p>		
Semi-finishing	<p>Y</p> 	<p><b>Choice for semi-finish rough turning in automatic lathe</b> The strong edge can be used in rough turning. Good chip control for low to medium feed rate</p>		

	80° Rhombus 	55° Rhombus 	90° Square 	60° Triangle 	35° Rhombus 	80° Trigon 	Round 
	<p>CCGT-LF</p>  <p>P70</p>	<p>DCGT-LF</p>  <p>P74</p>		<p>TCGT-LF</p>  <p>P79</p>	<p>VBGT-LF VCGT-LF VPGT-LF</p>  <p>P84</p>		
	<p>CCGT-UF</p>  <p>P70</p>	<p>DCGT-UF</p>  <p>P74</p>		<p>TCGT-UF</p>  <p>P79</p>	<p>VBGT-UF VCGT-UF VPGT-UF</p>  <p>P84, 85</p>		
	<p>CCGT-NC2</p>  <p>P71</p>	<p>DCGT-NC2</p>  <p>P75</p>	<p>SCGT-NC2</p>  <p>P78</p>	<p>TCGT-NC2</p>  <p>P79</p>	<p>VCGT-NC2</p>  <p>P85</p>	<p>RCGT-NC2</p>  <p>P90</p>	
	<p>CCET-F</p>  <p>P73</p>	<p>DCET-F</p>  <p>P76</p>		<p>TBET-F TCET-F TPEH-F</p>  <p>P81, 82, 83</p>	<p>VBET-F VCET-F VPET-F</p>  <p>P86, 87</p>	<p>WBET-F</p>  <p>P89</p>	
	<p>CCET-M</p>  <p>P73</p>	<p>DCET-M</p>  <p>P77</p>		<p>TCET-M</p>  <p>P83</p>	<p>VBET-M VPET-M</p>  <p>P87, 88</p>		
					<p>VBET-Y</p>  <p>P88</p>		

ISO Turning Insert

**Turning Grade Description**

**Basic Grades for Turning**

**P Steel, cast steel, ferrite/martensite stainless steel and malleable cast iron**

**Basic grade**

**AC052P P05(P01-P15)**

CVD coated grade, has good crater resistance and chipping resistance, which is recommended for high productivity medium and rough turning in stable condition, can keep edge reliability in dry or wet machining with high temperature.

**AC150P P15(P10-P25)**

CVD coated grade, can be used in finish to rough turning on steel and cast steel, and is recommended in continuous and light interrupted cutting where it can keep high metal removal rate.

**AC250P P25(P20-P35)**

CVD coated grade, 1st choice for steel turning, used in finish to rough turning on steel and cast steel. It's recommended for continuous and interrupted machining.

**AC350P P35(P25-P45)**

CVD coated grade, can be used in rough turning on steel and cast steel under poor conditions. Reliable cutting edge made this grade good for interrupted machining with high metal removal rate.

**Supplemental grade**

**AP200U P25(P15-P35)**

PVD coated grade, recommended for finish turning on low carbon steel with low cutting speed or low feed.

**AC200M P35(P25-P40)**

CVD coated grade. Supplemental grade for steel turning where high toughness is required.

**AT202 P15(P10-P20)**

Uncoated cermet grade. It has excellent built-up edge resistance and chipping resistance which can be used in finish turning with good surface quality or where low cutting force are required.

**M Austenitic stainless steel, cast steel, manganese steel, alloyed cast iron, malleable cast iron and free cutting iron.**

**Basic grade**

**AC100M M15(M05-M20)**

CVD coated grade. It's recommended for finish machining and light rough machining. It's suitable for machining at medium to high cutting speed due to its heat resistance feature of wear resistant coating.

**AC200M M25(M15-M30)**

CVD coated grade, optimised for semi-finish to rough turning, can be used in interrupted machining in which it can keep edge reliability due to good thermal shock stability and mechanical shock resistance.

**AP200U M25(M15-M35)**

PVD coated grade, used in finish turning at low to medium speed and also in interrupted turning due to excellent thermal stability, outstanding performance in machining when sharp edge and edge toughness or good surface quality are required.

**AP301M M25(M15-M35)**

PVD coated grade. Mainly used in machining steel and stainless steel small parts. It has excellent built-up edge resistance, good machining stability, can obtain good surface quality, and achieve longer tool life.

**Supplemental grade**

**AP100S M15(M05-M25)**

PVD coated grade, recommended for finish turning due to its high hardness and resistance to plastic deformation.

**K****Cast iron, chilled cast iron and short chip malleable cast iron****Basic grade****AC100K K05(K01-K15)**

CVD coated grade, has thick and smooth wear resistant coating and hard substrate, recommended for grey cast iron high speed turning.

**AC102K K05(K01-K15)**

CVD coated grade, has thick and smooth wear resistant coating and hard substrate, recommended for nodular cast iron high speed turning.

**AC202K K15(K10-K30)**

1st choice for cast iron turning. It can deal with interrupted cutting due to its high wear resistant CVD coating, used in finish to rough turning on cast iron at low to medium cutting speed.

**Supplemental grade****PB90 K10(K01-K20)**

CBN grade. Suitable for grey cast iron and chilled cast iron interrupted finish turning due to its good edge strength and wear resistance.

**AT202 K15(K10-K20)**

Uncoated cermet grade. It has excellent built-up edge resistance and good plastic deformation resistance. It can be used in nodular cast iron finish turning when surface quality, small tolerance or low cutting force are required.

**N****Non-ferrous metals****Basic grade****AW100K N15 (N05-N15)**

Uncoated grade. It has both excellent wear resistance and sharp edge. Used in Al alloy rough to finish machining.

**PD20 N10 (N01-N20)**

PCD grade, used in non-ferrous material and non-metal material machining which can have longer tool life, completely clean cutting and good surface quality.

**S****Heat resistant alloys****Basic grade****AP100S S15(S05-S25)**

1st choice for heat resistant alloys. PVD coated grade has high hardness and plastic deformation resistance, can keep high performance and good wear resistance.

**AP200U S25(S15-S35)**

PVD coated grade. Used in low cutting speed or light interrupted cutting. Suitable for semi-roughing or continuous machining for a short time due to its good notch wear resistance and anti-heat shock capability.

**Supplemental grade****AC100M S15(S05-S20)**

CVD coated grade, suitable for heat resistant alloy continuous high speed machining .

**AC200M S25(S15-S35)**

CVD coated grade, suitable for heat resistant alloy general machining.

**H****Hardened materials****Basic grade****PB30 H10(H05-H15)**

CBN grade with low CBN content, is used in hardened steel continuous machining at high speed and light interrupted machining.

**PB60 H15(H10-H25)**

1st choice of CBN grade medium CBN content for hardened steel interrupted machining and continuous machining at medium speed.



Cutting Data Recommendation--Negative Insert

Materials		Materials															
		Workpiece Materials		Brinell Hardness (HB)	Tensile strength Rm(lbs/in <sup>2</sup> )	AT202			AC052P			AC150P			AC250P		
ISO						f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)		
				0.004	0.012	0.020	0.004	0.016	0.024	0.004	0.016	0.024	0.004	0.016	0.024		
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	62000	650	330	230	2000	1470	1080	1590	1180	880	1240	850	680
		0.25 < C ≤ 0.55%	Annealed	190	92700	650	330	230	1800	1300	960	1200	880	680	920	650	490
		0.25 < C ≤ 0.55%	Heat-treated	210	103000	650	260	160	1300	920	650	850	720	550	650	520	440
		C > 0.55%	Annealed	190	92700	650	260	160	1700	1260	900	880	720	520	780	520	410
		C > 0.55%	Heat-treated	300	147000	650	260	160	1200	800	590	680	590	490	520	390	360
	Free cutting steel(short chip)	Annealed	220	108000	650	260	160	1900	1380	980	1440	1010	820	1110	720	570	
	Low-alloyed steel	Annealed	175	85700	590	260	160	2000	1300	930	1140	850	720	780	570	440	
		Heat-treated	300	146900	590	260	160	1700	1150	820	720	550	490	460	320	270	
		Heat-treated	380	186000	590	260	160	1080	750	570	520	390	320	320	230	180	
		Heat-treated	430	214200	590	260	160	870	600	460	290	230					
	High-alloyed steel and high-alloyed tool steel	Annealed	200	97900	520	260	160	1460	960	700	1080	750	490	680	470	270	
		Hardened and tempered	300	147000	520	260	160	980	650	520	750	460	360	420	270	210	
Hardened and tempered		400	197000	490	260	160	720	460	340	260	230						
Stainless steel	Ferritic/Martensite,Annealed	200	97900											590	490	390	
	Martensite,Heat-treated	330	162000											460	320	230	
M	Stainless steel	Austenitic,hardened	200	97900													
		Austenitic,precipitation hardened stainless steel(PH stainless steel)	300	147000													
		Austenitic,ferritic,duplex	230	113000													
K	Malleable cast iron	Ferritic	200	58000													
		Pearlitic	260	101000													
	Grey cast iron	Low tensile strength	180	29000													
		High tensile strength/Austenitic	245	50800													
	Nodular cast iron	Ferritic	155	58000													
Pearlitic		265	101000														
		GGV(CG)	230	58000													
N	Wrought aluminum alloy	Non-aging alloy	30	-													
		Aged alloy	100	49300													
	Cast aluminum alloy	≤ 12% Si, non-aging alloy	75	37700													
		≤ 12% Si, aged alloy	90	45000													
		> 12% Si, non-aging alloy	130	65300													
	Magnesium alloy		70	36300													
	Copper and copper alloy(bronze/ brass)	Unalloyed,electrolytic copper	100	49300													
Brass,bronze,red brass		90	45000														
Cu alloy,short chip		110	55100														
High tensile,Ampco alloy		300	146500														
S	Heat-resistant alloy	Fe-based	Annealed	200	98600												
			Aged	280	136000												
		Ni or Co based	Annealed	250	122000												
			Aged	350	171000												
	Titanium alloy	Pure Titanium	200	98600													
		α and β alloy,aged	375	182700													
Tungsten alloy	β alloy	410	203000														
Molybdenum alloy		300	146500														
H	Hardened steel	Hardened and tempered	50HRC														
		Hardened and tempered	55HRC														
		Hardened and tempered	60HRC														
	Chilled cast iron	Hardened and tempered	50HRC														

\*The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant (f should be adjust according to insert radius)



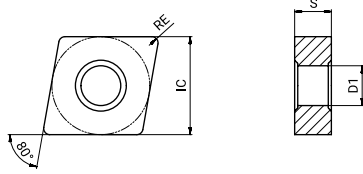
Cutting Data Recommendation--Positive Insert

Materials		Cutting Data															
		AT202			AC052P			AC150P			AC250P						
ISO	Workpiece Materials	Brinell Hardness (HB)	Tensile strength Rm(lbs/in <sup>2</sup> )	f (in/rev)			f (in/rev)			f (in/rev)			f (in/rev)				
				0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016	0.004	0.008	0.016		
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	62000	656	328	230	1960	1410	1010	1520	1310	1080	1180	1010	850
		0.25 < C ≤ 0.55%	Annealed	190	92700	656	328	230	1770	1260	900	1180	1080	850	950	820	620
		0.25 < C ≤ 0.55%	Heat-treated	210	103000	650	260	160	1250	850	590	880	780	720	650	590	520
		C > 0.55%	Annealed	190	92700	650	260	160	1700	1190	830	1080	980	950	820	720	680
		C > 0.55%	Heat-treated	300	147000	650	260	160	1180	730	520	680	590	550	520	420	390
	Free cutting steel(short chip)	Annealed	220	108000	650	260	160	1900	1310	910	1440	1310	1240	1050	950	900	
	Low-alloyed steel	Annealed	175	85700	590	260	160	1930	1280	860	1140	1010	980	850	780	720	
		Heat-treated	300	146900	590	260	160	1670	1080	750	650	550	520	440	390	320	
		Heat-treated	380	186000	590	260	160	1050	680	500	390	320	290	320	270	210	
		Heat-treated	430	214200	590	260	160	870	540	390	260	230		210	180		
	High-alloyed steel and high-alloyed tool steel	Annealed	200	97900	520	260	160	1390	900	640	1050	950	910	880	780	720	
		Hardened and tempered	300	147000	520	260	160	920	590	460	650	550	490	550	450	390	
Hardened and tempered		400	197000	490	260	160	650	390	340	260	230		210	180			
Stainless steel	Ferritic/Martensite,Annealed	200	97900											620	550	490	
	Martensite,Heat-treated	330	162000											290	260	190	
M	Stainless steel	Austenitic,hardened	200	97900													
		Austenitic,precipitation hardened stainless steel(PH stainless steel)	300	147000													
		Austenitic,ferritic,duplex	230	113000													
K	Malleable cast iron	Ferritic	200	58000													
		Pearlitic	260	101000													
	Grey cast iron	Low tensile strength	180	29000													
		High tensile strength/Austenitic	245	50800													
	Nodular cast iron	Ferritic	155	58000													
Pearlitic		265	101000														
		GGV(CG)	230	58000													
N	Wrought aluminum alloy	Non-aging alloy	30	-													
		Aged alloy	100	49300													
	Cast aluminum alloy	≤ 12% Si, non-aging alloy	75	37700													
		≤ 12% Si, aged alloy	90	45000													
		> 12% Si, non-aging alloy	130	65300													
	Magnesium alloy		70	36300													
	Copper and copper alloy(bronze/ brass)	Unalloyed,electrolytic copper	100	49300													
Brass,bronze,red brass		90	45000														
Cu alloy,short chip		110	55100														
High tensile,Ampco alloy		300	146500														
S	Heat-resistant alloy	Fe-based	Annealed	200	98600												
			Aged	280	136000												
		Ni or Co based	Annealed	250	122000												
			Aged	350	171000												
		Cast	320	156600													
	Titanium alloy	Pure Titanium	200	98600													
α and β alloy,aged		375	182700														
β alloy		410	203000														
Tungsten alloy		300	146500														
Molybdenum alloy		300	146500														
H	Hardened steel	Hardened and tempered	50HRC														
		Hardened and tempered	55HRC														
		Hardened and tempered	60HRC														
	Chilled cast iron	Hardened and tempered	50HRC														








\*The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant ( f should be adjust according to insert radius)



Negative 80° (C)

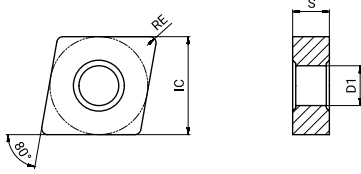


Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition											ISO				
			Recommended parameters		P			M			K			N	S					
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K		AC202K	AW100K	AP100S	
Finishing		CNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●											CNMG 120404E-PB1
		CNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●		●	●											CNMG 120408E-PB1
		CNMG 433-PB1	3/64	0.006-0.018	0.031-0.126			●	●											CNMG 120412E-PB1
		CNMG 431-SC1	1/64	0.003-0.007	0.008-0.031									●						CNMG 120404E-SC1
		CNMG 432-SC1	1/32	0.004-0.010	0.008-0.031									●						CNMG 120408E-SC1
		CNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●							CNMG 120404E-MB2
	CNMG 432-MB2	1/32	0.004-0.012	0.02-0.126						●	●	●							CNMG 120408E-MB2	
Light cutting		CNMG 431-SL3	1/64	0.005-0.010	0.024-0.118													●	CNMG 120404E-SL3	
		CNMG 432-SL3	1/32	0.006-0.012	0.031-0.118													●	CNMG 120408E-SL3	
Semi-finishing		CNMG 431-PB3	1/64	0.002-0.007	0.012-0.138	●		●	●										CNMG 120404E-PB3	
		CNMG 432-PB3	1/32	0.005-0.014	0.024-0.138	●	●	●	●										CNMG 120408E-PB3	
		CNMG 433-PB3	3/64	0.007-0.021	0.035-0.138	●	●	●	●										CNMG 120412E-PB3	
		CNMG 431-PC3	1/64	0.003-0.008	0.013-0.154	●													CNMG 120404E-PC3	
		CNMG 432-PC3	1/32	0.006-0.016	0.027-0.154	●	●	●	●										CNMG 120408E-PC3	
		CNMG 433-PC3	3/64	0.008-0.024	0.04-0.154	●													CNMG 120412E-PC3	
Medium		CNMG 431-PD3	1/64	0.003-0.009	0.016-0.169	●	●	●	●										CNMG 120404E-PD3	
		CNMG 432-PD3	1/32	0.006-0.017	0.031-0.169	●	●	●	●	●									CNMG 120408E-PD3	
		CNMG 433-PD3	3/64	0.009-0.026	0.047-0.169	●	●	●	●	●									CNMG 120412E-PD3	
		CNMG 542-PD3	1/32	0.006-0.017	0.031-0.209		●	●	●	●									CNMG 160608E-PD3	
		CNMG 543-PD3	3/64	0.009-0.026	0.047-0.209		●	●	●	●									CNMG 160612E-PD3	
		CNMG 642-PD3	1/32	0.006-0.017	0.031-0.252		●	●	●	●	●								CNMG 190608E-PD3	
		CNMG 643-PD3	3/64	0.009-0.026	0.047-0.252		●	●	●	●	●								CNMG 190612E-PD3	
		CNMG 644-PD3	1/16	0.012-0.026	0.063-0.252		●	●	●	●	●								CNMG 190616E-PD3	

●: Stock available

Negative 80° (C)



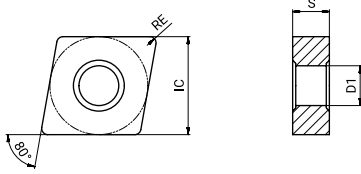
Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition													ISO	
					● ● ● ◐ ◑ ● ◐ ◑ ◐ ◑ ● ◐ ◑ ◐ ●														
			Recommended parameters		P			M			K			N		S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S				
Medium		CNMG 431-SC3	1/64	0.003-0.009	0.016-0.169							●	●	●				●	CNMG 120404E-SC3
		CNMG 432-SC3	1/32	0.006-0.017	0.031-0.169							●	●	●				●	CNMG 120408E-SC3
		CNMG 433-SC3	3/64	0.009-0.026	0.047-0.169							●	●	●				●	CNMG 120412E-SC3
		CNMG 543-SC3	3/64	0.009-0.026	0.047-0.209							●	●	●				●	CNMG 160612E-SC3
		CNMG 544-SC3	1/16	0.012-0.035	0.063-0.209							●	●	●				●	CNMG 160616E-SC3
		CNMG 643-SC3	3/64	0.009-0.026	0.047-0.252							●	●	●				●	CNMG 190612E-SC3
		CNMG 644-SC3	1/16	0.012-0.035	0.063-0.252							●	●	●				●	CNMG 190616E-SC3
		CNMG 431-MC3	1/64	0.003-0.009	0.013-0.169							●	●	●					CNMG 120404E-MC3
		CNMG 432-MC3	1/32	0.006-0.017	0.025-0.169							●	●	●				●	CNMG 120408E-MC3
		CNMG 433-MC3	3/64	0.009-0.026	0.038-0.169							●	●	●					CNMG 120412E-MC3
		CNMG 434-MC3	1/16	0.012-0.035	0.05-0.169							●	●	●					CNMG 120416E-MC3
		CNMG 542-MC3	1/32	0.006-0.017	0.025-0.209							●	●	●					CNMG 160608E-MC3
		CNMG 543-MC3	3/64	0.009-0.026	0.038-0.209							●	●	●					CNMG 160612E-MC3
		CNMG 642-MC3	1/32	0.006-0.017	0.025-0.252							●	●	●					CNMG 190608E-MC3
	CNMG 643-MC3	3/64	0.009-0.026	0.038-0.252							●	●	●					CNMG 190612E-MC3	
		CNMG 431-PC4	1/64	0.003-0.009	0.016-0.169			●	●								●	●	CNMG 120404E-PC4
		CNMG 432-PC4	1/32	0.006-0.017	0.031-0.169		●	●	●								●	●	CNMG 120408E-PC4
		CNMG 433-PC4	3/64	0.009-0.026	0.047-0.169		●	●	●								●	●	CNMG 120412E-PC4
		CNMG 543-PC4	3/64	0.009-0.026	0.047-0.209		●	●	●								●	●	CNMG 160612E-PC4
		CNMG 544-PC4	1/16	0.012-0.035	0.063-0.209		●	●	●								●	●	CNMG 160616E-PC4
		CNMG 643-PC4	3/64	0.009-0.026	0.047-0.252		●	●	●								●	●	CNMG 190612E-PC4
	CNMG 432-MC4	1/32	0.008-0.024	0.047-0.252							●	●	●				●	CNMG 120408E-MC4	
	CNMG 433-MC4	3/64	0.012-0.035	0.071-0.252							●	●	●				●	CNMG 120412E-MC4	
	CNMG 543-MC4	3/64	0.012-0.035	0.071-0.319							●	●	●				●	CNMG 160612E-MC4	
	CNMG 544-MC4	1/16	0.016-0.047	0.094-0.319							●	●	●					CNMG 160616E-MC4	
	CNMG 643-MC4	3/64	0.012-0.035	0.071-0.382							●	●	●					CNMG 190612E-MC4	
	CNMG 644-MC4	1/16	0.016-0.047	0.094-0.382							●	●	●					CNMG 190616E-MC4	





● : Stock available



Negative 80° (C)



Dimension (in)			
Product code	IC	S	D1
CN_43_	1/2	3/16	0.203
CN_54_	5/8	1/4	0.250
CN_64_	3/4	1/4	0.313
CN_85_	1.0	5/16	0.359
CN_86_	1.0	3/8	0.359

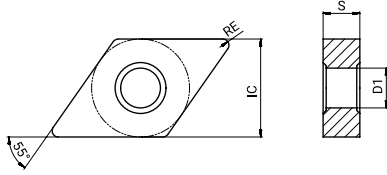
Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition														ISO	
					● ● ● ◐ ◑ ● ◐ ◐ ◐ ● ◐ ◑ ◐ ◐ ●															
			Recommended parameters		P				M				K		N		S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S					
Heavy roughing		CNMM 644-PC8	1/16	0.013-0.025	0.113-0.303				●											CNMM 190616E-PC8
	CNMM 646-PC8	3/32	0.019-0.038	0.17-0.303				●												CNMM 190624E-PC8
		CNMM 432-PD8	1/32	0.006-0.013	0.057-0.205			●	●	●										CNMM 120408E-PD8
	CNMM 433-PD8	3/64	0.009-0.019	0.085-0.205			●	●												CNMM 120412E-PD8
	CNMM 543-PD8	3/64	0.009-0.019	0.085-0.252			●	●												CNMM 160612E-PD8
	CNMM 544-PD8	1/16	0.013-0.025	0.113-0.252			●	●												CNMM 160616E-PD8
	CNMM 546-PD8	3/32	0.019-0.038	0.17-0.252			●	●												CNMM 160624E-PD8
	CNMM 643-PD8	3/64	0.009-0.019	0.085-0.303			●	●												CNMM 190612E-PD8
	CNMM 644-PD8	1/16	0.013-0.025	0.113-0.303			●	●	●											CNMM 190616E-PD8
	CNMM 646-PD8	3/32	0.019-0.038	0.17-0.303			●	●	●											CNMM 190624E-PD8
	CNMM 856-PD8	3/32	0.019-0.038	0.17-0.406			●	●												CNMM 250724E-PD8
	CNMM 866-PD8	3/32	0.019-0.038	0.17-0.406			●	●												CNMM 250924E-PD8
		CNMM 643-PC9	3/64	0.01-0.024	0.094-0.382			●	●	●										CNMM 190612S-PC9
	CNMM 644-PC9	1/16	0.014-0.031	0.126-0.382			●	●	●											CNMM 190616S-PC9
	CNMM 646-PC9	3/32	0.021-0.047	0.189-0.382			●	●	●											CNMM 190624S-PC9
	CNMM 856-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●											CNMM 250724S-PC9
	CNMM 866-PC9	3/32	0.021-0.047	0.189-0.508			●	●	●											CNMM 250924S-PC9
		CNMM 643-PD9	3/64	0.012-0.028	0.104-0.457			●	●	●										CNMM 190612S-PD9
	CNMM 644-PD9	1/16	0.016-0.038	0.139-0.457			●	●	●											CNMM 190616S-PD9
	CNMM 646-PD9	3/32	0.024-0.057	0.208-0.457			●	●	●											CNMM 190624S-PD9
CNMM 856-PD9	3/32	0.024-0.057	0.208-0.61			●	●												CNMM 250724S-PD9	
CNMM 866-PD9	3/32	0.024-0.057	0.208-0.61			●	●	●											CNMM 250924S-PD9	

● : Stock available










Negative 55° (D)



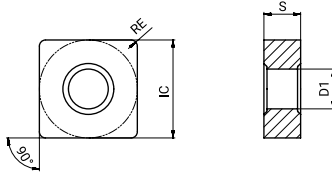
Dimension (in)			
Product code	IC	S	D1
DN_33_	3/8	3/16	0.150
DN_43_	1/2	3/16	0.203
DN_44_	1/2	1/4	0.203

Inserts	ANSI	RE (in)	Machining conditions														ISO	
			● Good condition    ◐ General condition    ◑ Bad condition															
			Recommended parameters		P			M			K			N		S		
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S			
Semi-finishing		DNMG 332-PC3	1/32	0.006-0.016	0.027-0.102	●	●	●										DNMG 110408E-PC3
		DNMG 333-PC3	3/64	0.008-0.024	0.04-0.102		●	●	●									DNMG 110412E-PC3
		DNMG 431-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●									DNMG 150404E-PC3
		DNMG 432-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●									DNMG 150408E-PC3
		DNMG 433-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●									DNMG 150412E-PC3
		DNMG 441-PC3	1/64	0.003-0.008	0.013-0.138	●	●	●	●									DNMG 150604E-PC3
		DNMG 442-PC3	1/32	0.006-0.016	0.027-0.138	●	●	●	●									DNMG 150608E-PC3
		DNMG 443-PC3	3/64	0.008-0.024	0.04-0.138	●	●	●	●									DNMG 150612E-PC3
Medium		DNMG 331-PD3	1/64	0.003-0.009	0.016-0.114	●		●	●									DNMG 110404E-PD3
		DNMG 332-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●									DNMG 110408E-PD3
		DNMG 431-PD3	1/64	0.003-0.009	0.016-0.154	●		●	●									DNMG 150404E-PD3
		DNMG 432-PD3	1/32	0.006-0.017	0.031-0.154	●	●	●	●	●								DNMG 150408E-PD3
		DNMG 433-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●								DNMG 150412E-PD3
		DNMG 441-PD3	1/64	0.003-0.009	0.016-0.154			●	●									DNMG 150604E-PD3
		DNMG 442-PD3	1/32	0.006-0.017	0.031-0.154		●	●	●	●								DNMG 150608E-PD3
		DNMG 443-PD3	3/64	0.009-0.026	0.047-0.154		●	●	●	●								DNMG 150612E-PD3
		DNMG 442R-PL5	1/32	0.006-0.017	0.031-0.154			●	●									DNMG 150608R-PL5
		DNMG 431-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●				●	DNMG 150404E-SC3
		DNMG 432-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●				●	DNMG 150408E-SC3
		DNMG 433-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●				●	DNMG 150412E-SC3
		DNMG 441-SC3	1/64	0.003-0.009	0.016-0.154						●	●	●				●	DNMG 150604E-SC3
		DNMG 442-SC3	1/32	0.006-0.017	0.031-0.154						●	●	●				●	DNMG 150608E-SC3
		DNMG 443-SC3	3/64	0.009-0.026	0.047-0.154						●	●	●				●	DNMG 150612E-SC3
		DNMG 331-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●					DNMG 110404E-MC3
	DNMG 332-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●					DNMG 110408E-MC3	
	DNMG 431-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●					DNMG 150404E-MC3	
	DNMG 432-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●					DNMG 150408E-MC3	
	DNMG 433-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●					DNMG 150412E-MC3	
	DNMG 441-MC3	1/64	0.003-0.009	0.013-0.154						●	●	●					DNMG 150604E-MC3	
	DNMG 442-MC3	1/32	0.006-0.017	0.025-0.154						●	●	●					DNMG 150608E-MC3	
DNMG 443-MC3	3/64	0.009-0.026	0.038-0.154						●	●	●					DNMG 150612E-MC3		









● : Stock available



Negative 90° (S)



Dimension (in)			
Product code	IC	S	D1
SN_43_	1/2	3/16	0.203
SN_54_	5/8	1/4	0.250
SN_64_	3/4	1/4	0.313

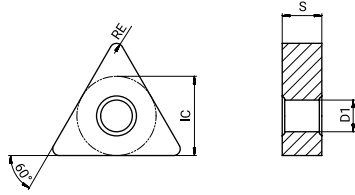
Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition												ISO			
			Recommended parameters		P				M			K		N		S				
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K		AW100K	AP100S	
Finishing		SNMG 431-PB1	1/64	0.002-0.006	0.01-0.126	●		●	●											SNMG 120404E-PB1
		SNMG 432-PB1	1/32	0.004-0.012	0.02-0.126	●	●	●	●											SNMG 120408E-PB1
		SNMG 433-PB1	3/64	0.006-0.018	0.031-0.126		●	●	●											SNMG 120412E-PB1
		SNMG 431-MB2	1/64	0.002-0.006	0.01-0.126						●	●	●							SNMG 120404E-MB2
		SNMG 432-MB2	1/32	0.004-0.012	0.02-0.126						●	●	●							SNMG 120408E-MB2
Light cutting		SNMG 431-SL3	1/64	0.005-0.010	0.024-0.118													●	SNMG 120404E-SL3	
		SNMG 432-SL3	1/32	0.006-0.012	0.031-0.118													●	SNMG 120408E-SL3	
		SNMG 433-SL3	3/64	0.007-0.014	0.039-0.118													●	SNMG 120412E-SL3	
Semi-finishing		SNMG 431-PC3	1/64	0.003-0.008	0.013-0.15	●		●	●										SNMG 120404E-PC3	
		SNMG 432-PC3	1/32	0.006-0.016	0.027-0.15	●		●	●										SNMG 120408E-PC3	
		SNMG 433-PC3	3/64	0.008-0.024	0.04-0.15	●		●	●										SNMG 120412E-PC3	
Medium		SNMG 431-PD3	1/64	0.003-0.009	0.016-0.165	●		●	●	●									SNMG 120404E-PD3	
		SNMG 432-PD3	1/32	0.006-0.017	0.031-0.165	●	●	●	●	●									SNMG 120408E-PD3	
		SNMG 433-PD3	3/64	0.009-0.026	0.047-0.165	●	●	●	●	●									SNMG 120412E-PD3	
		SNMG 642-PD3	1/32	0.006-0.017	0.031-0.248		●	●	●	●									SNMG 190608E-PD3	
		SNMG 432-SC3	1/32	0.006-0.017	0.031-0.165						●	●	●					●	SNMG 120408E-SC3	
		SNMG 433-SC3	3/64	0.009-0.026	0.047-0.165						●	●	●					●	SNMG 120412E-SC3	
		SNMG 543-SC3	3/64	0.009-0.026	0.047-0.205						●	●	●					●	SNMG 150612E-SC3	
		SNMG 544-SC3	1/16	0.012-0.035	0.063-0.205						●	●	●					●	SNMG 150616E-SC3	
		SNMG 643-SC3	3/64	0.009-0.026	0.047-0.248						●	●	●					●	SNMG 190612E-SC3	
		SNMG 431-M3T	1/64	0.008-0.016	0.039-0.157	●													SNMG 120404-M3T	
		SNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●													SNMG 120408-M3T	
		SNMG 431-MC3	1/64	0.003-0.009	0.013-0.165						●	●	●						SNMG 120404E-MC3	
		SNMG 432-MC3	1/32	0.006-0.017	0.025-0.165						●	●	●						SNMG 120408E-MC3	
		SNMG 433-MC3	3/64	0.009-0.026	0.038-0.165						●	●	●						SNMG 120412E-MC3	
		SNMG 543-MC3	3/64	0.009-0.026	0.038-0.205						●	●	●						SNMG 150612E-MC3	
		SNMG 544-MC3	1/16	0.012-0.035	0.05-0.205						●	●	●						SNMG 150616E-MC3	
	SNMG 643-MC3	3/64	0.009-0.026	0.038-0.248						●	●	●						SNMG 190612E-MC3		
	SNMG 644-MC3	1/16	0.012-0.035	0.05-0.248						●	●	●						SNMG 190616E-MC3		

● : Stock available





**Negative 60° (T)**



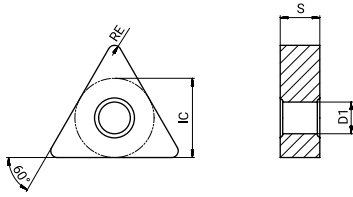
Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ● General condition ✖ Bad condition													ISO		
			Recommended parameters		P			M			K			N		S				
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K		AP100S	
Finishing	TNMG 331-PB1	1/64	0.002-0.006	0.01-0.122	●	●	●	●												TNMG 160404E-PB1
	TNMG 332-PB1	1/32	0.004-0.012	0.02-0.122	●	●	●	●												TNMG 160408E-PB1
	TNMG 333-PB1	3/64	0.006-0.018	0.031-0.122	●	●	●	●												TNMG 160412E-PB1
	TNMG 331-SC1	1/64	0.003-0.007	0.008-0.031																TNMG 160404E-SC1
	TNMG 332-SC1	1/32	0.004-0.010	0.008-0.031																TNMG 160408E-SC1
	TNMG 331-MB2	1/64	0.002-0.006	0.01-0.122						●	●	●							●	TNMG 160404E-MB2
Light cutting	TNMG 331-SL3	1/64	0.005-0.010	0.024-0.118														●	TNMG 160404E-SL3	
	TNMG 332-SL3	1/32	0.006-0.012	0.031-0.118														●	TNMG 160408E-SL3	
	TNMG 333-SL3	3/64	0.007-0.012	0.039-0.118														●	TNMG 160412E-SL3	
Semi-finishing	TNMG 331R-M1T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404R-M1T	
	TNMG 331L-M1T	1/64	0.004-0.012	0.028-0.138	●														TNMG 160404L-M1T	
	TNMG 332R-M1T	1/32	0.004-0.012	0.028-0.138	●														TNMG 160408R-M1T	
	TNMG 332L-M1T	1/32	0.004-0.012	0.028-0.138	●														TNMG 160408L-M1T	
	TNMG 331-PB3	1/64	0.002-0.007	0.012-0.13	●		●	●											TNMG 160404E-PB3	
	TNMG 332-PB3	1/32	0.005-0.014	0.024-0.13	●	●	●	●											TNMG 160408E-PB3	
	TNMG 333-PB3	3/64	0.007-0.021	0.035-0.13	●	●	●	●											TNMG 160412E-PB3	
	TNMG 331-PC3	1/64	0.003-0.008	0.013-0.146	●		●	●											TNMG 160404E-PC3	
	TNMG 332-PC3	1/32	0.006-0.016	0.027-0.146	●		●	●											TNMG 160408E-PC3	
	TNMG 333-PC3	3/64	0.008-0.024	0.04-0.146	●		●	●											TNMG 160412E-PC3	
	Medium	TNMG 331-PD3	1/64	0.003-0.009	0.016-0.161	●		●	●	●										TNMG 160404E-PD3
		TNMG 332-PD3	1/32	0.006-0.017	0.031-0.161	●	●	●	●	●										TNMG 160408E-PD3
TNMG 333-PD3		3/64	0.009-0.026	0.047-0.161	●	●	●	●	●										TNMG 160412E-PD3	
TNMG 331R-M2T		1/64	0.004-0.012	0.028-0.138	●														TNMG 160404R-M2T	
TNMG 331L-M2T		1/64	0.004-0.012	0.028-0.138	●														TNMG 160404L-M2T	
TNMG 331R-PL5		1/64	0.003-0.009	0.016-0.161	●		●	●											TNMG 160404R-PL5	
TNMG 332R-PL5		1/32	0.006-0.017	0.031-0.161	●	●	●	●											TNMG 160408R-PL5	
TNMG 331L-PL5		1/64	0.003-0.009	0.016-0.161	●		●	●											TNMG 160404L-PL5	
TNMG 332L-PL5		1/32	0.006-0.017	0.031-0.161	●	●	●	●											TNMG 160408L-PL5	

● : Stock available



Negative 60° (T)



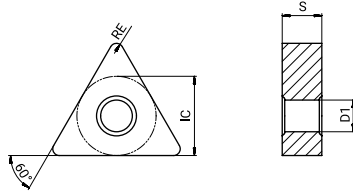
Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203

Inserts	ANSI	RE (in)	Machining conditions														ISO		
			● Good condition    ◐ General condition    ◑ Bad condition																
			Recommended parameters		P				M			K		N		S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S				
Medium		TNMG 331-SC3	1/64	0.003-0.009	0.016-0.161							●	●	●			●	TNMG 160404E-SC3	
		TNMG 332-SC3	1/32	0.006-0.017	0.031-0.161							●	●	●			●	TNMG 160408E-SC3	
		TNMG 333-SC3	3/64	0.009-0.026	0.047-0.161							●	●	●			●	TNMG 160412E-SC3	
		TNMG 331-MC3	1/64	0.003-0.009	0.013-0.161							●	●	●				TNMG 160404E-MC3	
		TNMG 332-MC3	1/32	0.006-0.017	0.025-0.161							●	●	●				TNMG 160408E-MC3	
		TNMG 333-MC3	3/64	0.009-0.026	0.038-0.161							●	●	●				TNMG 160412E-MC3	
		TNMG 432-MC3	1/32	0.006-0.017	0.025-0.193							●	●	●			●	TNMG 220408E-MC3	
		TNMG 433-MC3	3/64	0.009-0.026	0.038-0.193							●	●	●				TNMG 220412E-MC3	
		TNMG 331-PC4	1/64	0.003-0.009	0.016-0.161	●		●	●									TNMG 160404E-PC4	
		TNMG 332-PC4	1/32	0.006-0.017	0.031-0.161	●	●	●	●									TNMG 160408E-PC4	
		TNMG 333-PC4	3/64	0.009-0.026	0.047-0.161		●	●	●									TNMG 160412E-PC4	
		TNMG 433-PC4	3/64	0.009-0.026	0.047-0.193			●	●									TNMG 220412E-PC4	
Roughing		TNMG 332-MC4	1/32	0.008-0.024	0.047-0.228						●	●	●				●	TNMG 160408E-MC4	
		TNMG 333-MC4	3/64	0.012-0.035	0.071-0.228						●	●	●				●	TNMG 160412E-MC4	
		TNMG 432-MC4	1/32	0.008-0.024	0.047-0.26							●	●	●					TNMG 220408E-MC4
		TNMG 433-MC4	3/64	0.012-0.035	0.071-0.26							●	●	●					TNMG 220412E-MC4
		TNMG 221-KC4	1/64	0.004-0.009	0.019-0.13											●	●		TNMG 110304E-KC4
		TNMG 331-KC4	1/64	0.004-0.009	0.019-0.193											●	●		TNMG 160404E-KC4
		TNMG 332-KC4	1/32	0.007-0.019	0.038-0.193											●	●		TNMG 160408E-KC4
		TNMG 333-KC4	3/64	0.01-0.028	0.057-0.193											●	●		TNMG 160412E-KC4
		TNMG 334-KC4	1/16	0.014-0.038	0.076-0.193											●	●		TNMG 160416E-KC4
		TNMG 433-KC4	3/64	0.01-0.028	0.057-0.236											●	●		TNMG 220412E-KC4
		TNMG 434-KC4	1/16	0.014-0.038	0.076-0.236											●	●		TNMG 220416E-KC4
		TNMG 332-PD5	1/32	0.008-0.024	0.047-0.228		●	●	●	●									TNMG 160408E-PD5
		TNMG 333-PD5	3/64	0.012-0.035	0.071-0.228		●	●	●	●									TNMG 160412E-PD5
		TNMG 432-PD5	1/32	0.008-0.024	0.047-0.303		●	●	●	●									TNMG 220408E-PD5
		TNMG 433-PD5	3/64	0.012-0.035	0.071-0.303		●	●	●	●									TNMG 220412E-PD5
		TNMG 434-PD5	1/16	0.016-0.047	0.094-0.303		●	●	●	●									TNMG 220416E-PD5

● : Stock available



Negative 60° (T)

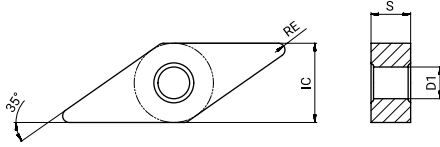


Dimension (in)			
Product code	IC	S	D1
TN_22_	1/4	1/8	0.089
TN_33_	3/8	3/16	0.150
TN_43_	1/2	3/16	0.203










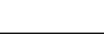




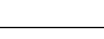

	Inserts Left-hand shown where it's applicable	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition												ISO	
						● ● ● ◐ ◑ ● ◐ ◑ ● ● ● ◐ ◑ ●													
				Recommended parameters		P			M			K			N		S		
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200J	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S				
Roughing		TNMA 331-KD5	1/64	0.004-0.012	0.024-0.228														TNMA 160404E-KD5
		TNMA 332-KD5	1/32	0.008-0.024	0.047-0.228								●	●	●				TNMA 160408E-KD5
		TNMA 333-KD5	3/64	0.012-0.035	0.071-0.228								●	●	●				TNMA 160412E-KD5
		TNMA 334-KD5	1/16	0.016-0.047	0.094-0.228								●	●	●				TNMA 160416E-KD5
		TNMA 432-KD5	1/32	0.008-0.024	0.047-0.303									●	●				TNMA 220408E-KD5
		TNMA 433-KD5	3/64	0.012-0.035	0.071-0.303									●	●				TNMA 220412E-KD5
		TNMA 434-KD5	1/16	0.016-0.047	0.094-0.303									●	●				TNMA 220416E-KD5
Heavy roughing		TNMM 332-PD8	1/32	0.006-0.013	0.057-0.193				●									TNMM 160408E-PD8	
		TNMM 333-PD8	3/64	0.009-0.019	0.085-0.193				●									TNMM 160412E-PD8	
		TNMM 432-PD8	1/32	0.006-0.013	0.057-0.236				●									TNMM 220408E-PD8	
		TNMM 433-PD8	3/64	0.009-0.019	0.085-0.236				●									TNMM 220412E-PD8	
		TNMM 434-PD8	1/16	0.013-0.025	0.113-0.236				●									TNMM 220416E-PD8	
Finishing		TNGG 3(3)03FP-UF	0.004	0.001-0.004	0.012-0.098									●				TNGG 160401FP-UF	
		TNGG 3(3)05FP-UF	0.008	0.001-0.004	0.012-0.098									●				TNGG 160402FP-UF	
		TNGG 331FP-UF	1/64	0.001-0.004	0.012-0.098									●				TNGG 160404FP-UF	
		TNGG 3(3)05FR-F	0.008	0.003-0.008	0.02-0.091									●				TNGG 160402FR-F	
		TNGG 3(3)05FL-F	0.008	0.003-0.008	0.02-0.091									●				TNGG 160402FL-F	
		TNGG 331FR-F	1/64	0.003-0.008	0.02-0.091									●				TNGG 160404FR-F	
		TNGG 331FL-F	1/64	0.003-0.008	0.02-0.091									●				TNGG 160404FL-F	
Semi-finishing--Roughing		TNGG 331R-H	1/64	0.009-0.015	0.047-0.15									●				TNGG 160404R-H	
		TNGG 331L-H	1/64	0.009-0.015	0.047-0.15									●				TNGG 160404L-H	
		TNGG 332R-H	1/32	0.009-0.015	0.047-0.15									●				TNGG 160408R-H	
		TNGG 332L-H	1/32	0.009-0.015	0.047-0.15									●				TNGG 160408L-H	

●: Stock available

Negative 35° (V)



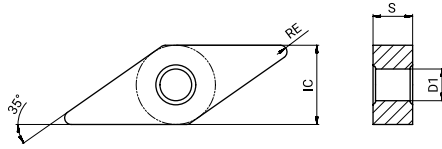
Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts	ANSI	RE (in)	Machining conditions		● Good condition    ◐ General condition    ◑ Bad condition														ISO	
			Recommended parameters		P				M				K		N		S			
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Finishing	 VNMG 331-PB1	1/64	0.002-0.006	0.01-0.083	●		●	●												VNMG 160404E-PB1
	 VNMG 332-PB1	1/32	0.004-0.012	0.02-0.083	●	●	●	●												VNMG 160408E-PB1
	 VNMG 331-SC1	1/64	0.004-0.010	0.008-0.031							●									VNMG 160404E-SC1
	 VNMG 332-SC1	1/32	0.006-0.012	0.008-0.031							●									VNMG 160408E-SC1
	 VNMG 331-MB2	1/64	0.002-0.006	0.01-0.083						●	●	●							●	VNMG 160404E-MB2
	 VNMG 332-MB2	1/32	0.004-0.012	0.02-0.083						●	●	●							●	VNMG 160408E-MB2
Light cutting	 VNMG 331-SL3	1/64	0.004-0.008	0.024-0.098							●							●	VNMG 160404E-SL3	
	 VNMG 332-SL3	1/32	0.005-0.010	0.031-0.098							●							●	VNMG 160408E-SL3	
Profiling	 VNMG 331-BS	1/64	0.003-0.008	0.008-0.079	●	●													VNMG 160404E-BS	
	 VNMG 332-BS	1/32	0.003-0.008	0.008-0.079	●	●													VNMG 160408E-BS	
Semi-finishing	 VNMG 331-PB3	1/64	0.002-0.007	0.012-0.122	●		●	●											VNMG 160404E-PB3	
	 VNMG 332-PB3	1/32	0.005-0.014	0.024-0.122	●	●	●	●											VNMG 160408E-PB3	
	 VNMG 333-PB3	3/64	0.007-0.021	0.035-0.122	●	●	●	●											VNMG 160412E-PB3	
	 VNMG 331-PC3	1/64	0.003-0.008	0.013-0.13	●		●	●											VNMG 160404E-PC3	
	 VNMG 332-PC3	1/32	0.006-0.016	0.027-0.13	●		●	●											VNMG 160408E-PC3	
	 VNMG 333-PC3	3/64	0.008-0.024	0.04-0.13	●		●	●											VNMG 160412E-PC3	

●: Stock available

ISO Turning Insert

Negative 35° (V)

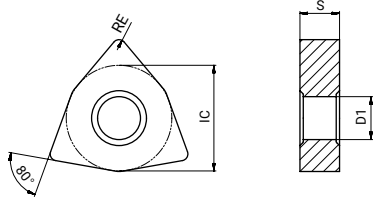


Dimension (in)			
Product code	IC	S	D1
VN_33_	3/8	3/16	0.150

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition												ISO		
			Recommended parameters		P				M			K		N		S			
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K		AW100K	AP100S
Medium	VNMG 331-PD3	1/64	0.003-0.009	0.016-0.13	●	●	●	●	●										VNMG 160404E-PD3
	VNMG 332-PD3	1/32	0.006-0.017	0.031-0.13	●	●	●	●	●										VNMG 160408E-PD3
	VNMG 333-PD3	3/64	0.009-0.026	0.047-0.13	●	●	●	●	●										VNMG 160412E-PD3
	VNMG 331-M3T	1/64	0.008-0.016	0.039-0.157	●														VNMG 160404-M3T
	VNMG 332-M3T	1/32	0.008-0.016	0.039-0.157	●														VNMG 160408-M3T
	VNMG 331-SC3	1/64	0.003-0.009	0.016-0.13						●	●	●						●	VNMG 160404E-SC3
	VNMG 332-SC3	1/32	0.006-0.017	0.031-0.13						●	●	●						●	VNMG 160408E-SC3
	VNMG 333-SC3	3/64	0.009-0.026	0.047-0.13						●	●	●						●	VNMG 160412E-SC3
	VNMG 331-MC3	1/64	0.003-0.009	0.013-0.13						●	●	●							VNMG 160404E-MC3
	VNMG 332-MC3	1/32	0.006-0.017	0.025-0.13						●	●	●							VNMG 160408E-MC3
	VNMG 331-PC4	1/64	0.003-0.009	0.016-0.13	●		●	●						●	●				VNMG 160404E-PC4
	VNMG 332-PC4	1/32	0.006-0.017	0.031-0.13	●	●	●	●						●	●				VNMG 160408E-PC4
VNMG 333-PC4	3/64	0.009-0.026	0.047-0.13	●	●	●	●						●	●				VNMG 160412E-PC4	
Roughing	VNMG 331-KC4	1/64	0.004-0.009	0.019-0.13										●	●			VNMG 160404E-KC4	
	VNMG 332-KC4	1/32	0.007-0.019	0.038-0.13										●	●			VNMG 160408E-KC4	
	VNMG 333-KC4	3/64	0.01-0.028	0.057-0.13										●	●			VNMG 160412E-KC4	
Finishing	VNGG 3(3)03FP-UF	0.004	0.001-0.004	0.020-0.079									●					VNGG 160401FP-UF	
	VNGG 3(3)05FP-UF	0.008	0.001-0.004	0.020-0.079									●					VNGG 160402FP-UF	
	VNGG 331FP-UF	1/64	0.001-0.004	0.020-0.079									●					VNGG 160404FP-UF	

● : Stock available

Negative 80° (W)

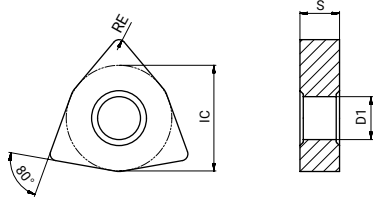


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition														ISO
			Recommended parameters		P				M				K		N		S		
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing	WNMG 431-F1T	1/64	0.002-0.006	0.02-0.098	●														WNMG 080404-F1T
	WNMG 432-F1T	1/32	0.002-0.006	0.02-0.098	●														WNMG 080408-F1T
	WNMG 431-PB1	1/64	0.002-0.006	0.01-0.087	●	●	●												WNMG 080404E-PB1
	WNMG 432-PB1	1/32	0.004-0.012	0.02-0.087	●	●	●	●											WNMG 080408E-PB1
	WNMG 433-PB1	3/64	0.006-0.018	0.031-0.087	●	●	●	●											WNMG 080412E-PB1
	WNMG 431-SC1	1/64	0.004-0.010	0.008-0.031															WNMG 080404E-SC1
	WNMG 432-SC1	1/32	0.006-0.012	0.008-0.031															WNMG 080408E-SC1
	WNMG 431-MB2	1/64	0.002-0.006	0.01-0.087							●							●	WNMG 080404E-MB2
	WNMG 432-MB2	1/32	0.004-0.012	0.02-0.087							●							●	WNMG 080408E-MB2
	Light cutting	WNMG 331-SL3	1/64	0.005-0.010	0.024-0.098														●
WNMG 332-SL3		1/32	0.006-0.010	0.031-0.098														●	WNMG 060408E-SL3
WNMG 431-SL3		1/64	0.005-0.010	0.024-0.118														●	WNMG 080404E-SL3
WNMG 432-SL3		1/32	0.006-0.010	0.031-0.118														●	WNMG 080408E-SL3
WNMG 433-SL3		3/64	0.007-0.012	0.039-0.118														●	WNMG 080412E-SL3
Semi-finishing	WNMG 431-PB3	1/64	0.002-0.007	0.012-0.091	●	●	●												WNMG 080404E-PB3
	WNMG 432-PB3	1/32	0.005-0.014	0.024-0.091	●	●	●	●											WNMG 080408E-PB3
	WNMG 433-PB3	3/64	0.007-0.021	0.035-0.091	●	●	●	●											WNMG 080412E-PB3
	WNMG 431-PC3	1/64	0.003-0.008	0.013-0.102	●	●	●												WNMG 080404E-PC3
	WNMG 432-PC3	1/32	0.006-0.016	0.027-0.102	●	●	●												WNMG 080408E-PC3
	WNMG 433-PC3	3/64	0.008-0.024	0.04-0.102	●	●	●												WNMG 080412E-PC3

●: Stock available

Negative 80° (W)

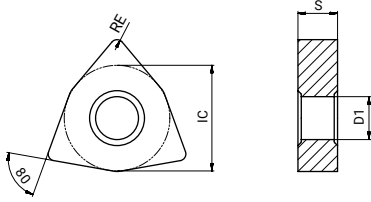


Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition														ISO
					● ● ● ◐ ◑ ● ◐ ◑ ◐ ◑ ● ● ◑ ◐ ● ●														
			Recommended parameters		P				M			K		N		S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S				
Medium	WNMG 431R-PL5	1/64	0.008-0.020	0.016-0.157				●										WNMG 080404R-PL5	
	WNMG 431L-PL5	1/64	0.008-0.020	0.016-0.157				●										WNMG 080404L-PL5	
	WNMG 432R-PL5	1/32	0.008-0.020	0.016-0.197				●		●								WNMG 080408R-PL5	
	WNMG 432L-PL5	1/32	0.008-0.020	0.016-0.197				●		●								WNMG 080408L-PL5	
	WNMG 332-PD3	1/32	0.006-0.017	0.031-0.083		●	●	●										WNMG 060408E-PD3	
	WNMG 431-PD3	1/64	0.003-0.009	0.016-0.114	●	●	●	●	●									WNMG 080404E-PD3	
	WNMG 432-PD3	1/32	0.006-0.017	0.031-0.114	●	●	●	●	●									WNMG 080408E-PD3	
	WNMG 433-PD3	3/64	0.009-0.026	0.047-0.114	●	●	●	●	●									WNMG 080412E-PD3	
	WNMG 431-SC3	1/64	0.003-0.009	0.016-0.114						●	●	●					●	WNMG 080404E-SC3	
	WNMG 432-SC3	1/32	0.006-0.017	0.031-0.114						●	●	●					●	WNMG 080408E-SC3	
	WNMG 433-SC3	3/64	0.009-0.026	0.047-0.114						●	●	●					●	WNMG 080412E-SC3	
	WNMG 431-M3T	1/64	0.008-0.016	0.039-0.157	●													WNMG 080404-M3T	
	WNMG 432-M3T	1/32	0.008-0.016	0.039-0.157	●													WNMG 080408-M3T	
	WNMG 332-MC3	1/32	0.006-0.017	0.025-0.083						●	●	●						WNMG 060408E-MC3	
	WNMG 333-MC3	3/64	0.009-0.026	0.038-0.083						●	●	●						WNMG 060412E-MC3	
	WNMG 431-MC3	1/64	0.003-0.009	0.013-0.114						●	●	●						WNMG 080404E-MC3	
	WNMG 432-MC3	1/32	0.006-0.017	0.025-0.114						●	●	●					●	WNMG 080408E-MC3	
	WNMG 433-MC3	3/64	0.009-0.026	0.038-0.114						●	●	●						WNMG 080412E-MC3	
	WNMG 431-PC4	1/64	0.003-0.009	0.016-0.114	●		●	●						●	●			WNMG 080404E-PC4	
	WNMG 432-PC4	1/32	0.006-0.017	0.031-0.114	●	●	●	●						●	●			WNMG 080408E-PC4	
WNMG 433-PC4	3/64	0.009-0.026	0.047-0.114	●	●	●	●						●	●			WNMG 080412E-PC4		

●: Stock available

Negative 80° (W)



Dimension (in)			
Product code	IC	S	D1
WN_33_	3/8	3/16	0.150
WN_43_	1/2	3/16	0.203

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition											ISO			
			Recommended parameters		P			M			K		N	S					
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K		AC202K	AW100K	AP100S
Roughing		WNMG 332-MC4	1/32	0.008-0.024	0.047-0.13														WNMG 060408E-MC4
		WNMG 333-MC4	3/64	0.012-0.035	0.071-0.13						●	●	●						WNMG 060412E-MC4
		WNMG 432-MC4	1/32	0.008-0.024	0.047-0.169						●	●	●					●	WNMG 080408E-MC4
		WNMG 433-MC4	3/64	0.012-0.035	0.071-0.169						●	●	●					●	WNMG 080412E-MC4
		WNMG 331-KC4	1/64	0.004-0.009	0.019-0.102											●	●		WNMG 060404E-KC4
		WNMG 332-KC4	1/32	0.007-0.019	0.038-0.102											●	●		WNMG 060408E-KC4
		WNMG 431-KC4	1/64	0.004-0.009	0.019-0.138											●	●		WNMG 080404E-KC4
		WNMG 432-KC4	1/32	0.007-0.019	0.038-0.138										●	●	●		WNMG 080408E-KC4
		WNMG 433-KC4	3/64	0.01-0.028	0.057-0.138										●	●	●		WNMG 080412E-KC4
		WNMG 434-KC4	1/16	0.014-0.038	0.076-0.138										●	●			WNMG 080416E-KC4
		WNMG 432-PD5	1/32	0.008-0.024	0.047-0.169	●	●	●	●										WNMG 080408E-PD5
		WNMG 433-PD5	3/64	0.012-0.035	0.071-0.169	●	●	●	●										WNMG 080412E-PD5
		WNMA 431-KD5	1/64	0.004-0.012	0.024-0.169											●	●		WNMA 080404E-KD5
		WNMA 432-KD5	1/32	0.008-0.024	0.047-0.169											●	●	●	WNMA 080408E-KD5
		WNMA 433-KD5	3/64	0.012-0.035	0.071-0.169											●	●	●	WNMA 080412E-KD5
		WNMA 434-KD5	1/16	0.016-0.047	0.094-0.169											●	●		WNMA 080416E-KD5

●: Stock available

ISO Turning Insert



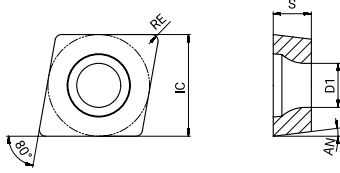








**Positive 80° (C)**



Product code	Dimension (in)			Clearance Angle(°)
	IC	S	D1	AN
CC_1.2(1)_	0.138	0.055	0.079	7°
CC_2(1.5)_	1/4	3/32	0.110	7°
CC_3(2.5)_	3/8	5/32	0.173	7°
CC_43_	1/2	3/16	0.217	7°

Inserts Left-hand shown where it's applicable	ANSI	RE (in)	Machining conditions														ISO
			● Good condition ◐ General condition ◑ Bad condition ● ● ● ◐ ◑ ● ◐ ◐ ◐ ● ● ◑ ◐ ●														
			Recommended parameters		P				M				K		N		
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Semi-Finishing	CCMT 3(2.5)1-M2T	1/64	0.004-0.010	0.028-0.138	●												CPMT 09T304-M2T
	CCMT 3(2.5)2-M2T	1/32	0.004-0.010	0.028-0.138	●												CPMT 09T308-M2T
	CCMT 2(1.5)1-KC2	1/64	0.002-0.007	0.016-0.083	●	●	●	●	●	●	●		●	●		●	CCMT 060204E-KC2
	CCMT 2(1.5)2-KC2	1/32	0.005-0.014	0.031-0.083	●	●	●	●	●	●	●		●	●			CCMT 060208E-KC2
	CCMT 3(2.5)1-KC2	1/64	0.002-0.007	0.016-0.126	●	●	●	●	●	●	●		●	●			CCMT 09T304E-KC2
	CCMT 3(2.5)2-KC2	1/32	0.005-0.014	0.031-0.126	●	●	●	●	●	●	●		●	●			CCMT 09T308E-KC2
	CCMT 431-KC2	1/64	0.002-0.007	0.016-0.169	●	●	●	●	●	●	●		●	●			CCMT 120404E-KC2
CCMT 432-KC2	1/32	0.005-0.014	0.031-0.169	●	●	●	●	●	●	●		●	●			CCMT 120408E-KC2	
CCMT 433-KC2	3/64	0.007-0.021	0.047-0.169	●	●	●	●	●	●	●		●	●			CCMT 120412E-KC2	
Roughing	CCMW 2(1.5)1-KD5	1/64	0.004-0.009	0.016-0.126									●	●		CCMW 060204E-KD5	
	CCMW 3(2.5)1-KD5	1/64	0.004-0.009	0.016-0.189									●	●		CCMW 09T304E-KD5	
	CCMW 3(2.5)2-KD5	1/32	0.008-0.017	0.031-0.189									●	●		CCMW 09T308E-KD5	
	CCMW 431-KD5	1/64	0.004-0.009	0.016-0.252									●	●		CCMW 120404E-KD5	
	CCMW 432-KD5	1/32	0.008-0.017	0.031-0.252									●	●		CCMW 120408E-KD5	
	CCMW 433-KD5	3/64	0.012-0.026	0.047-0.252									●	●		CCMW 120412E-KD5	
Finishing	CCET 1.2(1)01FR-F	<0.03	0.0004-0.002	0.004-0.012							●					CCET 0301003FR-F	
	CCET 1.2(1)01FL-F	<0.001	0.0004-0.002	0.004-0.012							●					CCET 0301003FL-F	
	CCET 1.2(1)013FR-F	<0.002	0.0004-0.002	0.004-0.012							●					CCET 0301005FR-F	
	CCET 1.2(1)013FL-F	<0.002	0.0004-0.002	0.004-0.012							●					CCET 0301005FL-F	
	CCET 1.2(1)03FR-F	<0.004	0.0004-0.002	0.004-0.012							●					CCET 030101FR-F	
	CCET 1.2(1)03FL-F	<0.004	0.0004-0.002	0.004-0.012							●					CCET 030101FL-F	
	CCET 1.2(1)05FR-F	<0.008	0.0004-0.002	0.004-0.012							●					CCET 030102FR-F	
	CCET 1.2(1)05FL-F	<0.008	0.0004-0.002	0.004-0.012							●					CCET 030102FL-F	
	CCET 1.2(1)1FR-F	<1/64	0.0004-0.002	0.004-0.012							●					CCET 030104FR-F	
	CCET 1.2(1)1FL-F	<1/64	0.0004-0.002	0.004-0.012							●					CCET 030104FL-F	

● : Stock available



















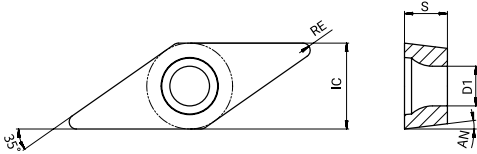








**Positive 35° (V)**



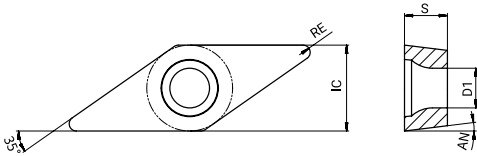
Product code	Dimension (in)			Clearance Angle(°)
	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VC_22_	1/4	1/8	0.110	7°
VC_33_	3/8	3/16	0.173	7°
VC_4(3.5)_	1/2	0.219	0.217	7°
VP_22_	1/4	1/8	0.110	11°
VP_4(3.5)_	1/2	0.219	0.217	11°

Inserts	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition														ISO	
			Recommended parameters		P				M				K		N		S			
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S		
Finishing		VCGT 2(2)013FP-UF	<0.002	0.001-0.006	0.004-0.055															VCGT 1103005FP-UF
		VCGT 2(2)03FP-UF	0.004	0.001-0.006	0.004-0.055															VCGT 110301FP-UF
		VCGT 2(2)05FP-UF	0.008	0.001-0.006	0.008-0.055															VCGT 110302FP-UF
		VCGT 221FP-UF	1/64	0.001-0.008	0.008-0.055															VCGT 110304FP-UF
		VCGT 2(2)013F-UF	<0.002	0.001-0.006	0.004-0.055															VCGT 1103005E-UF
		VCGT 2(2)03F-UF	0.004	0.001-0.006	0.004-0.055															VCGT 110301F-UF
		VCGT 2(2)05F-UF	0.008	0.001-0.006	0.008-0.055															VCGT 110302F-UF
		VCGT 221F-UF	1/64	0.001-0.008	0.008-0.055															VCGT 110304F-UF
		VCGT 2(2)03E-UF	0.004	0.001-0.006	0.004-0.055														●	VCGT 110301E-UF
		VCGT 2(2)05E-UF	0.008	0.001-0.006	0.008-0.055														●	VCGT 110302E-UF
		VCGT 221E-UF	1/64	0.001-0.008	0.008-0.055														●	VCGT 110304E-UF
		VPGT 2(2)03FP-UF	0.004	0.001-0.006	0.004-0.055															VPGT 110301FP-UF
VPGT 2(2)05FP-UF		0.008	0.001-0.006	0.008-0.055															VPGT 110302FP-UF	
VPGT 2(2)03F-UF		0.004	0.001-0.006	0.004-0.055															VPGT 110301F-UF	
VPGT 2(2)05F-UF		0.008	0.001-0.006	0.008-0.055															VPGT 110302F-UF	
Semi-Finishing		VCGT 2(2)05F-NC2	0.008	0.001-0.004	0.006-0.11													●	VCGT 110302F-NC2	
		VCGT 221F-NC2	1/64	0.002-0.008	0.013-0.11														VCGT 110304F-NC2	
		VCGT 331F-NC2	1/64	0.002-0.008	0.013-0.165														●	VCGT 160404F-NC2
		VCGT 332F-NC2	1/32	0.004-0.016	0.025-0.165														●	VCGT 160408F-NC2
		VCGT 333F-NC2	3/64	0.006-0.024	0.038-0.165														●	VCGT 160412F-NC2
		-	3.0	0.014-0.059	0.094-0.217														●	VCGT 220530F-NC2
		VPGT 4(3.5)5-NC2	5/64	0.009-0.039	0.063-0.217														●	VPGT 220520E-NC2
		VPGT 4(3.5)5F-NC2	5/64	0.009-0.039	0.063-0.217														●	VPGT 220520F-NC2
Profiling machining		VBMT 2(2)05-BS	0.008	0.002-0.006	0.012-0.051	●	●												VBMT 110302E-BS	
		VBMT 221-BS	1/64	0.002-0.006	0.012-0.051	●	●												VBMT 110304E-BS	
		VBMT 222-BS	1/32	0.002-0.008	0.012-0.051	●	●												VBMT 110308E-BS	
		VBMT 331-BS	1/64	0.002-0.006	0.012-0.059	●	●													VBMT 160404E-BS
		VBMT 332-BS	1/32	0.002-0.006	0.012-0.059	●	●													VBMT 160408E-BS
		VBMT 333-BS	3/64	0.002-0.009	0.012-0.059	●	●													VBMT 160412E-BS

● : Stock available



Positive 35° (V)

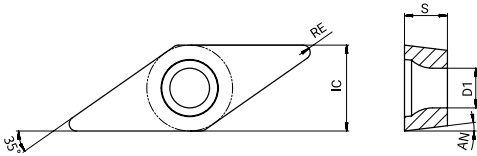


Product code	Dimension (in)			Clearance Angle(°)
	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VB_33_	3/8	3/16	0.173	5°
VC_22_	1/4	1/8	0.110	7°
VC_33_	3/8	3/16	0.173	7°

Inserts Left-hand shown where it's applicable	ANSI	RE (in)	Machining conditions												ISO	
			● Good condition ◐ General condition ◑ Bad condition ● ● ● ◐ ◑ ● ◐ ◑ ● ● ● ◐ ◑ ● ● ●													
			Recommended parameters		P			M			K		N S			
f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Finishing	VBMT 221-PB1	1/64	0.002-0.006	0.012-0.055	●	●	●	●	●	●	●	●	●	●	●	VBMT 110304E-PB1
	VBMT 222-PB1	1/32	0.004-0.011	0.024-0.055	●	●	●	●	●	●	●	●	●	●	●	VBMT 110308E-PB1
	VBMT 3(3)05-PB1	0.008	0.001-0.003	0.006-0.083	●	●	●	●	●	●	●	●	●	●	●	VBMT 160402E-PB1
	VBMT 331-PB1	1/64	0.002-0.006	0.012-0.083	●	●	●	●	●	●	●	●	●	●	●	VBMT 160404E-PB1
	VBMT 332-PB1	1/32	0.004-0.011	0.024-0.083	●	●	●	●	●	●	●	●	●	●	●	VBMT 160408E-PB1
	VCMT 331-PB1	1/64	0.002-0.006	0.012-0.083	●	●	●	●	●	●	●	●	●	●	●	VCMT 160404E-PB1
	VCMT 332-PB1	1/32	0.004-0.011	0.024-0.083	●	●	●	●	●	●	●	●	●	●	●	VCMT 160408E-PB1
Semi-Finishing	VBMT 221-PC2	1/64	0.002-0.006	0.014-0.083	●	●	●	●	●	●	●	●	●	●	●	VBMT 110304E-PC2
	VBMT 222-PC2	1/32	0.004-0.013	0.028-0.083	●	●	●	●	●	●	●	●	●	●	●	VBMT 110308E-PC2
	VBMT 331-PC2	1/64	0.002-0.006	0.014-0.122	●	●	●	●	●	●	●	●	●	●	●	VBMT 160404E-PC2
	VBMT 332-PC2	1/32	0.004-0.013	0.028-0.122	●	●	●	●	●	●	●	●	●	●	●	VBMT 160408E-PC2
	VBMT 333-PC2	3/64	0.006-0.019	0.041-0.122	●	●	●	●	●	●	●	●	●	●	●	VBMT 160412E-PC2
	VCMT 221-PC2	1/64	0.002-0.006	0.014-0.083	●	●	●	●	●	●	●	●	●	●	●	VCMT 110304E-PC2
	VCMT 222-PC2	1/32	0.004-0.013	0.028-0.083	●	●	●	●	●	●	●	●	●	●	●	VCMT 110308E-PC2
	VCMT 331-PC2	1/64	0.002-0.006	0.014-0.122	●	●	●	●	●	●	●	●	●	●	●	VCMT 160404E-PC2
	VCMT 332-PC2	1/32	0.004-0.013	0.028-0.122	●	●	●	●	●	●	●	●	●	●	●	VCMT 160408E-PC2
Medium	VBMT 331-KC2	1/64	0.002-0.007	0.016-0.13	●	●	●	●	●	●	●	●	●	●	●	VBMT 160404E-KC2
	VBMT 332-KC2	1/32	0.005-0.014	0.031-0.13	●	●	●	●	●	●	●	●	●	●	●	VBMT 160408E-KC2
	VBMT 333-KC2	3/64	0.007-0.021	0.047-0.13	●	●	●	●	●	●	●	●	●	●	●	VBMT 160412E-KC2
Finishing	VBET 2(2)01FR-F	<0.001	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 1103003FR-F
	VBET 2(2)01FL-F	<0.001	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 1103003FL-F
	VBET 2(2)013FR-F	<0.002	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 1103005FR-F
	VBET 2(2)013FL-F	<0.002	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 1103005FL-F
	VBET 2(2)03FR-F	<0.004	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 110301FR-F
	VBET 2(2)03FL-F	<0.004	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 110301FL-F
	VBET 2(2)05FR-F	<0.008	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 110302FR-F
	VBET 2(2)05FL-F	<0.008	0.0004-0.007	0.004-0.012	●	●	●	●	●	●	●	●	●	●	●	VBET 110302FL-F

●: Stock available

Positive 35° (V)



Product code	Dimension (in)			Clearance Angle(°)
	IC	S	D1	AN
VB_22_	1/4	1/8	0.110	5°
VC_22_	1/4	1/8	0.110	7°
VP_1.5(1.5)_	0.187	0.094	0.091	11°

Inserts Left-hand shown where it's applicable	ANSI	RE (in)	Machining conditions		● Good condition ◐ General condition ◑ Bad condition														ISO
			Recommended parameters		P				M				K		N		S		
			f (in/rev)	ap (in)	AT202	AC052P	AC150P	AC250P	AC350P	AC100M	AC200M	AP200U	AP301M	AC100K	AC102K	AC202K	AW100K	AP100S	
Low feed	VBET 2(2)013FR-M	<0.002	0.0004-0.002	0.008-0.079														●	VBET 1103005FR-M
	VBET 2(2)013FL-M	<0.002	0.0004-0.002	0.008-0.079														●	VBET 1103005FL-M
	VBET 2(2)03FR-M	<0.004	0.0004-0.002	0.008-0.079														●	VBET 110301FR-M
	VBET 2(2)03FL-M	<0.004	0.0004-0.002	0.008-0.079														●	VBET 110301FL-M
	VBET 2(2)05FR-M	<0.008	0.0004-0.002	0.008-0.079														●	VBET 110302FR-M
	VBET 2(2)05FL-M	<0.008	0.0004-0.002	0.008-0.079														●	VBET 110302FL-M
	VBET 221FR-M	<1/64	0.0004-0.002	0.008-0.079														●	VBET 110304FR-M
	VBET 221FL-M	<1/64	0.0004-0.002	0.008-0.079														●	VBET 110304FL-M
Finishing	VCET 2(2)013FR-F	<0.002	0.0004-0.007	0.004-0.012														●	VCET 1103005FR-F
	VCET 2(2)013FL-F	<0.002	0.0004-0.007	0.004-0.012														●	VCET 1103005FL-F
	VCET 2(2)03FR-F	<0.004	0.0004-0.007	0.004-0.012														●	VCET 110301FR-F
	VCET 2(2)03FL-F	<0.004	0.0004-0.007	0.004-0.012														●	VCET 110301FL-F
	VCET 2(2)05FR-F	<0.008	0.0004-0.007	0.004-0.012														●	VCET 110302FR-F
	VCET 2(2)05FL-F	<0.008	0.0004-0.007	0.004-0.012														●	VCET 110302FL-F
	VCET 221FR-F	<1/64	0.0004-0.007	0.004-0.012														●	VCET 110304FR-F
	VCET 221FL-F	<1/64	0.0004-0.007	0.004-0.012														●	VCET 110304FL-F
	VPET 1.5(1.5)03FR-F	<0.004	0.001-0.006	0.002-0.008														●	VPET 080201FR-F
	VPET 1.5(1.5)03FL-F	<0.004	0.001-0.006	0.002-0.008														●	VPET 080201FL-F
	VPET 1.5(1.5)05FR-F	<0.008	0.001-0.006	0.002-0.008														●	VPET 080202FR-F
	VPET 1.5(1.5)05FL-F	<0.008	0.001-0.006	0.002-0.008														●	VPET 080202FL-F

●: Stock available



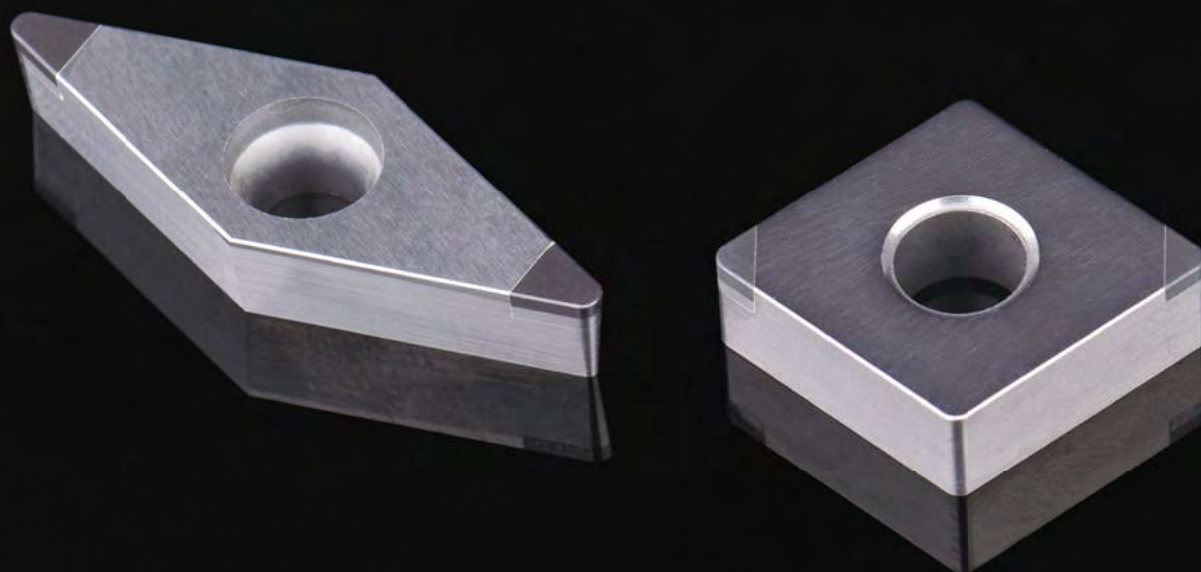




# ACHTTECK

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THE EXPERTS OF DIFFICULT MACHINING




PCD/PCBN Inserts

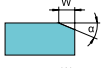
**PCBN Insert Denomination System**

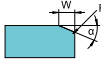
<b>CNGA 432</b>	-	<b>S</b>	<b>010</b>	<b>20</b>	-	<b>SL</b>	-	<b>1</b>	-	<b>CB</b>	<b>PB30</b>
1		2	3	4		5		6		7	8


1-Standard ISO Denomination System

2-Cutting Edge Shape

E--Honed 

T-Land without honing 

S--Land with honed 

F---Sharp 


3-T-land Width (in)


005	---0.002
010	---0.004
015	---0.006
020	---0.008


4-T-land Angle


10	---10°
15	---15°
20	---20°
25	---25°

5-CBN Insert Structure

FT-- Full face CBN 

SD-- Solid CBN 

SL-- Small size tipped CBN 

NL-- Standard-tipped CBN (Regrindable) 

6-Number of Cutting Edge

1	---One cutting edge
2	---Two cutting edges
3	---Three cutting edges

7-Cutting Edge Preparation

CB	---With chip breaker
WG	---With wiper edge
"-"	---Without chip breaker

8-Grade

PB30	--- Low content CBN
PB60	---Medium content CBN
PB90	---High content CBN

**PCBN Insert Grade Introduction**

Grade	Feature	Application
PB30	Well balanced wear resistance and shock-resistance	Good versatility. Suitable for continuous and light interrupted cutting of hardened steel
PB60	Excellent toughness	Mainly applied in medium interrupted cutting of hardened steel, interrupted and continuous cutting of powder metal and cast iron cutting.
PB90	Good wear resistance, toughness, and shock-resistance	K-mainly applied in cast iron cutting H-heavy interrupted cutting of hardened steel and powder metal machining

**PCBN Recommended Cutting Parameters**

Grade	Material	Hardness	Cutting speed Vc(ft/min)	Feed fn(in/rev)	Cutting depth ap(in)	Recommended application
PB30	Hardened steel	HRC58-62	490-820	0.001-0.008	0.002-0.012	Continuous
PB60	Hardened steel	HRC55-60	160-490	0.001-0.008	0.002-0.02	Interrupted
	Cast iron	HB180-220	490-1470	0.001-0.012	0.012-0.02	Continuous / Interrupted
	Powder metal	-	650-1640	0.001-0.012	0.004-0.012	Continuous / Interrupted
PB90	Hardened steel	HRC55-60	100-390	0.001-0.008	0.002-0.02	Heavy interrupted
	Cast iron	HB180-220	490-1470	0.001-0.012	0.012-0.02	Continuous / Interrupted
	Powder metal	-	980-2620	0.001-0.012	0.004-0.012	Continuous / Interrupted

**Grade Application Guide**

PCBN grade applications						
Material Group	Materials	ISO	Uncoated			ISO
			PB30	PB60	PB90	
<b>P</b>	unalloy steels / Alloyed steels	P01				P01
		P10				P10
		P20				P20
		P30				P30
		P40				P40
		P50				P50
<b>M</b>	Stainless steels	M01				M01
		M10				M10
		M20				M20
		M30				M30
		M40				M40
<b>K</b>	Cast iron	K01			<b>PB90</b>	K01
		K10				K10
		K20				K20
		K30				K30
		K40				K40
		K50				K50
<b>N</b>	Aluminum/ Aluminum alloys	N01				N01
		N10				N10
		N20				N20
		N30				N30
<b>S</b>	Heat resistant alloys	S01				S01
		S10				S10
		S20				S20
		S30				S30
		S40				S40
<b>H</b>	Hardened steels/ Chilled cast iron	H01	<b>PB30</b>			H01
		H10			<b>PB60</b>	H10
		H20				H20
		H30				H30

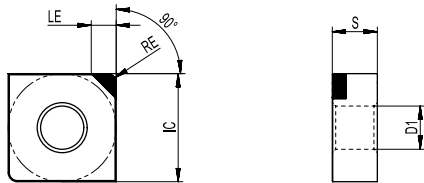
PCBN Inserts







Negative 90° (S)

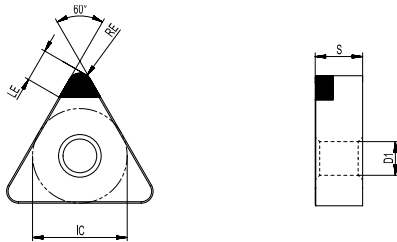


Dimension (in)				
Product code	IC	S	LE	D1
SN_43_	1/2	3/16	0.087	0.203

PCBN Inserts	ANSI	RE (in)	Machining conditions		● Good condition    ⬤ General condition ✖ Bad condition			ISO
			Recommended parameters		H		K	
			f (in/rev)	ap (in)	PB30	PB60	PB90	
	<b>SNGA 432-S0420-SL-4</b>	1/32	0.001-0.012	0.002-0.02	●	●	●	<b>SNGA 120408-S01020-SL-4</b>
	<b>SNGA 433-S0420-SL-4</b>	3/64	0.001-0.012	0.002-0.02	●	●	●	<b>SNGA 120412-S01020-SL-4</b>

Marked: ● stock available

Negative 60° (T)

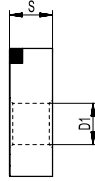
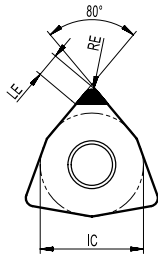


Dimension (in)				
Product code	IC	S	LE	D1
TN_33_	3/8	3/16	0.087	0.15

PCBN Inserts	ANSI	RE (in)	Machining conditions		● Good condition    ⬤ General condition ✖ Bad condition			ISO
			Recommended parameters		H		K	
			f (in/rev)	ap (in)	PB30	PB60	PB90	
	<b>TNGA 331-S0420-SL-3</b>	1/64	0.001-0.012	0.002-0.02	●	●	●	<b>TNGA 160404-S01020-SL-3</b>
	<b>TNGA 332-S0420-SL-3</b>	1/32	0.001-0.012	0.002-0.02	●	●	●	<b>TNGA 160408-S01020-SL-3</b>
	<b>TNGA 333-S0420-SL-3</b>	3/64	0.001-0.012	0.002-0.02	●	●	●	<b>TNGA 160412-S01020-SL-3</b>

Marked: ● stock available

**Negative 80° (W)**

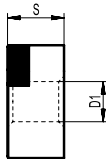
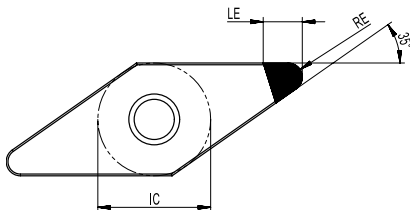


Dimension (in)				
Product code	IC	S	LE	D1
WN_43_	1/2	3/16	0.087	0.203

PCBN Inserts	ANSI	RE (in)	Machining conditions			Good condition ● General condition ⊕ Bad condition ⊖			ISO
			Recommended parameters		H		K		
			f (in/rev)	ap (in)	PB30	PB60	PB90		
	<b>WNGA 431-S0420-SL-3</b>	1/64	0.001-0.012	0.002-0.02	●	●	●	<b>WNGA 080404-S01020-SL-3</b>	
	<b>WNGA 432-S0420-SL-3</b>	1/32	0.001-0.012	0.002-0.02	●	●	●	<b>WNGA 080408-S01020-SL-3</b>	
	<b>WNGA 433-S0420-SL-3</b>	3/64	0.001-0.012	0.002-0.02	●	●	●	<b>WNGA 080412-S01020-SL-3</b>	

Marked: ● stock available

**Negative 35° (V)**



Dimension (in)				
Product code	IC	S	LE	D1
VN_33_	3/8	3/16	0.087	0.150

PCBN Inserts	ANSI	RE (in)	Machining conditions			Good condition ● General condition ⊕ Bad condition ⊖			ISO
			Recommended parameters		H		K		
			f (in/rev)	ap (in)	PB30	PB60	PB90		
	<b>VNGA 331-S0420-SL-2</b>	1/64	0.001-0.012	0.002-0.02	●	●	●	<b>VNGA 160404-S01020-SL-2</b>	
	<b>VNGA 332-S0420-SL-2</b>	1/32	0.001-0.012	0.002-0.02	●	●	●	<b>VNGA 160408-S01020-SL-2</b>	
	<b>VNGA 333-S0420-SL-2</b>	3/64	0.001-0.012	0.002-0.02	●	●	●	<b>VNGA 160412-S01020-SL-2</b>	

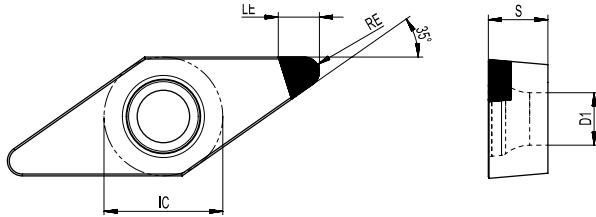
Marked: ● stock available







**Positive 35° (V)**



Dimension (in)				
Product code	IC	S	LE	D1
VB_22_	1/4	1/8	0.087	0.110
VC_22_	1/4	1/8	0.087	0.110
VB_33_	3/8	3/16	0.087	0.173
VC_33_	3/8	3/16	0.087	0.173

PCBN Inserts	ANSI	RE (in)	Machining conditions		● Good condition   ● General condition ✖ Bad condition			ISO
			Recommended parameters		H		K	
			f (in/rev)	ap (in)	PB30	PB60	PB90	
	VBGW 2(2)05-S0420-SL-2	0.008	0.001-0.012	0.002-0.02	●	●	●	VBGW 110302-S01020-SL-2
	VBGW 2(2)1-S0420-SL-2	1/64	0.001-0.012	0.002-0.02	●	●	●	VBGW 110304-S01020-SL-2
	VBGW 2(2)2-S0420-SL-2	1/32	0.001-0.012	0.002-0.02	●	●	●	VBGW 110308-S01020-SL-2
	VBGW 3(3)05-S0420-SL-2	0.008	0.001-0.012	0.002-0.02	●	●	●	VBGW 160402-S01020-SL-2
	VBGW 331-S0420-SL-2	1/64	0.001-0.012	0.002-0.02	●	●	●	VBGW 160404-S01020-SL-2
	VBGW 332-S0420-SL-2	1/32	0.001-0.012	0.002-0.02	●	●	●	VBGW 160408-S01020-SL-2
	VCGW 2(2)05-S0420-SL-2	0.008	0.001-0.012	0.002-0.02	●	●	●	VCGW 110302-S01020-SL-2
	VCGW 2(2)1-S0420-SL-2	1/64	0.001-0.012	0.002-0.02	●	●	●	VCGW 110304-S01020-SL-2
	VCGW 2(2)2-S0420-SL-2	1/32	0.001-0.012	0.002-0.02	●	●	●	VCGW 110308-S01020-SL-2
	VCGW 3(3)05-S0420-SL-2	0.008	0.001-0.012	0.002-0.02	●	●	●	VCGW 160402-S01020-SL-2
	VCGW 331-S0420-SL-2	1/64	0.001-0.012	0.002-0.02	●	●	●	VCGW 160404-S01020-SL-2
	VCGW 332-S0420-SL-2	1/32	0.001-0.012	0.002-0.02	●	●	●	VCGW 160408-S01020-SL-2



PCBN Inserts

Marked: ● stock available



**PCD Insert Denomination System**

<b>CCGW 09T304</b>	<b>-</b>	<b>1</b>	<b>-</b>	<b>NL</b>	<b>-</b>	<b>05</b>	<b>-</b>	<b>CB</b>	<b>PD20</b>
1		2		3		4		5	6

<p><b>1-Standard ISO Denomination system</b></p>	<p><b>2-Number of Cutting Edge</b></p> <p>1--One cutting edge</p>	<p><b>3-PCD Insert Structure</b></p> <p>NL--Standard structure with tipped PCD </p> <p>LL-- Full edge tipped PCD </p>	<p><b>4-Rake Angle</b></p> <p>00--0° 05--5°</p>
<p><b>5-Cutting Edge Preparation</b></p> <p>CB-- With chip breaker WG--With wiper edge "-- Without chip breaker</p>	<p><b>6-Grade</b></p> <p>PD01---Fine grain PCD PD10---Medium grain PCD PD20---Coarse grain PCD</p>		

**PCD Insert Grade Introduction**

Grade	Feature	Application
PD20	Universal grade, balanced wear resistance and toughness	1st choice for general machining of aluminum alloys

**PCD Recommended Cutting Parameter**

Grade	Material	Cutting speed Vc(ft/min)	Feed f(in/r)	Cutting depth ap(in)	Recommended application
PD20	Low-Si Aluminium Alloy (Si < 12%)	984-13123	0.001-0.008	0.002-0.020	Continuous/interrupted

**Grade Application Guide**

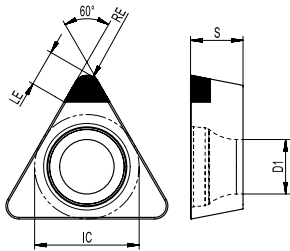
PCD insert applications				
Material Group	Materials	ISO	Uncoated	ISO
			PD20	
<b>P</b>	unalloy steels / Alloyed steels	P01		P01
		P10		P10
		P20		P20
		P30		P30
		P40		P40
		P50		P50
<b>M</b>	Stainless steels	M01		M01
		M10		M10
		M20		M20
		M30		M30
		M40		M40
<b>K</b>	Cast iron	K01		K01
		K10		K10
		K20		K20
		K30		K30
		K40		K40
		K50		K50
<b>N</b>	Aluminum/ Aluminum alloys	N01	PD20	N01
		N10		N10
		N20		N20
		N30		N30
<b>S</b>	Heat resistant alloys	S01		S01
		S10		S10
		S20		S20
		S30		S30
		S40		S40
<b>H</b>	Hardened steels/ Chilled cast iron	H01		H01
		H10		H10
		H20		H20
		H30		H30

PCD Inserts





**Positive 60° (T)**



Dimension (in)				
Product code	IC	S	LE	D1
TC_22_	1/4	1/8	0.118	0.110
TC_3(2.5)_	3/8	5/32	0.118	0.173
TP_1.5(1.5)_	3/16	3/32	0.118	0.094
TP_33_	3/8	3/16	0.118	0.173

PCD Inserts	ANSI	RE (in)	Rake angle (°)	Machining conditions		● Good condition	ISO
				Recommended parameters		●	
				f (in/rev)	ap (in)	N	
						PD20	
	TCGW 2(2)05-1-NL-00	0.008	0°	0.001-0.008	0.002-0.020	●	TCGW 110302-1-NL-00
	TCGW 221-1-NL-00	1/64	0°	0.001-0.008	0.002-0.020	●	TCGW 110304-1-NL-00
	TCGW 222-1-NL-00	1/32	0°	0.001-0.008	0.002-0.020	●	TCGW 110308-1-NL-00
	TCGW 2(2)05-1-NL-05	0.008	5°	0.001-0.008	0.002-0.020	●	TCGW 110302-1-NL-05
	TCGW 221-1-NL-05	1/64	5°	0.001-0.008	0.002-0.020	●	TCGW 110304-1-NL-05
	TCGW 222-1-NL-05	1/32	5°	0.001-0.008	0.002-0.020	●	TCGW 110308-1-NL-05
	TCGW 3(2.5)05-1-NL-05	0.008	5°	0.001-0.008	0.002-0.020	●	TCGW 16T302-1-NL-05
	TCGW 3(2.5)1-1-NL-05	1/64	5°	0.001-0.008	0.002-0.020	●	TCGW 16T304-1-NL-05
	TCGW 3(2.5)2-1-NL-05	1/32	5°	0.001-0.008	0.002-0.020	●	TCGW 16T308-1-NL-05
	TPGW 1.5(1.5)05-1-NL-00	0.008	0°	0.001-0.008	0.002-0.020	●	TPGW 080202-1-NL-00
	TPGW 1.5(1.5)1-1-NL-00	1/64	0°	0.001-0.008	0.002-0.020	●	TPGW 080204-1-NL-00
	TPGW 1.5(1.5)05-1-NL-05	0.008	5°	0.001-0.008	0.002-0.020	●	TPGW 080202-1-NL-05
	TPGW 1.5(1.5)1-1-NL-05	1/64	5°	0.001-0.008	0.002-0.020	●	TPGW 080204-1-NL-05
	TPGW 3(3)051-NL-05	0.008	5°	0.001-0.008	0.002-0.020	●	TPGW 160402-1-NL-05
	TPGW 331-1-NL-05	1/64	5°	0.001-0.008	0.002-0.020	●	TPGW 160404-1-NL-05
	TPGW 332-1-NL-05	1/32	5°	0.001-0.008	0.002-0.020	●	TPGW 160408-1-NL-05

Marked: ● stock available





# ACHTTECK

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THE EXPERTS OF DIFFICULT MACHINING



Small Tools



**Turning Shank Denomination System**

<b>S</b> 1	<b>C</b> 2	<b>L</b> 3	<b>C</b> 4	<b>R</b> 5
---------------	---------------	---------------	---------------	---------------

1-Clamping Type				
C: Top clamp	M: Top wedge clamping	D: Rigid clamping	P: lever clamping	S: Screw clamping

2-Insert Shape									
<b>C</b>	<b>D</b>	<b>H</b>	<b>K</b>	<b>O</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>V</b>	<b>W</b>
80°	55°	120°	55°	135°	360°	90°	60°	35°	80°

3-Approaching Angle									
<b>A</b>		<b>J</b>		<b>T</b>		<b>E</b>		<b>N</b>	
90°		93°		60°		60°		62°30'	
<b>H</b>		<b>S</b>		<b>D</b>		<b>M</b>		<b>W</b>	
107°30'		45°		45°		50°		60°	
<b>R</b>		<b>C</b>		<b>L</b>		<b>V</b>		<b>G</b>	
75°		90°		95°		72°30'		90°	
<b>B</b>		<b>K</b>		<b>U</b>		<b>F</b>		<b>X</b>	Special Approaching angle, explanation needed.
75°		75°		93°		90°			

4-Clearance Angle							
<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>N</b>	<b>P</b>	<b>O</b>
							Other clearance angle
5°	7°	15°	20°	25°	0°	11°	

**12**  
6

**12**  
7

**JX**  
8

**09**  
9

**F**  
10

5-Hand of Tool	
L Left hand	
R Right hand	
N Neutral	

6 -Width of Shank (mm)	
	06=6
	08=8
	10=10
	12=12
	14=14
	16=16
	20=20
	25=25
	30=30
	40=40
50=50	

7 -Center Height of Tool (mm)	
	06=6
	08=8
	10=10
	12=12
	14=14
	16=16
	20=20
	25=25
	30=30
	40=40
50=50	

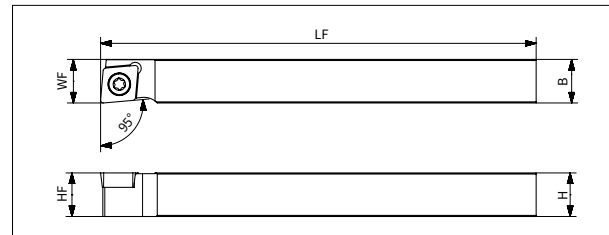
Small Tools

8 -Tool Length (mm)	
A=32	M=150
B=40	N=160
C=50	P=170
D=60	Q=180
E=70	R=200
F=80	S=250
FX=85	T=300
G=90	U=350
H=100	V=400
J=110	W=450
JX=120	Y=500
K=125	
L=140	X=Special

9 -Length of Cutting Edge			
C, D, E, M, V		H	O
R	S	T	W

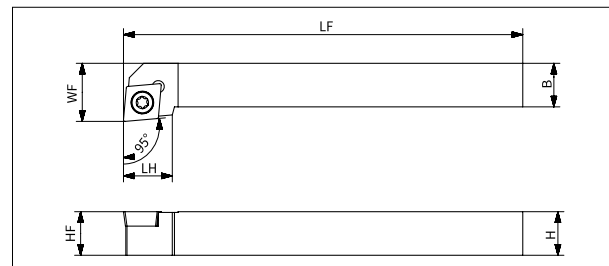
10 - Added Symbol	
F	Without Offset
J	With high pressure coolant

**SCLC External Turning Shank - Without Offset**







Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
<b>SCLCR/L 0808F-06F</b>	8	8	8	80	-	8	●	●	SP025065	FT-TP08
<b>SCLCR/L 1010JX-06F</b>	10	10	10	120	-	10	●	●		
<b>SCLCR/L 1010JX-09F</b>	10	10	10	120	15	10	●	●	SP040090-X	FT-TP15
<b>SCLCR/L 1212F-09F</b>	12	12	12	80	-	12	●	●		
<b>SCLCR/L 1212JX-09F</b>	12	12	12	120	-	12	●	●		
<b>SCLCR/L 1616JX-09F</b>	16	16	16	120	-	16	●	●		

**SCLC External Turning Shank - With Offset**



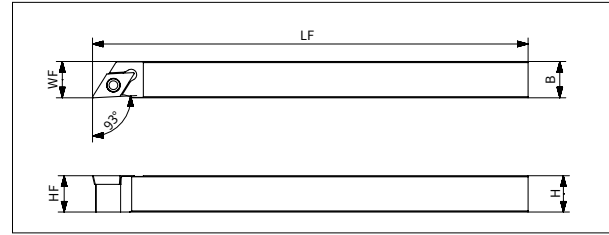
Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
<b>SCLCR/L 1010F-06</b>	10	10	10	80	9	12	●	●	SP025065	FT-TP08
<b>SCLCR/L 1010F-09</b>	10	10	10	80	14	14	●	●	SP040090-X	FT-TP15
<b>SCLCR/L 1212H-09</b>	12	12	12	100	14	16	●	●		
<b>SCLCR/L 1616H-09</b>	16	16	16	100	15	20	●	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
<b>SCLCR/L.....06/06F</b>	CCET 0602	CCET 0602	CCGT 0602	CCGT 0602
<b>SCLCR/L.....09/09F</b>	CCET 09T3	CCET 09T3	CCGT 09T3	CCGT 09T3
Reference page	P73	P73	P70	P70

●: Stock available ▲: Stock available now but will be replaced in the future.

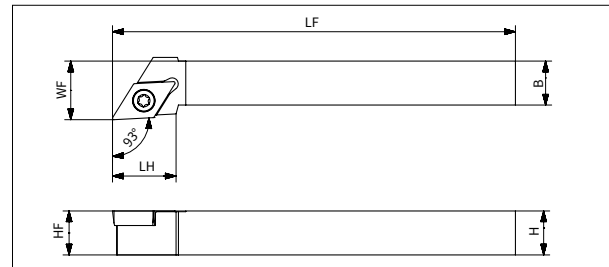
**SDJC External Turning Shank - Without Offset**



Product code	Dimension (mm)							Stock		Spare parts	
	H	B	HF	LF	LH	WF	HBKW	R	L	Screw	Wrench
<b>SDJCR/L 0808F-07F</b>	8	8	8	80	14	8	0.5	●	●	SP025065	FT-TP08
<b>SDJCR/L 1010JX-07F</b>	10	10	10	120	-	10	-	●	●		
<b>SDJCR/L 1010JX-11F</b>	10	10	10	120	20	10	3	●	●	SP040090-X	FT-TP15
<b>SDJCR/L 1212F-11F</b>	12	12	12	80	20	12	1	●	●		
<b>SDJCR/L 1212JX-11F</b>	12	12	12	120	20	12	1	●	●		
<b>SDJCR/L 1616JX-11F</b>	16	16	16	120	-	16	-	●	●		


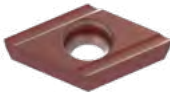


Small Tools

**SDJC External Turning Shank - With Offset**



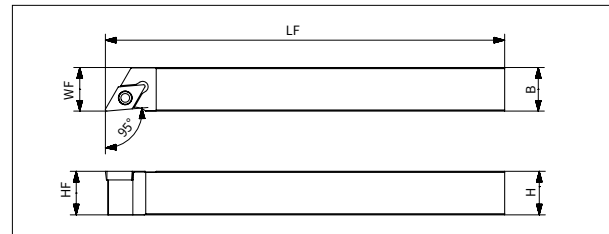
Product code	Dimension (mm)							Stock		Spare parts	
	H	B	HF	LF	LH	WF	HBKW	R	L	Screw	Wrench
<b>SDJCR/L 1010F-07</b>	10	10	10	80	12	12	-	●	●	SP025065	FT-TP08
<b>SDJCR/L 1010F-11</b>	10	10	10	80	18	12	3	●	●		
<b>SDJCR/L 1212H-11</b>	12	12	12	100	18	16	1	●	●	SP040090-X	FT-TP15
<b>SDJCR/L 1616H-11</b>	16	16	16	100	18	20	-	●	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
<b>SDJCR/L.....07/07F</b>	DCET 0702	DCET 0702	DCGT 0702	DCGT 0702
<b>SDJCR/L.....11/11F</b>	DCET 11T3	DCET 11T3	DCGT 11T3	DCGT 11T3
Reference page	P76	P77	P74	P74

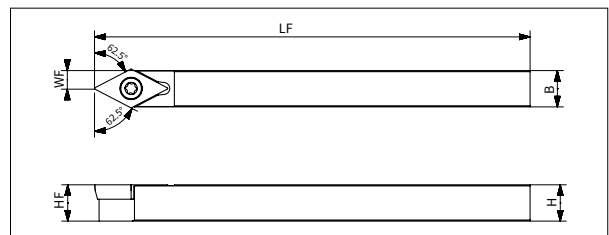
●: Stock available ▲: Stock available now but will be replaced in the future.

**SDLC External Turning Shank - Without Offset**







Product code	Dimension (mm)							Stock		Spare parts	
	H	B	HF	LF	LH	WF	HBKW	R	L	Screw	Wrench
SDLCR/L 1010JX-07F	10	10	10	120	-	10	-	●	●	SP025065	FT-TP08
SDLCR/L 1212F-07F	12	12	12	80	-	12	-	●	●		
SDLCR/L 1212JX-07F	12	12	12	120	-	12	-	●	●		
SDLCR/L 1616JX-07F	16	16	16	120	-	16	-	●	●		
SDLCR 1010F-11F	10	10	10	80	-	10	4	●	-	SP040090-X	FT-TP15
SDLCR/L 1010JX-11F	10	10	10	120	-	10	4	●	●		
SDLCR 1212F-11F	12	12	12	80	-	12	2	●	-		
SDLCR/L 1212JX-11F	12	12	12	120	-	12	2	●	●		
SDLCR 1616H-11F	16	16	16	100	-	16	-	●	-		
SDLCR/L 1616JX-11F	16	16	16	120	-	16	-	●	●		

**SDNC External Turning Shank - Neutral**



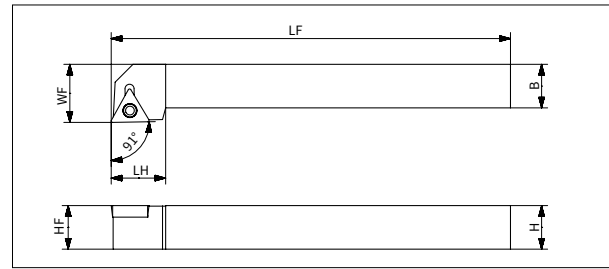
Product code	Dimension (mm)							Stock	Spare parts	
	H	B	HF	LF	LH	WF	HBKW	N	Screw	Wrench
SDNCN 0808F-07	8	8	8	80	-	4	-	●	SP025065	FT-TP08
SDNCN 1010JX-07	10	10	10	120	-	5	-	●		
SDNCN 1212JX-07	12	12	12	120	-	6	-	●		
SDNCN 1010F-11	10	10	10	80	-	5	-	●	SP040090-X	FT-TP15
SDNCN 1010JX-11	10	10	10	120	-	5	-	●		
SDNCN 1212F-11	12	12	12	80	-	6	-	●		
SDNCN 1212JX-11	12	12	12	120	-	6	-	●		
SDNCN 1616H-11	16	16	16	100	-	8	-	●		
SDNCN 1616JX-11	16	16	16	120	-	8	-	●		

**Applicable Insert**

Applicaition	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
SDLCR/L....-07F SDNCN ....-07	DCET 0702	DCET 0702	DCGT 0702	DCGT 0702
SDLCR/L....-11F SDNCN ....-11	DCET 11T3	DCET 11T3	DCGT 11T3	DCGT 11T3
Reference page	P76	P77	P74	P74

●: Stock available ▲: Stock available now but will be replaced in the future.

**STGC/STGP External Turning Shank - With Offset**



Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
<b>STGCR 0808F-08</b>	8	8	8	80	12	10	●	-	SP020049	FT-TP06
<b>STGCR/L 1010F-11</b>	10	10	10	80	15	14	●	●	SP025065	FT-TP08
<b>STGCR/L 1212H-11</b>	12	12	12	100	15	16	●	●		
<b>STGCR/L 1616H-11</b>	16	16	16	100	15	20	●	●		
<b>STGPR 0808F-08</b>	8	8	8	80	12	10	●	-	SP020049	FT-TP06
<b>STGPR/L 1010F-11</b>	10	10	10	80	15	14	●	●	SP030082	FT-TP09
<b>STGPR/L 1212H-11</b>	12	12	12	100	15	16	●	●		
<b>STGPR/L 1616H-11</b>	16	16	16	100	15	20	●	●		

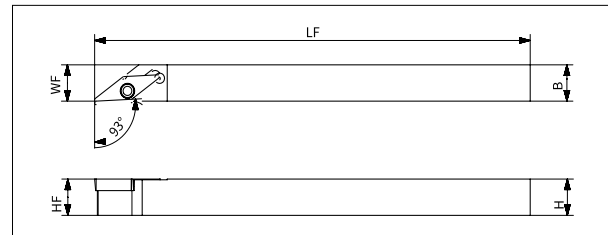
Small Tools

**Applicable Insert**

Applicaiton	Finishing	Finishing
Insert Shape	F	M
Holder Type		
<b>STGCR 0808F-08</b>	-	TCET 0802
<b>STGPR 0808F-08</b>	TPEH 0802	-
<b>STGC... -11</b>	-	TCET 1103
<b>STGP... -11</b>	TPEH 1103	-
Reference page	P82, 83	P83

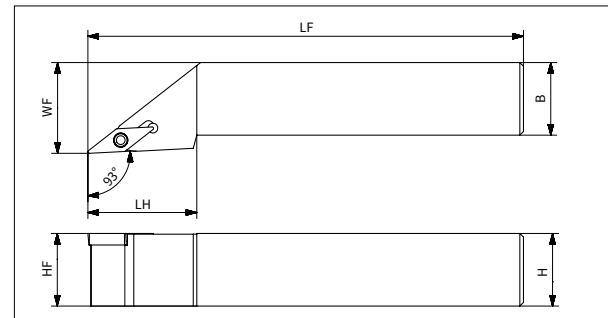
●: Stock available    ▲: Stock available now but will be replaced in the future.

**SVJB External Turning Shank - Without Offset**








Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
SVJBR/L 1010JX-11F	10	10	10	120	-	10	●	●	SP025065	FT-TP08
SVJBR/L 1212JX-11F	12	12	12	120	-	12	●	●		
SVJBR/L 1616JX-11F	16	16	16	120	-	16	●	●		
SVJBR/L 2020JX-11F	20	20	20	120	20	20	●	●		

**SVJB External Turning Shank - With Offset**



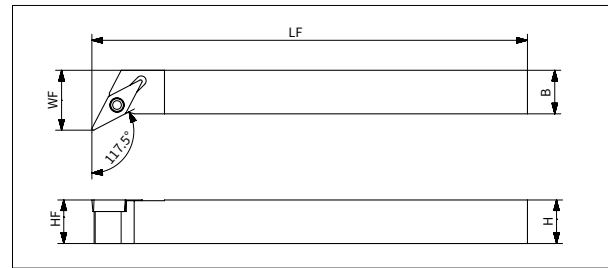
Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
SVJBR/L 2020K-11	20	20	20	125	30	25	●	●	SP025065	FT-TP08
SVJBR/L 2020K-16	20	20	20	125	30	25	●	●	SP040090-X	FT-TP15
SVJBR/L 2525M-16	25	25	25	150	30	32	●	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Finishing	Semi-finishing--Finishing
Insert Shape	F	M	Y	LF	UF
Holder Type					
SVJBR/L....-11/11F	VBET 1103	VBET 1103	VBET 1103	VBGT 1103	VBGT 1103
SVJBR/L....-16	VBET 1604	VBET 1604	VBET 1604	VBGT 1604	VBGT 1604
Reference page	P87	P88	P88	P84	P84, 85

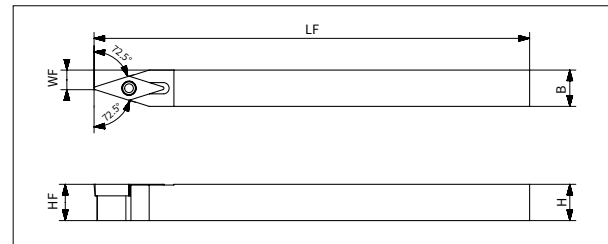
●: Stock available ▲: Stock available now but will be replaced in the future.

**SVPB External Turning Shank - With Offset**



Product code	Dimension (mm)					Stock		Spare parts	
	H	B	HF	LF	WF	R	L	Screw	Wrench
<b>SVPBR/L 1010JX-11</b>	10	10	10	120	14.5	●	●	SP025065	FT-TP08
<b>SVPBR/L 1212JX-11</b>	12	12	12	120	16.5	●	●		
<b>SVPBR/L 1616JX-11</b>	16	16	16	120	20.5	●	●		
<b>SVPBR/L 2020K-11</b>	20	20	20	125	25	●	●		
<b>SVPBR/L 2020K-16</b>	20	20	20	125	25	●	●	SP040090-X	FT-TP15
<b>SVPBR/L 2525M-16</b>	25	25	25	150	32	●	●		

**SVVBN External Turning Shank - Neutral**



Product code	Dimension (mm)					Stock	Spare parts	
	H	B	HF	LF	WF	N	Screw	Wrench
<b>SVVBN 1010JX-11</b>	10	10	10	120	5	●	SP025065	FT-TP08
<b>SVVBN 1212JX-11</b>	12	12	12	120	6	●		
<b>SVVBN 1616JX-11</b>	16	16	16	120	8	●		
<b>SVVBN 2020K-11</b>	20	20	20	125	10	●		
<b>SVVBN 2020K-16</b>	20	20	20	125	10	●	SP040090-X	FT-TP15
<b>SVVBN 2525M-16</b>	25	25	25	150	12.5	●		

**Applicable Insert**

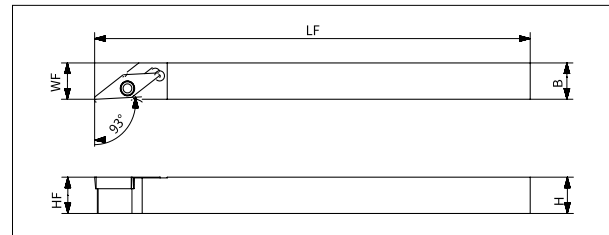
Applicaiton	Finishing	Finishing	Finishing	Finishing	Semi-finishing--Finishing
Insert Shape	F	M	Y	LF	UF
Holder Type					
<b>SVPBR/L----11</b> <b>SVVBN ----11</b>	VBET 1103	VBET 1103	VBET 1103	VBGT 1103	VBGT 1103
<b>SVPBR/L----16</b> <b>SVVBN ----16</b>	VBET 1604	VBET 1604	VBET 1604	VBGT 1604	VBGT 1604
Reference page	P87	P88	P88	P84	P84, 85

●: Stock available ▲: Stock available now but will be replaced in the future.

Small Tools

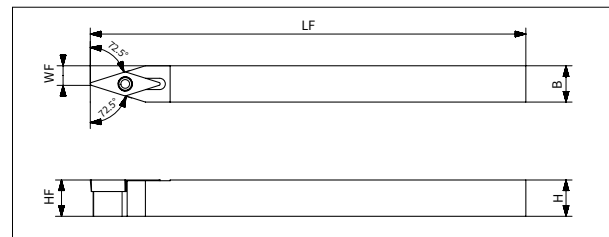


**SVJC External Turning Shank - Without Offset**



Product code	Dimension (mm)					Stock		Spare parts	
	H	B	HF	LF	WF	R	L	Screw	Wrench
SVJCR/L 1010JX-11F	10	10	10	120	10	●	●	SP025065	FT-TP08
SVJCR/L 1212JX-11F	12	12	12	120	12	●	●		
SVJCR/L 1616JX-11F	16	16	16	120	16	●	●		
SVJCR/L 2020JX-11F	20	20	20	120	20	●	●		

**SVVCN External Turning Shank - Neutral**



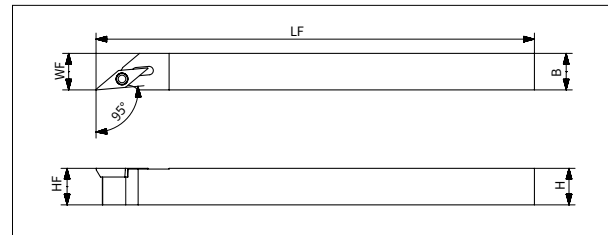
Product code	Dimension (mm)					Stock	Spare parts	
	H	B	HF	LF	WF	N	Screw	Wrench
SVVCN 1010JX-11	10	10	10	120	5	●	SP025065	FT-TP08
SVVCN 1212JX-11	12	12	12	120	6	●		
SVVCN 1616JX-11	16	16	16	120	8	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing
Insert Shape	F	LF	UF
			
Holder Type			
SVJCR/L....-11F SVVCN ....-11	VCET 1103	VCGT 1103	VCGT 1103
Reference page	P87	P84	P84, 85

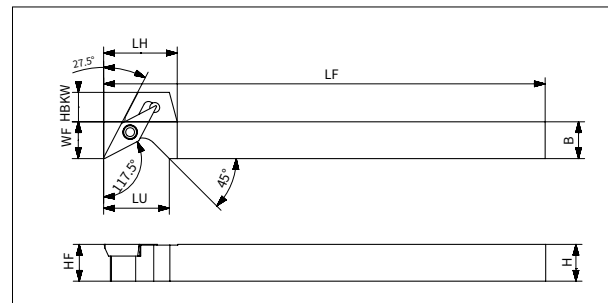
●: Stock available ▲: Stock available now but will be replaced in the future.

**SVLP External Turning Shank - Without Offset**



Product code	Dimension (mm)						Stock		Spare parts	
	H	B	HF	LF	LH	WF	R	L	Screw	Wrench
<b>SVLPR/L 1010JX-08F</b>	10	10	10	120	16	10	●	●	SP020049	FT-TP06
<b>SVLPR/L 1212JX-08F</b>	12	12	12	120	16	12	●	●		
<b>SVLPR/L 1616JX-08F</b>	16	16	16	120	20	16	●	●		
<b>SVLPR/L 1212JX-11F</b>	10	10	10	120	20	10	●	●	SP025065	FT-TP08
<b>SVLPR/L 1616JX-11F</b>	12	12	12	120	20	12	●	●		
<b>SVLPR/L 2020K-11F</b>	16	16	16	120	20	16	●	●		

**SVPP External Turning Shank - Step Style**



Product code	Dimension (mm)							Stock		Spare parts	
	H	B	HF	LF	LH	WF	HBKW	R	L	Screw	Wrench
<b>SVPPR/L 1010JX-08F</b>	10	10	10	120	16	10	4	●	●	SP020049	FT-TP06
<b>SVPPR/L 1212JX-08F</b>	12	12	12	120	16	12	2	●	●		
<b>SVPPR/L 1616JX-08F</b>	16	16	16	120	20	16	-	●	●		
<b>SVPPR/L 1010JX-11F</b>	10	10	10	120	20	10	8	●	●	SP025065	FT-TP08
<b>SVPPR/L 1212JX-11F</b>	12	12	12	120	20	12	6	●	●		
<b>SVPPR/L 1616JX-11F</b>	16	16	16	120	20	16	2	●	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
<b>SVLPR/L.....08F</b> <b>SVPPR/L.....08F</b>	VPET 0802	VPET 0802	-	-
<b>SVLPR/L.....11F</b> <b>SVPPR/L.....11F</b>	-	VPET 1103	VPGT 1103	VPGT 1103
Reference page	P87	P88	P84	P84, 85

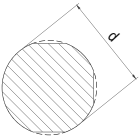
●: Stock available ▲: Stock available now but will be replaced in the future.

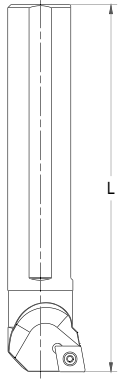
Small Tools

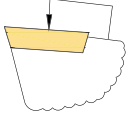
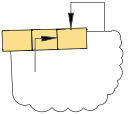
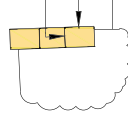
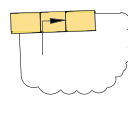
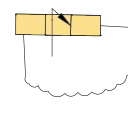
**External Sleeve Holder Denomination System**











<b>S</b>	<b>20</b>	<b>JX</b>	<b>S</b>	<b>C</b>
1	2	3	4	5


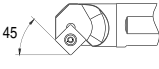
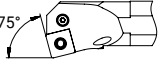
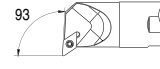
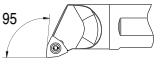
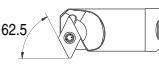
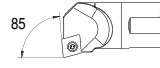
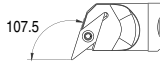
1-Holder Structure	
A	Steel shank with internal coolant
C	Carbide
E	Carbide with internal coolant
S	Steel shank

2 - Holder Diameter (mm)		
	06 = 6	20 = 20
	08 = 8	25 = 25
	10 = 10	32 = 32
	12 = 12	40 = 40
	16 = 16	50 = 50

3-Holder Length (mm)		
	E=70	K=125
	F=80	L=140
	FX=85	M=150
	G=90	N=160
	H=100	P=170
	J=110	Q=180
	JX=120	R=200

4-Clamping Type				
C:Top clamp	M:Top wedge clamping	D:Rigid clamping	P:lever clamping	S:Screw clamping
				

5 - Insert Shape									
C	D	H	K	O	R	S	T	V	W
 80°	 55°	 120°	 55°	 135°	 360°	 90°	 60°	 35°	 80°

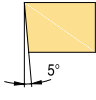
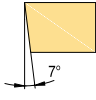
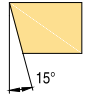
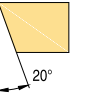
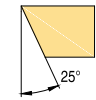
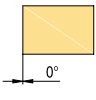
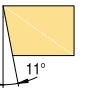
6- Approaching Angle							
F	 90°	S	 45°	K	 75°	U	 93°
L	 95°	W	 62.5°	Y	 85°	Q	 107.5°

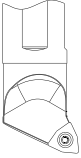
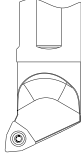
**L**  
6








**C**  
7

**L**  
8

**09**  
9

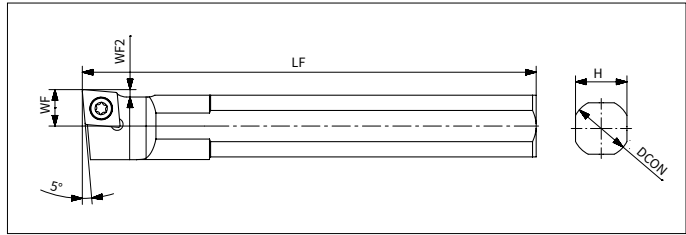
7 - Clearance Angle			
B	C	D	E
			
F	N	P	O
			Other clearance angle

8-Hand of Tool	
R Right hand	
L Left hand	

9 - Length of Cutting Edge			
C, D, E, M, V		H	O
			
R	S	T	W
			

Small Tools

**External Sleeve Holder - Suitable for C Type Insert**



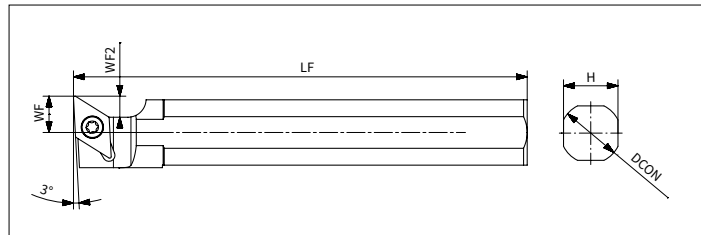
Product code	Dimension (mm)					Stock	Spare parts	
	DCON	LF	H	WF	WF2	L	Screw	Wrench
<b>S12F-SCLCL06</b>	12	80	11	6	1	●	SP025065	FT-TP08
<b>S14H-SCLCL06</b>	14	100	13	6	1	●		
<b>S15.0H-SCLCL06</b>	15.875	100	15	6	1	●		
<b>S16H-SCLCL06</b>	16	100	15	6	1	●		
<b>S19.0JX-SCLCL06</b>	19.05	120	17	6	1	●		
<b>S20JX-SCLCL06</b>	20	120	18	6	1	●		
<b>S19.0JX-SCLCL09</b>	19.05	120	17	10	2	●	SP040090-X	FT-TP15
<b>S20JX-SCLCL09</b>	20	120	18	10	2	●		
<b>S22JX-SCLCL09</b>	22	120	20	10	2	●		
<b>S25JX-SCLCL09</b>	25	120	23	10	2	●		
<b>S25.0JX-SCLCL09</b>	25.4	120	23	10	2	●		

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
<b>S-SCLC06</b>	CCET 0602	CCET 0602	CCGT 0602	CCGT 0602
<b>S-SCLC09</b>	CCET 09T3	CCET 09T3	CCGT 09T3	CCGT 09T3
Reference page	P73	P73	P70	P70

●: Stock available ▲: Stock available now but will be replaced in the future.





**External Sleeve Holder-Suitable for D Type Insert**



Product code	Dimension (mm)					Stock	Spare parts	
	DCON	LF	H	WF	WF2	L	Screw	Wrench
<b>S12F-SDUCL07</b>	12	80	11	6	3.8	●	SP025065	FT-TP08
<b>S14H-SDUCL07</b>	14	100	13	6	3.8	●		
<b>S15.0H-SDUCL07</b>	15.875	100	15	6	3.8	●		
<b>S16H-SDUCL07</b>	16	100	15	6	3.8	●		
<b>S19.0JX-SDUCL07</b>	19.05	120	17	6	3.8	●		
<b>S20JX-SDUCL07</b>	20	120	18	6	3.8	●		
<b>S19.0JX-SDUCL11</b>	19.05	120	17	10	5.8	●	SP040090-X	FT-TP15
<b>S20JX-SDUCL11</b>	20	120	20	10	5.8	●		
<b>S22JX-SDUCL11</b>	22	120	20	10	5.8	●		
<b>S25JX-SDUCL11</b>	25	120	23	10	5.8	●		
<b>S25.0JX-SDUCL11</b>	25.4	120	23	10	5.8	●		

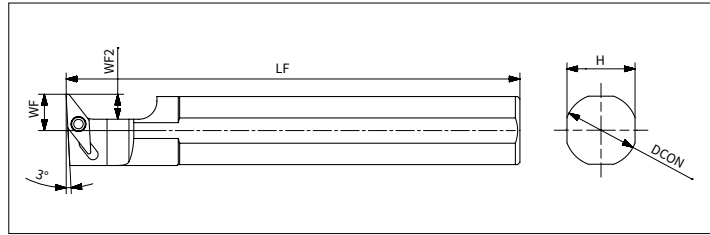
Small Tools

**Applicable Insert**

Applicaiton	Finishing	Finishing	Finishing	Semi-finishing–Finishing
Insert Shape	F	M	LF	UF
Holder Type				
<b>S-SDUCL07</b>	DCET 0702	DCET 0702	DCGT 0702	DCGT 0702
<b>S-SDUCL11</b>	DCET 11T3	DCET 11T3	DCGT 11T3	DCGT 11T3
Reference page	P76	P77	P74	P74

●: Stock available ▲: Stock available now but will be replaced in the future.

**External Sleeve Holder-Suitable for V Type Insert**



Product code	Dimension (mm)					Stock	Spare parts	
	DCON	LF	H	WF	WF2	L	Screw	Wrench
<b>S12F-SVUPL08</b>	12	80	11	7.5	5.5	●	SP020049	FT-TP06
<b>S14H-SVUPL08</b>	14	100	13	7.5	5.5	●		
<b>S15.0H-SVUPL08</b>	15.875	100	15	8	5.5	●		
<b>S16H-SVUPL08</b>	16	100	15	8	5.5	●		
<b>S19.0JX-SVUBL11</b>	19.05	120	17	10.5	8	●	SP025065	FT-TP08
<b>S20JX-SVUBL11</b>	20	120	18	10.5	8	●		
<b>S22JX-SVUBL11</b>	22	120	20	10.5	8	●		
<b>S25JX-SVUBL11</b>	25	120	23	10.5	8	●		
<b>S25.0JX-SVUBL11</b>	25.4	120	23	10.5	8	●		

**Applicable Insert**

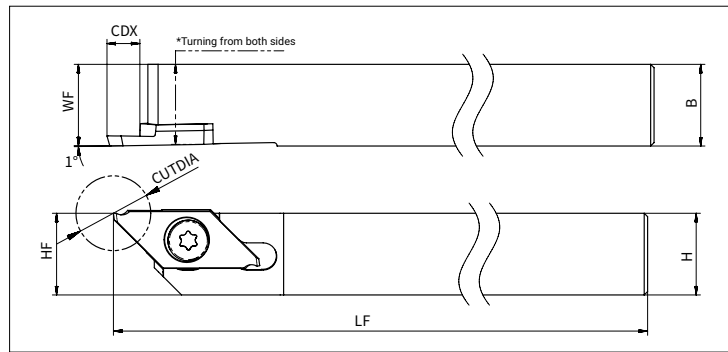
Applicaiton	Finishing	Finishing	Finishing	Finishing	Semi-finishing--Finishing
Insert Shape Holder Type	F 	M 	Y 	LF 	UF 
	<b>S-SVUPL08</b>	VPET 0802	VPET 0802	-	-
<b>S-SVUBL11</b>	VBET 1103	VBET 1103	VBET 1103	VBGT 1103	VBGT 1103
Reference page	P87	P88	P88	P84	P84, 85

●: Stock available    ▲: Stock available now but will be replaced in the future.





**ASW Multifunctional Tool Holder**



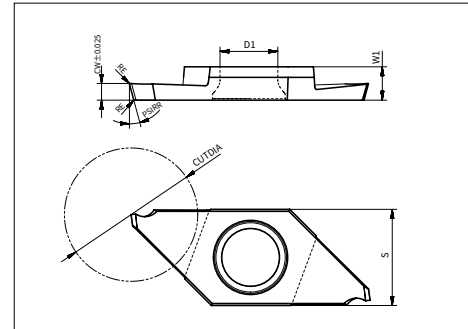
Product code	Dimension (mm)							Stock		Spare parts	
	H	HF	B	LF	LH	WF	CDX	R	L	Screw	Wrench
<b>ASWSR/L 1010-09</b>	10	10	10	120	15	10	6	●	●	SP04509357	FT-TP10
<b>ASWSR/L 1212-09</b>	12	12	12	120	-	12	6	●	●		
<b>ASWSR/L 1616-09</b>	16	16	16	120	-	16	6	●	●		
<b>ASWSR/L 2020-09</b>	20	20	20	120	-	20	6	●	●		
<b>ASWSR/L 1010-10</b>	10	10	10	120	20	10	8	●	●		
<b>ASWSR/L 1212-10</b>	12	12	12	120	-	12	8	●	●		
<b>ASWSR/L 1616-10</b>	16	16	16	120	-	16	8	●	●		
<b>ASWSR/L 2020-10</b>	20	20	20	120	-	20	8	●	●		

**Applicable Insert**

Applicaiton	Parting off	Backturning	Threading
Insert Shape			
Holder Type			
<b>ASWSR/L....-09</b>	ASWP 09R/L	ASWB 09R/L	ASWT 09R/L
<b>ASWSR/L....-10</b>	ASWP 10R/L	ASWB 10R/L	-
Reference page	P131, 132	P133	P133

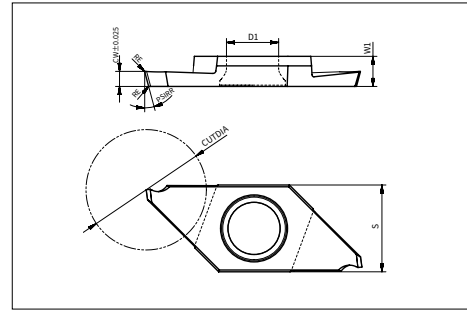
●: Stock available ▲: Stock available now but will be replaced in the future.

## Parting off Insert



Product code	Dimension (mm)								Grade
	CW	CUTDIA	RE	PSIRR	GAN	W1	S	D1	AP301M
ASWP 09R/L050D05-F	0.5	5	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L070D08-F	0.7	8	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L100D12-F	1	12	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L120D12-F	1.2	12	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L150D12-F	1.5	12	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L200D12-F	2	12	0.03	0°	15°	3	8.7	5.2	●
ASWP 09R/L050D05-F16R	0.5	5	0.03	16°	25°	3	8.7	5.2	●
ASWP 09R/L070D08-F16R	0.7	8	0.03	16°	25°	3	8.7	5.2	●
ASWP 09R/L100D12-F16R	1	12	0.03	16°	25°	3	8.7	5.2	●
ASWP 09R/L120D12-F16R	1.2	12	0.03	16°	25°	3	8.7	5.2	●
ASWP 09R/L150D12-F16R	1.5	12	0.03	16°	15°	3	8.7	5.2	●
ASWP 09R/L200D12-F16R	2	12	0.03	16°	15°	3	8.7	5.2	●
ASWP 09R/L100D12-M	1	12	0.08	0°	12°	3	8.7	5.2	●
ASWP 09R/L150D12-M	1.5	12	0.08	0°	12°	3	8.7	5.2	●
ASWP 09R/L200D12-M	2	12	0.08	0°	12°	3	8.7	5.2	●
ASWP 09R/L100D12-M16R	1	12	0.08	16°	12°	3	8.7	5.2	●
ASWP 09R/L150D12-M16R	1.5	12	0.08	16°	12°	3	8.7	5.2	●
ASWP 09R/L200D12-M16R	2	12	0.08	16°	12°	3	8.7	5.2	●

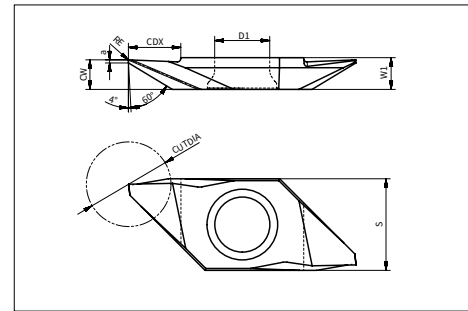
**Parting off Insert**



Product code	Dimension (mm)								Grade
	CW	CUTDIA	RE	PSIRR	GAN	W1	S	D1	AP301M
ASWP 09R/L050D05-T	0.5	5	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L070D08-T	0.7	8	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L100D12-T	1	12	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L120D12-T	1.2	12	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L150D12-T	1.5	12	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L200D12-T	2	12	0	0°	0°	3	8.7	5.2	●
ASWP 09R/L050D05-T20R	0.5	5	0	20°	0°	3	8.7	5.2	●
ASWP 09R/L070D08-T20R	0.7	8	0	20°	0°	3	8.7	5.2	●
ASWP 09R/L100D12-T20R	1	12	0	20°	0°	3	8.7	5.2	●
ASWP 09R/L120D12-T20R	1.2	12	0	20°	0°	3	8.7	5.2	●
ASWP 09R/L150D12-T20R	1.5	12	0	20°	0°	3	8.7	5.2	●
ASWP 09R/L200D12-T20R	2	12	0	20°	0°	3	8.7	5.2	●
ASWP 10R/L150D16-F	1.5	16	0.05	0°	20°	4	9.5	5.2	●
ASWP 10R/L200D16-F	2	16	0.05	0°	20°	4	9.5	5.2	●
ASWP 10R/L150D16-F16R	1.5	16	0.05	16°	20°	4	9.5	5.2	●
ASWP 10R/L200D16-F16R	2	16	0.05	16°	20°	4	9.5	5.2	●
ASWP 10R/L150D16-M	1.5	16	0.08	0°	12°	4	9.5	5.2	●
ASWP 10R/L200D16-M	2	16	0.08	0°	12°	4	9.5	5.2	●
ASWP 10R/L150D16-M16R	1.5	16	0.08	16°	12°	4	9.5	5.2	●
ASWP 10R/L200D16-M16R	2	16	0.08	16°	12°	4	9.5	5.2	●
ASWP 10R/L150D16-T	1.5	16	0	0°	0°	4	9.5	5.2	●
ASWP 10R/L200D16-T	2	16	0	0°	0°	4	9.5	5.2	●
ASWP 10R/L150D16-T20R	1.5	16	0	20°	0°	4	9.5	5.2	●
ASWP 10R/L200D16-T20R	2	16	0	20°	0°	4	9.5	5.2	●

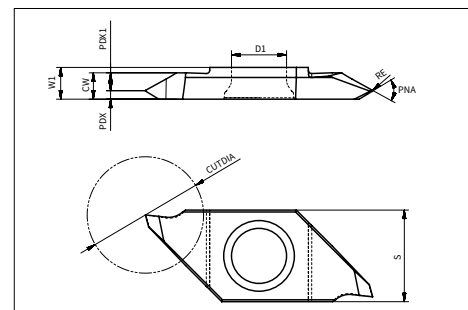
●: Stock available ▲: Stock available now but will be replaced in the future.

## Backturning Insert



Product code	Dimension (mm)							Grade
	CW	a	CDX	W1	S	D1	RE	AP301M
ASWB 09R150005-FR	1.5	0.25	2.6	3	8.7	5.2	0.05	●
ASWB 09R280005-FR	2.8	0.3	4.6	3	8.7	5.2	0.05	●
ASWB 09L280005-FR	2.8	0.3	4.6	3	8.7	5.2	0.05	●
ASWB 09R280010-FR	2.8	0.3	4.6	3	8.7	5.2	0.1	●
ASWB 09L280010-FR	2.8	0.3	4.6	3	8.7	5.2	0.1	●
ASWB 10R380005-FR	3.8	0.3	6.3	4	9.5	5.2	0.05	●
ASWB 10L380005-FR	3.8	0.3	6.3	4	9.5	5.2	0.05	●
ASWB 10R380010-FR	3.8	0.3	6.3	4	9.5	5.2	0.1	●
ASWB 10L380010-FR	3.8	0.3	6.3	4	9.5	5.2	0.1	●

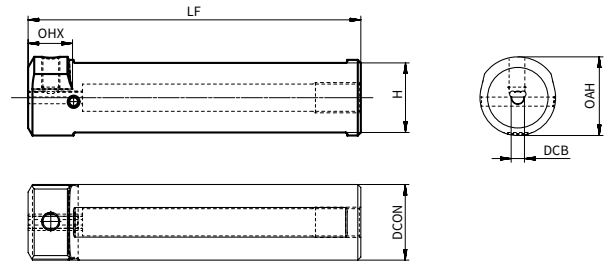
## Threading Insert



Product code	Angle	Applicable Thread		Dimension (mm)						Grade
	PNA	mm	Thread/Inch	PDX	RE	CW	W1	S	D1	AP301M
ASWT 09R60000-FR	60	0.2~0.6	64~48	0.4	0.05	2.5	3	8.7	5.2	●
ASWT 09R60000-FL	60	0.2~0.6	64~48	2.1	0.05	2.5	3	8.7	5.2	●
ASWT 09R60005-FR	60	0.5~1.25	48~24	0.8	0.05	2.5	3	8.7	5.2	●
ASWT 09R60005-FL	60	0.5~1.25	48~24	1.7	0.05	2.5	3	8.7	5.2	●
ASWT 09R60010-FN	60	1.0~1.5	24~18	1.25	0.1	2.5	3	8.7	5.2	●
ASWT 09R55005-FR	55	-	40~16	0.8	0.05	2.5	3	8.7	5.2	●
ASWT 09R55005-FL	55	-	40~16	1.7	0.05	2.5	3	8.7	5.2	●
ASWT 09L60000-FR	60	0.2~0.6	64~48	2.1	0.05	2.5	3	8.7	5.2	●
ASWT 09L60000-FL	60	0.2~0.6	64~48	0.4	0.05	2.5	3	8.7	5.2	●

●: Stock available ▲: Stock available now but will be replaced in the future.

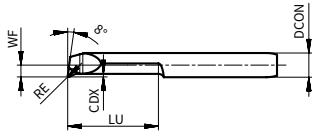
**Solid carbide boring tool holder**



Product code	DCB	DCON	LF	H	Stock
ASI 0010-04	4	10	65	8	●
ASI 0010-05	5				●
ASI 0012-04	4	12	70	10	●
ASI 0012-05	5				●
ASI 0012-06	6				●
ASI 0016-04	4	16	75	14	●
ASI 0016-05	5				●
ASI 0016-06	6				●
ASI 0016-08	8				●
ASI 0020-04	4	20	90	18	●
ASI 0020-05	5				●
ASI 0020-06	6				●
ASI 0020-08	8				●
ASI 0025-04	4	25	110	23	●
ASI 0025-05	5				●
ASI 0025-06	6				●
ASI 0025-08	8				●

●: Stock available    ▲: Stock available now but will be replaced in the future.

**ASIB T Type-Small Dia. Boring Tool**

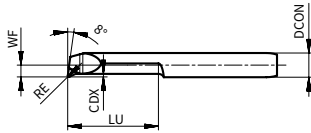


Product code	Dimension (mm)							AP220U	
	DCON	RE	WF	LF	DMIN	LU	CDX	R	L
ASIBR/L 04T000-0301	4	0	0.1	27.3	0.3	1.2	0.1	●	●
ASIBR/L 04T000-0401	4	0	0.2	27.3	0.4	1.6	0.1	●	●
ASIBR/L 04T000-0502	4	0	0.2	27.3	0.5	2	0.1	●	●
ASIBR/L 04T000-0602	4	0	0.3	27.3	0.6	2.5	0.1	●	●
ASIBR/L 04T000-0703	4	0	0.3	27.3	0.7	3.5	0.1	●	●
ASIBR/L 04T000-0804	4	0	0.4	27.3	0.8	4	0.1	●	●
ASIBR/L 04T000-0905	4	0	0.4	27.3	0.9	5	0.1	●	●
ASIBR/L 04T005-1004	4	0.05	0.5	27.3	1	4	0.1	●	●
ASIBR/L 04T005-1006	4	0.05	0.5	27.3	1	6	0.1	●	●
ASIBR/L 04T010-1004	4	0.1	0.5	27.3	1	4	0.1	●	●
ASIBR/L 04T010-1006	4	0.1	0.5	27.3	1	6	0.1	●	●
ASIBR/L 04T005-1706	4	0.05	0.7	27.3	1.7	6	0.2	●	●
ASIBR/L 04T005-1709	4	0.05	0.7	27.3	1.7	9	0.2	●	●
ASIBR/L 04T010-1706	4	0.1	0.7	27.3	1.7	6	0.2	●	●
ASIBR/L 04T010-1709	4	0.1	0.7	27.3	1.7	9	0.2	●	●
ASIBR/L 04T005-2206	4	0.05	1	27.3	2.2	6	0.2	●	●
ASIBR/L 04T005-2209	4	0.05	1	27.3	2.2	9	0.2	●	●
ASIBR/L 04T010-2206	4	0.1	1	27.3	2.2	6	0.2	●	●
ASIBR/L 04T010-2209	4	0.1	1	27.3	2.2	9	0.2	●	●
ASIBR/L 04T010-2213	4	0.1	1	32.3	2.2	13	0.2	●	●
ASIBR/L 04T003-2710	4	0.03	1.2	27.3	2.7	10	0.2	●	●
ASIBR/L 04T005-2710	4	0.05	1.2	27.3	2.7	10	0.2	●	●
ASIBR/L 04T005-2715	4	0.05	1.2	32.3	2.7	15	0.2	●	●
ASIBR/L 04T015-2710	4	0.15	1.2	27.3	2.7	10	0.2	●	●
ASIBR/L 04T015-2715	4	0.15	1.2	32.3	2.7	15	0.2	●	●
ASIBR/L 04T003-3210	4	0.03	1.5	27.3	3.2	10	0.2	●	●
ASIBR/L 04T005-3215	4	0.05	1.5	32.3	3.2	15	0.2	●	●
ASIBR/L 04T005-3220	4	0.05	1.5	37.3	3.2	20	0.2	●	●
ASIBR/L 04T015-3210	4	0.15	1.5	27.3	3.2	10	0.2	●	●
ASIBR/L 04T015-3215	4	0.15	1.5	32.3	3.2	15	0.2	●	●
ASIBR/L 04T015-3220	4	0.15	1.5	37.3	3.2	20	0.2	●	●
ASIBR/L 04T003-4210	4	0.03	2	27.3	4.2	10	0.3	●	●
ASIBR/L 04T005-4215	4	0.05	2	32.3	4.2	15	0.3	●	●
ASIBR/L 04T005-4220	4	0.05	2	37.3	4.2	20	0.3	●	●
ASIBR/L 04T005-4225	4	0.05	2	42.3	4.2	25	0.3	●	●
ASIBR/L 04T015-4210	4	0.15	2	27.3	4.2	10	0.3	●	●

Small Tools

●: Stock available ▲: Stock available now but will be replaced in the future.

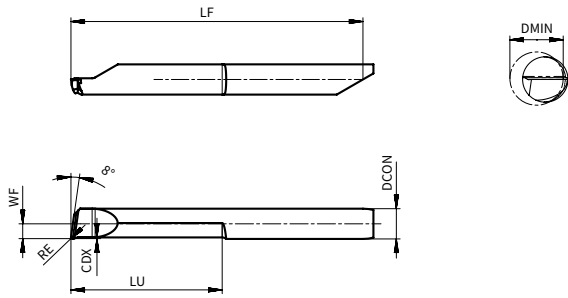
**ASIB T Type-Small Dia. Boring Tool**



Product code	Dimension (mm)							AP220U	
	DCON	RE	WF	LF	DMIN	LU	CDX	R	L
ASIBR/L 04T015-4215	4	0.15	2	32.3	4.2	15	0.3	●	●
ASIBR/L 04T015-4220	4	0.15	2	37.3	4.2	20	0.3	●	●
ASIBR/L 04T015-4225	4	0.15	2	42.3	4.2	25	0.3	●	●
ASIBR/L 05T005-5220	5	0.05	2.5	42.3	5.2	20	0.5	●	●
ASIBR/L 05T005-5230	5	0.05	2.5	52.3	5.2	30	0.5	●	●
ASIBR/L 05T020-5210	5	0.2	2.5	32.3	5.2	10	0.5	●	●
ASIBR/L 05T020-5220	5	0.2	2.5	42.3	5.2	20	0.5	●	●
ASIBR/L 05T020-5225	5	0.2	2.5	47.3	5.2	25	0.5	●	●
ASIBR/L 05T020-5230	5	0.2	2.5	52.3	5.2	30	0.5	●	●
ASIBR/L 05T020-5235	5	0.2	2.5	57.3	5.2	35	0.5	●	●
ASIBR/L 05T020-5240	5	0.2	2.5	62.3	5.2	40	0.5	●	●
ASIBR/L 06T005-6220	6	0.05	3	42.3	6.2	20	0.5	●	●
ASIBR/L 06T020-6215	6	0.2	3	37.3	6.2	15	0.5	●	●
ASIBR/L 06T020-6220	6	0.2	3	42.3	6.2	20	0.5	●	●
ASIBR/L 06T020-6225	6	0.2	3	47.3	6.2	25	0.5	●	●
ASIBR/L 06T020-6230	6	0.2	3	52.3	6.2	30	0.5	●	●
ASIBR/L 06T020-6235	6	0.2	3	57.3	6.2	35	0.5	●	●
ASIBR/L 06T020-6240	6	0.2	3	62.3	6.2	40	0.5	●	●

●: Stock available ▲: Stock available now but will be replaced in the future.

**ASIB E Type-Small Dia. Boring Tool**



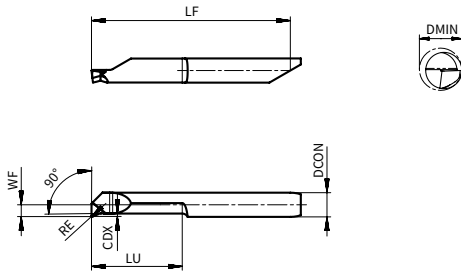
Product code	Dimension (mm)							AP220U	
	DCON	RE	WF	LF	DMIN	LU	CDX	R	L
<b>ASIBR 04E008-4230</b>	4	0.08	2	52.3	4.2	30	0.5	●	-
<b>ASIBR/L 04E015-4210</b>	4	0.15	2	27.3	4.2	10.3	0.5	●	●
<b>ASIBR/L 04E015-4220</b>	4	0.15	2	37.3	4.2	20.3	0.5	●	●
<b>ASIBR/L 04E015-4225</b>	4	0.15	2	42.3	4.2	25.3	0.5	●	●
<b>ASIBR/L 04E020-4215</b>	4	0.2	2	32.3	4.2	15.3	0.3	●	●
<b>ASIBR 05E008-5240</b>	5	0.08	2.5	67.3	5.2	40	0.5	●	-
<b>ASIBR/L 05E020-5210</b>	5	0.2	2.5	32.3	5.2	10.2	0.6	●	●
<b>ASIBR/L 05E020-5215</b>	5	0.2	2.5	37.3	5.2	15	0.5	●	●
<b>ASIBR/L 05E020-5220</b>	5	0.2	2.5	42.3	5.2	20.3	0.6	●	●
<b>ASIBR/L 05E020-5225</b>	5	0.2	2.5	47.3	5.2	25.4	0.5	●	●
<b>ASIBR/L 05E020-5230</b>	5	0.2	2.5	52.3	5.2	30.5	0.6	●	●
<b>ASIBR 06E008-6245</b>	6	0.08	3	72.3	6.2	45	0.5	●	-
<b>ASIBR/L 06E020-6215</b>	6	0.2	3	37.3	6.2	15.2	0.8	●	●
<b>ASIBR/L 06E020-6220</b>	6	0.2	3	42.3	6.2	20.3	0.8	●	●
<b>ASIBR/L 06E020-6225</b>	6	0.2	3	47.3	6.2	25.4	0.8	●	●
<b>ASIBR/L 06E020-6230</b>	6	0.2	3	52.3	6.2	30.5	0.5	●	●
<b>ASIBR/L 06E020-6240</b>	6	0.2	3	62.3	6.2	40	0.5	●	●

Small Tools

●: Stock available    ▲: Stock available now but will be replaced in the future.

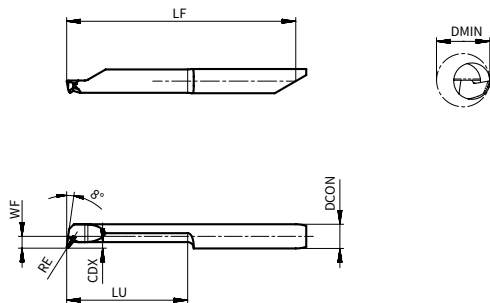


**ASIB S Type-Small Dia. Boring Tool**



Product code	Dimension (mm)							AP220U	
	DCON	RE	WF	LF	DMIN	LU	CDX	R	L
<b>ASIBR/L 04S015-3212</b>	4	0.15	1.5	29.3	3.2	12	0.2	●	●
<b>ASIBR/L 04S015-4215</b>	4	0.15	2	32.3	4.2	15	0.3	●	●
<b>ASIBR/L 05S020-5210</b>	5	0.2	2.5	32.3	5.2	10	0.5	●	●
<b>ASIBR/L 05S020-5215</b>	5	0.2	2.5	37.3	5.2	15	0.5	●	●
<b>ASIBR/L 05S020-5220</b>	5	0.2	2.5	42.3	5.2	20	0.5	●	●

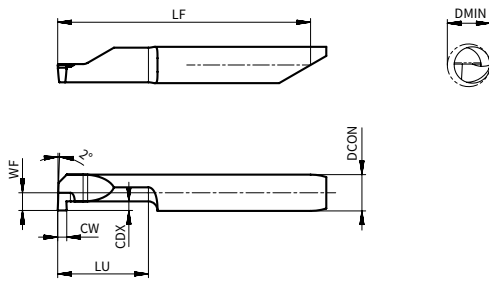
**ASIB V Type-Small Dia. Boring Tool**



Product code	Dimension (mm)							AP220U	
	DCON	RE	WF	LF	DMIN	LU	CDX	R	L
<b>ASIBR/L 04V015-4220</b>	4	0.15	2	37.3	4.2	20	0.8	●	●
<b>ASIBR/L 05V015-5225</b>	5	0.15	2.5	47.3	5.2	25	1	●	●
<b>ASIBR/L 06V015-6230</b>	6	0.15	3	52.3	6.2	30	1.8	●	●

●: Stock available    ▲: Stock available now but will be replaced in the future.

**ASIG S Type-Small Dia. Internal Grooving Tool**

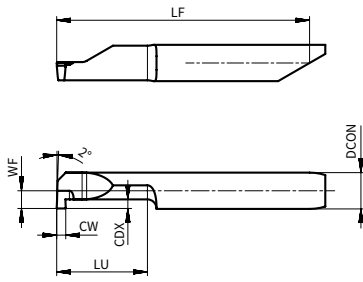


Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
ASIGR/L 04S050-2006	4	0.5	2	23.3	2	6	0.4	●	●
ASIGR/L 04S050-2009	4	0.5	2	26.3	2	9	0.4	●	●
ASIGR/L 04S050-2012	4	0.5	2	29.3	2	12	0.4	●	●
ASIGR/L 04S070-3008	4	0.7	1.4	25.3	3	8	0.6	●	●
ASIGR/L 04S070-3012	4	0.7	1.4	29.3	3	12	0.6	●	●
ASIGR/L 04S070-3016	4	0.7	1.4	33.3	3	16	0.6	●	●
ASIGR/L 04S100-4210	4	1	2	27.3	4.2	10	0.8	●	●
ASIGR/L 04S100-4215	4	1	2	32.3	4.2	15	0.8	●	●
ASIGR/L 04S100-4220	4	1	2	37.3	4.2	20	0.8	●	●
ASIGR/L 05S100-5210	5	1	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S100-5215	5	1	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S100-5220	5	1	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S100-5225	5	1	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S100-5230	5	1	2.5	52.3	5.2	30	1	●	●
ASIGR/L 05S100-5235	5	1	2.5	57.3	5.2	35	1	●	●
ASIGR/L 05S150-5210	5	1.5	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S150-5215	5	1.5	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S150-5220	5	1.5	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S150-5225	5	1.5	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S150-5230	5	1.5	2.5	52.3	5.2	30	1	●	●
ASIGR/L 05S150-5235	5	1.5	2.5	57.3	5.2	35	1	●	●
ASIGR/L 05S200-5210	5	2	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S200-5215	5	2	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S200-5220	5	2	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S200-5225	5	2	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S200-5230	5	2	2.5	52.3	5.2	30	1	●	●
ASIGR/L 06S100-6210	6	1	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S100-6215	6	1	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S100-6220	6	1	3	42.3	6.2	20	1.8	●	●
ASIGR/L 06S100-6225	6	1	3	47.3	6.2	25	1.8	●	●
ASIGR/L 06S100-6230	6	1	3	52.3	6.2	30	1.8	●	●
ASIGR/L 06S100-6235	6	1	3	57.3	6.2	35	1.8	●	●
ASIGR/L 06S100-6240	6	1	3	62.3	6.2	40	1.8	●	●
ASIGR/L 06S150-6210	6	1.5	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S150-6215	6	1.5	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S150-6220	6	1.5	3	42.3	6.2	20	1.8	●	●

●: Stock available ▲: Stock available now but will be replaced in the future.

Small Tools

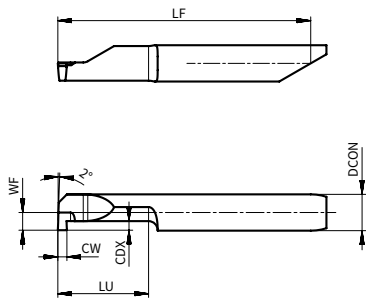
**ASIG S Type-Small Dia. Internal Grooving Tool**



Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
<b>ASIGR/L 06S150-6225</b>	6	1.5	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06S150-6230</b>	6	1.5	3	52.3	6.2	30	1.8	●	●
<b>ASIGR/L 06S150-6235</b>	6	1.5	3	57.3	6.2	35	1.8	●	●
<b>ASIGR/L 06S200-6210</b>	6	2	3	32.3	6.2	10	1.8	●	●
<b>ASIGR/L 06S200-6215</b>	6	2	3	37.3	6.2	15	1.8	●	●
<b>ASIGR/L 06S200-6220</b>	6	2	3	42.3	6.2	20	1.8	●	●
<b>ASIGR/L 06S200-6225</b>	6	2	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06S200-6230</b>	6	2	3	52.3	6.2	30	1.8	●	●

●: Stock available    ▲: Stock available now but will be replaced in the future.

**ASIG S Type-Small Dia. Internal Grooving Tool (For Circlip Groove)**

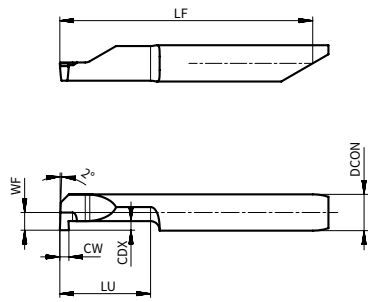


Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
ASIGR/L 04S078-4210	4	0.78	2	27.3	4.2	10	0.8	●	●
ASIGR/L 04S078-4215	4	0.78	2	32.3	4.2	15	0.8	●	●
ASIGR/L 04S078-4220	4	0.78	2	37.3	4.2	20	0.8	●	●
ASIGR/L 04S078-4225	4	0.78	2	42.3	4.2	25	0.8	●	●
ASIGR/L 05S078-5210	5	0.78	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S078-5215	5	0.78	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S078-5220	5	0.78	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S078-5225	5	0.78	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S078-5230	5	0.78	2.5	52.3	5.2	30	1	●	●
ASIGR/L 05S078-5235	5	0.78	2.5	57.3	5.2	35	1	●	●
ASIGR/L 05S117-5210	5	1.17	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S117-5215	5	1.17	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S117-5220	5	1.17	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S117-5225	5	1.17	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S117-5230	5	1.17	2.5	52.3	5.2	30	1	●	●
ASIGR/L 05S117-5235	5	1.17	2.5	57.3	5.2	35	1	●	●
ASIGR/L 05S157-5210	5	1.57	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S157-5215	5	1.57	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S157-5220	5	1.57	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S157-5225	5	1.57	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S157-5230	5	1.57	2.5	52.3	5.2	30	1	●	●
ASIGR/L 05S198-5210	5	1.98	2.5	32.3	5.2	10	1	●	●
ASIGR/L 05S198-5215	5	1.98	2.5	37.3	5.2	15	1	●	●
ASIGR/L 05S198-5220	5	1.98	2.5	42.3	5.2	20	1	●	●
ASIGR/L 05S198-5225	5	1.98	2.5	47.3	5.2	25	1	●	●
ASIGR/L 05S198-5230	5	1.98	2.5	52.3	5.2	30	1	●	●
ASIGR/L 06S078-6210	6	0.78	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S078-6215	6	0.78	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S078-6220	6	0.78	3	42.3	6.2	20	1.8	●	●
ASIGR/L 06S078-6225	6	0.78	3	47.3	6.2	25	1.8	●	●
ASIGR/L 06S078-6230	6	0.78	3	52.3	6.2	30	1.8	●	●
ASIGR/L 06S078-6235	6	0.78	3	57.3	6.2	35	1.8	●	●
ASIGR/L 06S117-6210	6	1.17	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S117-6215	6	1.17	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S117-6220	6	1.17	3	42.3	6.2	20	1.8	●	●
ASIGR/L 06S117-6225	6	1.17	3	47.3	6.2	25	1.8	●	●

●: Stock available ▲: Stock available now but will be replaced in the future.

Small Tools

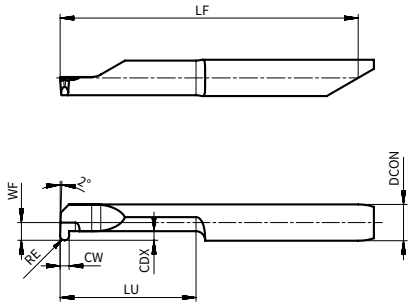
**ASIG S Type-Small Dia. Internal Grooving Tool (For Circlip Groove)**



Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
ASIGR/L 06S117-6230	6	1.17	3	52.3	6.2	30	1.8	●	●
ASIGR/L 06S117-6235	6	1.17	3	57.3	6.2	35	1.8	●	●
ASIGR/L 06S117-6240	6	1.17	3	62.3	6.2	40	1.8	●	●
ASIGR/L 06S157-6210	6	1.57	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S157-6215	6	1.57	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S157-6220	6	1.57	3	42.3	6.2	20	1.8	●	●
ASIGR/L 06S157-6225	6	1.57	3	47.3	6.2	25	1.8	●	●
ASIGR/L 06S157-6230	6	1.57	3	52.3	6.2	30	1.8	●	●
ASIGR/L 06S157-6235	6	1.57	3	57.3	6.2	35	1.8	●	●
ASIGR/L 06S157-6240	6	1.57	3	62.3	6.2	40	1.8	●	●
ASIGR/L 06S198-6210	6	1.98	3	32.3	6.2	10	1.8	●	●
ASIGR/L 06S198-6215	6	1.98	3	37.3	6.2	15	1.8	●	●
ASIGR/L 06S198-6225	6	1.98	3	47.3	6.2	25	1.8	●	●
ASIGR/L 06S198-6235	6	1.98	3	57.3	6.2	35	1.8	●	●

●: Stock available    ▲: Stock available now but will be replaced in the future.

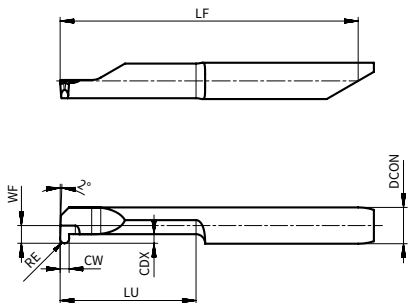
**ASIG R Type-Small Dia. Internal Grooving Tool**



Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
<b>ASIGR/L 04R100-4215</b>	4	1	2	32.3	4.2	15	0.8	●	●
<b>ASIGR/L 05R100-5220</b>	5	1	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 05R150-5220</b>	5	1.5	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 05R200-5220</b>	5	2	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 06R100-6225</b>	6	1	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06R150-6225</b>	6	1.5	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06R200-6225</b>	6	2	3	47.3	6.2	25	1.8	●	●

Small Tools

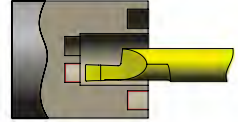
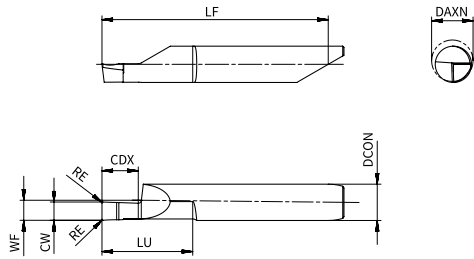
**ASIG R Type-Small Dia. Internal Grooving Tool (For Circlip Groove)**



Product code	Dimension (mm)							AP220U	
	DCON	CW	WF	LF	DMIN	LU	CDX	R	L
<b>ASIGR/L 04R117-4215</b>	4	1.17	2	32.3	4.2	15	0.8	●	●
<b>ASIGR/L 05R117-5220</b>	5	1.17	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 05R163-5220</b>	5	1.63	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 05R198-5220</b>	5	1.98	2.5	42.3	5.2	20	1	●	●
<b>ASIGR/L 06R117-6225</b>	6	1.17	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06R163-6225</b>	6	1.63	3	47.3	6.2	25	1.8	●	●
<b>ASIGR/L 06R198-6225</b>	6	1.98	3	47.3	6.2	25	1.8	●	●

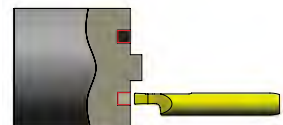
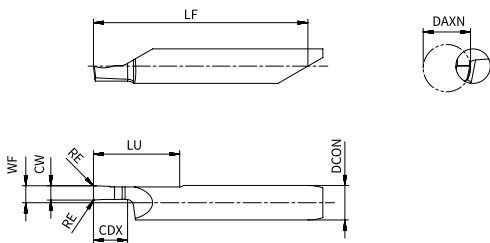
●: Stock available    ▲: Stock available now but will be replaced in the future.

**ASIF A Type - Small Dia. Internal Face Grooving (Inward Deviation)**



Product code	Dimension (mm)								AP220U	
	DCON	CW	WF	RE	LF	DAXN	LU	CDX	R	L
ASIFR/L 06A100-6215	6	1	3	0.15	37.3	6.2	15	2	●	●
ASIFR/L 06A150-6215	6	1.5	3	0.15	37.3	6.2	15	3	●	●
ASIFR/L 06A200-6215	6	2	3	0.15	37.3	6.2	15	4	●	●
ASIFR/L 06A250-6215	6	2.5	3	0.15	37.3	6.2	15	5	●	●
ASIFR/L 06A300-6215	6	3	3	0.15	37.3	6.2	15	6	●	●
ASIFR/L 08A200-8015	8	2	3	0.2	44.3	8	15	15	●	●
ASIFR/L 08A250-8010	8	2.5	3	0.2	39.3	8	10	10	●	●
ASIFR/L 08A300-8010	8	3	3	0.2	39.3	8	10	10	●	●
ASIFR/L 08A300-8015	8	3	3	0.2	44.3	8	15	15	●	●
ASIFR/L 08A400-8010	8	4	3	0.2	39.3	8	10	10	●	●
ASIFR/L 08A400-8015	8	4	3	0.2	44.3	8	15	15	●	●

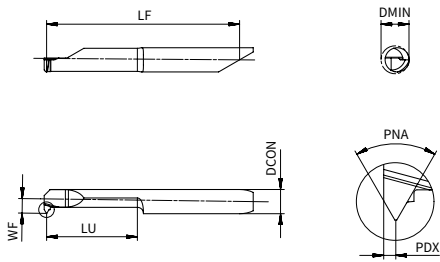
**ASIF B Type - Small Dia. Internal Face Grooving (Outward Deviation)**



Product code	Dimension (mm)								AP220U	
	DCON	CW	WF	RE	LF	DAXN	LU	CDX	R	L
ASIFR/L 06B100-6215	6	1	3	0.15	37.3	6.2	15	2	●	●
ASIFR/L 06B150-6215	6	1.5	3	0.15	37.3	6.2	15	3	●	●
ASIFR/L 06B200-6215	6	2	3	0.15	37.3	6.2	15	4	●	●
ASIFR/L 06B250-6215	6	2.5	3	0.15	37.3	6.2	15	5	●	●
ASIFR/L 06B300-6215	6	3	3	0.15	37.3	6.2	15	6	●	●

●: Stock available ▲: Stock available now but will be replaced in the future.

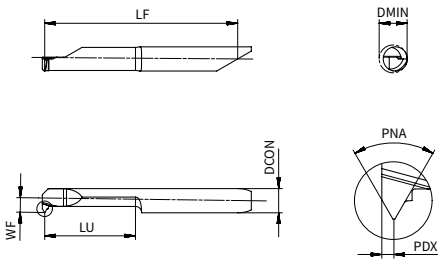
**ASIT V Type - Small Dia. Internal 60° Partial Profile Threading Tool**



Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
ASITR/L 04V050-4215	4	0.4	60°	2	32.7	0.5~0.7	4.2	15	●	●
ASITR 05V050-5215	5	0.4	60°	2.5	37.7	0.5~0.75	5.2	15	●	-
ASITR 05V070-5115	5	0.5	60°	2.4	37.8	0.7~1	5.1	15	●	-
ASITR/L 05V100-4815	5	0.6	60°	2.3	37.9	1~1.25	4.8	15	●	●
ASITR 06V100-6215	6	0.6	60°	3	37.9	1~1.25	6.2	15	●	-
ASITR/L 06V125-6215	6	0.8	60°	3	38.1	1.25~1.5	6.2	15	●	●
ASITR/L 06V150-6215	6	1	60°	3	38.3	1.5~1.75	6.2	15	●	●

Small Tools

**ASIT M Type - Small Dia. Internal ISO Threading Tool**

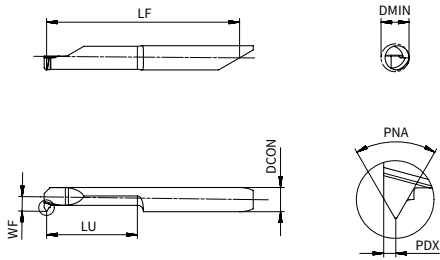


Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
ASITR 04M050-4215	4	0.4	60°	2	32.7	0.5	4.4	15	●	-
ASITR 04M070-4215	4	0.5	60°	1.9	32.8	0.7	4.4	15	●	-
ASITR 04M080-4015	4	0.5	60°	1.9	32.8	0.8	4	15	●	-
ASITR 05M050-5215	5	0.4	60°	2.5	37.7	0.5	5.2	15	●	-
ASITR 05M075-5115	5	0.5	60°	2.4	37.8	0.75	5.1	15	●	-
ASITR 05M100-4815	5	0.6	60°	2.3	37.9	1	4.8	15	●	-
ASITR 06M100-6215	6	0.6	60°	3	37.9	1	6.2	15	●	-
ASITR 06M125-6215	6	0.7	60°	3	38	1.25	6.2	15	●	-
ASITR 06M150-6215	6	0.8	60°	3	38.1	1.5	6.2	15	●	-
ASITR 06M175-6215	6	0.9	60°	3	38.2	1.75	6.2	15	●	-
ASITR 06M200-6215	6	1	60°	3	38.3	2	6.2	15	●	-

●: Stock available ▲: Stock available now but will be replaced in the future.

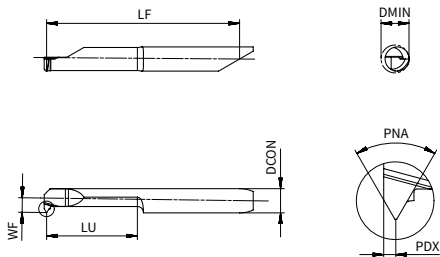


**ASIT U Type - Small Dia. Internal UN Threading Tool**



Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
<b>ASITR 04U032-4015</b>	4	0.6	60°	1.9	32.9	28	4	15	●	-
<b>ASITR 04U028-4015</b>	4	0.6	60°	1.9	32.9	32	4	15	●	-
<b>ASITR 04U024-4215</b>	4	0.7	60°	2	33	24	4.2	15	●	-
<b>ASITR 05U020-5215</b>	5	0.7	60°	2.5	38	20	5.2	15	●	-
<b>ASITR 06U018-6215</b>	6	0.6	60°	3	38.1	18	6.2	15	●	-
<b>ASITR 06U016-6215</b>	6	0.9	60°	3	38.2	16	6.2	15	●	-

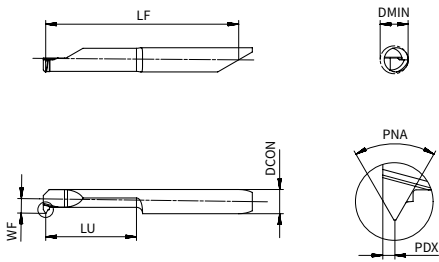
**ASIT W Type - Small Dia. Internal Worth Threading Tool**



Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
<b>ASITR 05W028-5215</b>	5	0.8	55°	2.5	38.1	28	5.2	15	●	-
<b>ASITR 05W026-5215</b>	5	0.8	55°	2.5	38.1	26	5.2	15	●	-
<b>ASITR 05W024-5215</b>	5	0.8	55°	2.5	38.1	24	5.2	15	●	-
<b>ASITR 06W028-6215</b>	6	0.8	55°	3	38.1	28	6.2	15	●	-
<b>ASITR 06W026-6215</b>	6	0.8	55°	3	38.1	26	6.2	15	●	-
<b>ASITR 06W024-6215</b>	6	0.8	55°	3	38.1	24	6.2	15	●	-
<b>ASITR 06W022-6215</b>	6	1	55°	3	38.3	22	6.2	15	●	-
<b>ASITR 06W020-6215</b>	6	1	55°	3	38.3	20	6.2	15	●	-
<b>ASITR/L 06W019-6215</b>	6	1	55°	3	38.3	19	6.2	15	●	●

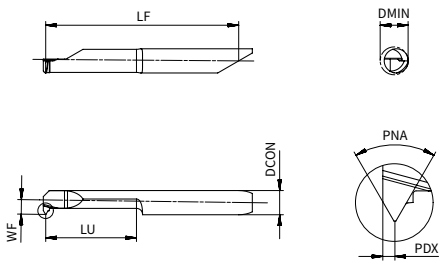
●: Stock available ▲: Stock available now but will be replaced in the future.

**ASIT N Type - Small Dia. Internal NPT Threading Tool**



Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
<b>ASITR 06N027-6215</b>	6	0.8	60°	3	38.1	27	6.2	15	●	-
<b>ASITR/L 06N018-6215</b>	6	1	60°	3	38.3	18	6.2	15	●	●

**ASIT T Type - Small Dia. Internal TR Threading Tool**







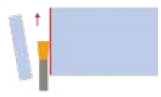
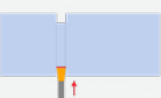
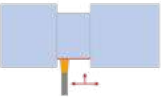



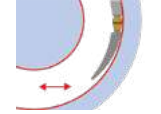

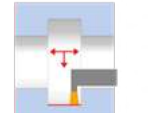


Product code	Dimension (mm)								AP220U	
	DCON	PDX	PNA	WF	LF	P	DMIN	LU	R	L
<b>ASITR 06T150-6220</b>	6	0.6	30°	3	38.2	1.5	6.2	20	●	-
<b>ASITR 06T200-6220</b>	6	0.8	30°	3	38.4	2	6.2	20	●	-

Small Tools







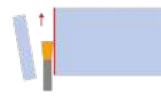
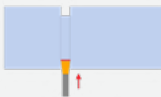
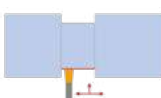



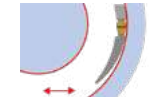

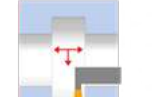
●: Stock available ▲: Stock available now but will be replaced in the future.

**Overview of Grooving Holders**

Holder  Application			External grooving					
			ASGHR/L	S-ASGHL	ATGHR/L	ATSER/L	ATSER/L-D	ATSER/L-SW
								
Page			P147	P148	P149	P151	P153	P154
External grooving	Parting off					●	●	●
	Grooving		●	●	●	●	●	●
	Turning					●	●	●
	Profiling					●	●	
	Under cut							
Face grooving	Grooving							
	Turning							
Internal machining	Grooving							
	Turning							

Marked: ● Best choice






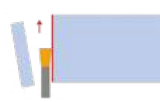

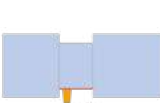

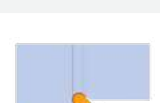


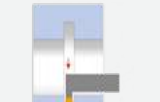

**Overview of Grooving Holders**

Holder Application			External grooving	Face grooving					
			AGUER/L	ATSFR/L	ATSFR/L-OB	AGSFR/L	AGPFR/L	ATPFR/L	
									
Page			P155	P156	P157	P159	P160	P161	
External grooving	Parting off								
	Grooving					●	●		
	Turning					○	○		
	Profiling								
	Under cut		●						
Face grooving	Grooving			●	●	●	●	●	●
	Turning			●	●	●	●	●	●
Internal machining	Grooving								
	Turning								

Marked: ● Best choice

Grooving

**Overview of Grooving Holders**

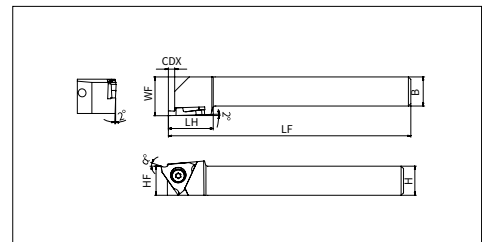
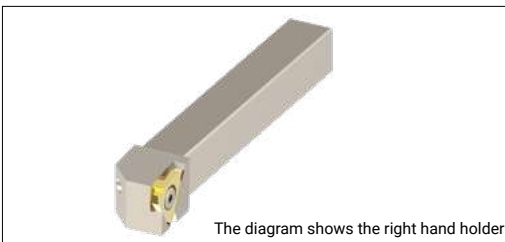
Holder Application			Internal machining				
			ATPIR/L	ATGIR/L	ATSIR/L	AGSIR/L	AGUIR/L
							
Page			P162	P163	P164	P165	P166
External grooving	Parting off						
	Grooving						
	Turning						
	Profiling						
	Under cut						●
Face grooving	Grooving				●	●	
	Turning				●	●	
Internal machining	Grooving		●	●			
	Turning		●				

Marked: ● Best choice

**ASGH Grooving Holder Denomination System**

<b>A</b> 1	<b>S</b> 2	<b>G</b> 3	<b>H</b> 4	<b>R</b> 5	<b>20</b> 6	<b>20</b> 7	<b>JX</b> 8	<b>-</b> -	<b>32</b> 9	<b>F</b> 10
1-Company Name ACHTECK		2-Matching Insert Type S S: For swiss machine		3-Application G Grooving		4-Holder Type H Holder		5-Hand of Tool L Left R Right		
6-Holder Height 20=20.0mm		7-Holder Width 20=20.0mm		8-Holder Length JX=120mm		9 -Matching Insert Size (IC) 32=9.525mm		10 -Shape of Holder Head F: Without dimple		

**ASGHR/L External shallow Grooving Holder for Swiss Lathe**



Product code		Dimension (mm)					Spare parts	
		H	B	LF	LH	CDX	Screw	Wrench
<b>ASGHR/L</b>	<b>1010JX-32F</b>	10	10	120	18.5	2.5	SP040070	FT-TP08
	<b>1212FX-32F</b>	12	12	85	18.5	2.5		
	<b>1212JX-32F</b>	12	12	120	18.5	2.5		
	<b>1616JX-32F</b>	16	16	120	18.5	2.5		
	<b>2020JX-32F</b>	16	16	120	18.5	2.5		
	<b>1010F-32</b>	10	10	80	18.5	2.5		
	<b>1212H-32</b>	12	12	100	18.5	2.5		
	<b>1616H-32</b>	16	16	100	18.5	2.5		
	<b>2020K-32</b>	20	20	125	20	2.5		
	<b>2525M-32</b>	25	25	150	20	2.5		

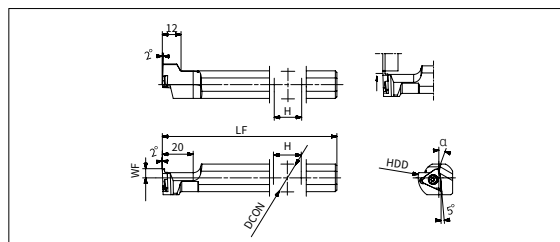
**Applicable Insert**

Application	Grooving
Insert shape	
Product code	
<b>ASGHR/L**</b>	ASG 32
Reference page	P172

**S...ASGH Sleeve Tool Holder Denomination System**

<b>S</b> 1	<b>20</b> 2	<b>JX</b> 3	<b>-</b> -	<b>A</b> 4	<b>S</b> 5	<b>G</b> 6	<b>H</b> 7	<b>L</b> 8	<b>32</b> 9
1-Holder Material S=Steel		2-Holder Shank Diameter 20=20mm		3-Holder Length JX=120mm		4-Company Name ACHTECK			
5-Matching Insert Type S Swiss		6-Application G Grooving		7-Holder Type H Holder		8-Hand of Tool L Left			
9-Matching Insert Size (IC) 32=9.525mm									

**S...ASGH External Grooving Sleeve Holder for Swiss Lathe**



Product code	Dimension (mm)					Spare parts	
	DCON	LF	WF	HDD	DMIN	Screw	Wrench
<b>S12F-ASGHL32</b>	12	80	6	11	27	SP040070	FT-TP08
<b>S14H-ASGHL32</b>	14	100		13			
<b>S15.0H-ASGHL32</b>	15.875			15.875			
<b>S16H-ASGHL32</b>	16	120		17.6			
<b>S19.0JX-ASGHL32</b>	19.05			18.6			
<b>S20JX-ASGHL32</b>	20			23.6			
<b>S22JX-ASGHL32</b>	22	120		23.6			
<b>S25JX-ASGHL32</b>	25		10				
<b>S25.0JX-ASGHL32</b>	25.4	120					

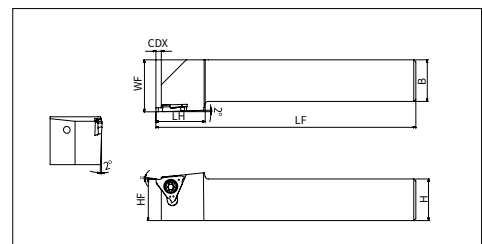
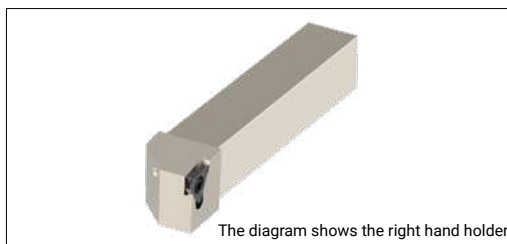
**Applicable Insert**

Application	Grooving
Insert shape	
Product code	<b>S...ASGHL**</b>
Reference page	ASG 32 P172

**ATGH Tool Holder Denomination System**

<b>A</b> 1	<b>T</b> 2	<b>G</b> 3	<b>H</b> 4	<b>R</b> 5	<b>25</b> 6	<b>25</b> 7	<b>M</b> 8	<b>43</b> 9	<b>-</b> -	<b>10</b> 10	<b>T25</b> 11
1-Company Name ACHTECK		2-Matching Insert Type T Triangular			3-Application G Grooving		4-Holder Type H Holder				
5-Hand of Tool L Left R Right		6-Holder Height 20=20.0mm 25=25.0mm			7-Holder Width 20=20.0mm 25=25.0mm		8-Holder Length K=125mm M=150mm				
9-Matching Insert Size (IC) 32=9.525mm			10-Matching Insert Maximum Width 10=1.0mm			11-Maximum Ap T25=2.5mm					

**ATGHR/L External Grooving Holder**



Product code		Dimensions (mm)						Spare parts	
		H	B	LF	LH	WF	CDX	Screw	Wrench
<b>ATGHR/L</b>	<b>2020K32-T25</b>	20	20	20	125	24	2.5	SP040085	FT-TP15
	<b>2525M32-T25</b>	25	25	25	150	24	2.5		
	<b>2020K43-10T40</b>	20	20	20	125	25.5	4.0	SP05008550	FT-TP20
	<b>2525M43-10T40</b>	25	25	25	150	25.5	4.0		
	<b>2020K43-20T45</b>	20	20	20	125	25.5	4.5		
	<b>2525M43-20T45</b>	25	25	25	150	25.5	4.5		
	<b>2020K43-20T55</b>	20	20	20	125	25.5	5.5		
	<b>2525M43-20T55</b>	25	25	25	150	25.5	5.5		
	<b>2020K43-30T55</b>	20	20	20	125	25.5	5.5		
<b>2525M43-30T55</b>	25	25	25	150	25.5	5.5			

**Applicable Insert**

Application	Grooving	Profiling
Insert shape		
Product code		
<b>ATGHR/L** 32</b>	ATG 32	ATG 32
<b>ATGHR/L** 43</b>	ATG 43	ATG 43
Reference page	P173	P174



**Grooving Holder Denomination System**

<b>A</b>	<b>G</b>	<b>U</b>	<b>E</b>	<b>R</b>	<b>0750</b>	<b>-</b>	<b>4</b>	<b>T0315</b>	<b>-</b>	<b>40</b>	<b>-</b>	<b>80</b>	<b>-</b>	<b>SW</b>
1	2	3	4	5	6	-	8	9	-	10	-	11	-	12
					<b>16</b>									
					7									

1-Company name
ACHTECK

2-Application	
<b>G</b>	Grooving
<b>T</b>	Turning

3- Shape of holder head
S: Straight-180°
U: Under cut-45°
P: Perpendicular-90°

4-Machining type
E: External
I: Internal
F: Facing

5-Hand of tool	
<b>L</b>	Left hand
<b>R</b>	Right hand

6-Holder diameter
0375=0.375
0750=0.750
1000=1.000

7-Holder Height/width
08=0.375
12=0.750
16=1.000

8-Insert width
2=0.079
3=0.118
4=0.157

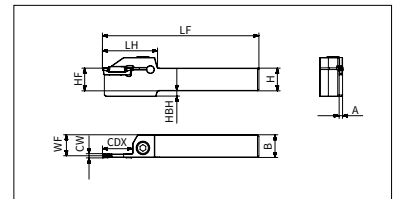
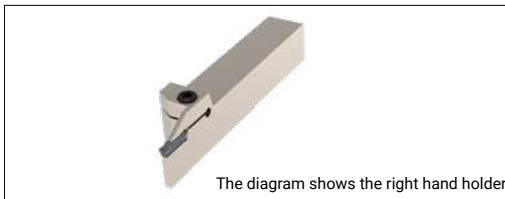
9-Ap
T0315=Max 0.315

10-Minimum cutting diameter
40=1.575

11-Maximum cutting diameter
80=3.150

12-Special code
SW: For swiss machine
OB: Outside bulge holders
C: With internal coolant
D: Reinforced holders










**ATSER/L External Turning and Grooving**



Product code		Dimension (inch)									Spare parts	
		H	B	HF	HBH	A	LF	LH	WF	CDX	Screw	Wrench
ATSER/L	10-2T0315	0.625	0.625	0.625	0.157	0.071	4.500	1.299	0.590	0.315	SH050160	LT-H4
	10-2T0472	0.625	0.625	0.625	0.157	0.071	4.500	1.260	0.590	0.472		
	10-2T0669	0.625	0.625	0.625	0.157	0.071	4.500	1.457	0.590	0.669		
	12-2T0315	0.750	0.750	0.750	0.000	0.071	5.000	1.299	0.715	0.315	SH050200	
	12-2T0472	0.750	0.750	0.750	0.000	0.071	5.000	1.260	0.715	0.472		
	12-2T0669	0.750	0.750	0.750	0.000	0.071	5.000	1.457	0.715	0.669		
	16-2T0315	1.000	1.000	1.000	0.000	0.071	6.000	1.299	0.965	0.315	SH050250	
	16-2T0472	1.000	1.000	1.000	0.000	0.071	6.000	1.260	0.965	0.472		
	16-2T0669	1.000	1.000	1.000	0.000	0.071	6.000	1.457	0.965	0.669		
	10-3T0354	0.625	0.625	0.625	0.157	0.094	4.500	1.260	0.578	0.354	SH050160	
	10-3T0472	0.625	0.625	0.625	0.157	0.094	4.500	1.260	0.578	0.472		
	10-3T0787	0.625	0.625	0.625	0.157	0.094	4.500	1.496	0.578	0.787		
	12-3T0354	0.750	0.750	0.750	0.000	0.094	5.000	1.260	0.703	0.354	SH050200	
	12-3T0472	0.750	0.750	0.750	0.000	0.094	5.000	1.260	0.703	0.472		
	12-3T0787	0.750	0.750	0.750	0.000	0.094	5.000	1.496	0.703	0.787		
	16-3T0354	1.000	1.000	1.000	0.000	0.094	6.000	1.260	0.953	0.354	SH050250	
	16-3T0472	1.000	1.000	1.000	0.000	0.094	6.000	1.260	0.953	0.472		
	16-3T0787	1.000	1.000	1.000	0.000	0.094	6.000	1.496	0.953	0.787		
	16-3T0984	1.000	1.000	1.000	0.000	0.094	6.000	1.772	0.953	0.984		
	10-4T0394	0.625	0.625	0.625	0.157	0.132	4.500	1.260	0.559	0.394	SH060160	
	10-4T0591	0.625	0.625	0.625	0.157	0.132	4.500	1.299	0.559	0.591		
	10-4T0984	0.625	0.625	0.625	0.157	0.132	4.500	1.772	0.559	0.984		
	12-4T0984	0.750	0.750	0.750	0.000	0.132	5.000	1.260	0.684	0.394	SH060200	
	12-4T0591	0.750	0.750	0.750	0.000	0.132	5.000	1.299	0.684	0.591		
	12-4T0984	0.750	0.750	0.750	0.000	0.132	5.000	1.772	0.684	0.984		
	16-4T0394	1.000	1.000	1.000	0.000	0.132	6.000	1.260	0.934	0.394	SH060250	
	16-4T0591	1.000	1.000	1.000	0.000	0.132	6.000	1.299	0.934	0.591		
	16-4T0787	1.000	1.000	1.000	0.000	0.132	6.000	1.575	0.934	0.787		
	16-4T0984	1.000	1.000	1.000	0.000	0.132	6.000	1.772	0.934	0.984		
	12-5T0472	0.750	0.750	0.750	0.000	0.171	5.000	1.457	0.664	0.472	SH060200	
	12-5T0787	0.750	0.750	0.750	0.000	0.171	5.000	1.457	0.664	0.787		
	16-5T0472	1.000	1.000	1.000	0.000	0.171	6.000	1.457	0.914	0.472		
	16-5T0787	1.000	1.000	1.000	0.000	0.171	6.000	1.457	0.914	0.787		
	16-5T1260	1.000	1.000	1.000	0.000	0.171	6.000	2.205	0.914	1.260	SH060250	
	20-5T0472	1.250	1.250	1.250	0.000	0.171	7.000	1.457	1.164	0.472		
	20-5T0787	1.250	1.250	1.250	0.000	0.171	7.000	1.535	1.164	0.787		
	20-5T0984	1.250	1.250	1.250	0.000	0.171	7.000	1.811	1.164	0.984		
	20-5T1260	1.250	1.250	1.250	0.000	0.171	7.000	2.205	1.164	1.260		
	12-6T0472	0.750	0.750	0.750	0.000	0.211	5.000	1.457	0.645	0.472	SH080200	
	12-6T0787	0.750	0.750	0.750	0.000	0.211	5.000	1.614	0.645	0.787		
16-6T0472	1.000	1.000	1.000	0.276	0.211	6.000	1.457	0.895	0.472			
16-6T0787	1.000	1.000	1.000	0.276	0.211	6.000	1.614	0.895	0.787			
16-6T1260	1.000	1.000	1.000	0.276	0.211	6.000	2.205	0.895	1.260	SH080250		
20-6T0472	1.250	1.250	1.250	0.000	0.211	7.000	1.457	1.145	0.472			
20-6T0787	1.250	1.250	1.250	0.000	0.211	7.000	1.614	1.145	0.787			
20-6T0984	1.250	1.250	1.250	0.000	0.211	7.000	1.811	1.145	0.984			
20-6T1260	1.250	1.250	1.250	0.000	0.211	7.000	2.205	1.145	1.260			
16-8T0630	1.000	1.000	1.000	0.276	0.244	6.000	1.850	0.878	0.630	SH080250		
16-8T0984	1.000	1.000	1.000	0.276	0.244	6.000	1.850	0.878	0.984			
16-8T1417	1.000	1.000	1.000	0.276	0.244	6.000	2.362	0.878	1.417			
20-8T0984	1.250	1.250	1.250	0.000	0.244	7.000	1.850	1.128	0.984			
20-8T1417	1.250	1.250	1.250	0.000	0.244	7.000	2.362	1.128	1.417			

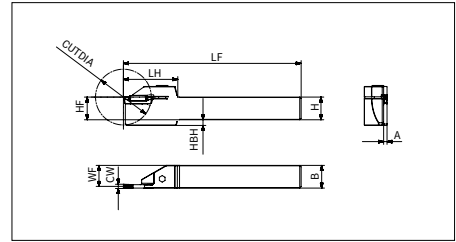
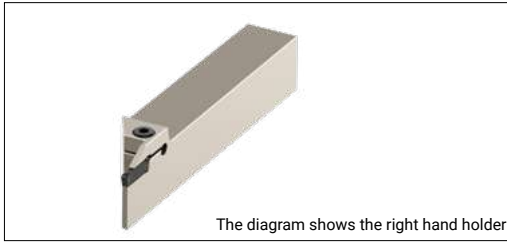
Grooving

**Applicable Insert**

Application		Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground Profiling	Ground
Insert shape	Insert Size (mm)	CS 	CM 	CH 	GS 	TS 	TM 	RM 	RA 	G 
Product code										
<b>ATSER/L** 2T</b>	2	ACD 202 ACD 302	ACD/ACS 202 ..... ACD/ACS 603	ACD/ACS 202 ..... ACD/ACS 603	ATD 300E ..... ATD 714E	ATD 203 ..... ATD 808	ATD 304 ..... ATD 812	ATD 210 ..... ATD 840	ATD 315 ..... ATD 840	ATD 100E ..... ATD 800E
<b>ATSER/L** 3T</b>	3									
<b>ATSER/L** 4T</b>	4									
<b>ATSER/L** 5T</b>	5									
<b>ATSER/L** 6T</b>	6									
<b>ATSER/L** 8T</b>	8									
Reference page		P175	P176	P177	P178	P179	P179	P180	P180	P182

Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining

**ATSER/L-D Reinforced External Turning and Grooving Holder**



Product code		Dimension (inch)										Spare parts	
		H	B	HF	HBH	A	LF	LH	WF	CDX	CUTDIA	Screw	Wrench
ATSER/L	06-2T0591-D40	0.375	0.375	0.375	0.236	0.071	5.000	1.260	0.340	0.591	1.575	SH050160	LT-H4
	08-2T0591-D40	0.500	0.500	0.500	0.157	0.071	5.000	1.260	0.465	0.591	1.575		
	10-2T0787-D45	0.625	0.625	0.625	0.157	0.071	5.000	1.496	0.590	0.787	1.772		
	12-2T0787-D45	0.750	0.750	0.750	0.000	0.071	5.000	1.496	0.715	0.787	1.772		
	16-2T0787-D45	1.000	1.000	1.000	0.000	0.071	6.000	1.496	0.965	0.787	1.772		
	08-3T0591-D40	0.500	0.500	0.500	0.157	0.094	5.000	1.260	0.453	0.591	1.575		
	10-3T0787-D45	0.625	0.625	0.625	0.157	0.094	5.000	1.496	0.578	0.787	1.772		
	12-3T0787-D45	0.750	0.750	0.750	0.000	0.094	5.000	1.496	0.703	0.787	1.772		
	16-3T0787-D45	1.000	1.000	1.000	0.000	0.094	6.000	1.496	0.953	0.787	1.772		
	16-3T0984-D60	1.000	1.000	1.000	0.276	0.094	6.000	1.693	0.953	0.984	2.362	SH050250	

Grooving

**Applicable Insert**

Application	Insert shape	Insert Size (mm)	Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground Profiling	Ground
Product code			CS	CM	CH	GS	TS	TM	RM	RA	G
ATSER/L** 2T-D	2	ACD 202 ACD 302	ACD 202 ACD 302	ACD/ACS 202 ..... ACD/ACS 302	ACD/ACS 202 ..... ACD/ACS 302	ATD 300E ..... ATD 318E	ATD 203 ..... ATD 303	ATD 304	ATD 210 ..... ATD 315	ATD 315	ATD 100E ..... ATD 300E
ATSER/L** 3T-D											
Reference page			P175	P176	P177	P178	P179	P179	P180	P180	P182

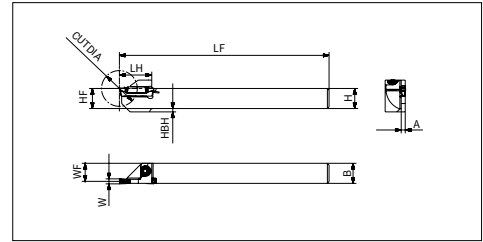
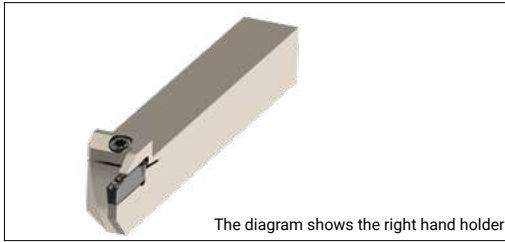
Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining

The max. cutting depth vs workpiece diameter

Product code	Workpiece diameter	CDX (inch)																	
		≤0.314	0.354	0.394	0.433	0.472	0.512	0.551	0.591	0.669	0.709	0.748	0.787	0.827	0.866	0.906	0.945	0.984	
ATSER/L	CUTDIA	06-2T0591-D40	∞	∞	∞	10.591	4.724	3.110	2.323	1.575	-	-	-	-	-	-	-	-	-
		08-2T0591-D40	∞	∞	∞	10.591	4.724	3.110	2.323	1.575	-	-	-	-	-	-	-	-	-
		10-2T0787-D45	∞	∞	∞	∞	∞	17.008	7.598	4.921	2.992	2.520	2.244	1.772	-	-	-	-	-
		12-2T0787-D45	∞	∞	∞	∞	∞	17.008	7.598	4.921	2.992	2.520	2.244	1.772	-	-	-	-	-
		16-2T0787-D45	∞	57.795	13.346	7.598	5.354	4.173	3.425	2.953	2.362	2.205	2.047	1.772	-	-	-	-	-
		08-3T0591-D40	∞	∞	∞	10.591	4.724	3.110	2.323	1.575	-	-	-	-	-	-	-	-	-
		10-3T0787-D45	∞	∞	∞	∞	∞	17.008	7.598	4.921	2.992	2.520	2.244	1.772	-	-	-	-	-
		12-3T0787-D45	∞	∞	∞	∞	∞	17.008	7.598	4.921	2.992	2.520	2.244	1.772	-	-	-	-	-
		16-3T0787-D45	∞	57.795	13.346	7.598	5.354	4.173	3.425	2.953	2.362	2.205	2.047	1.772	-	-	-	-	-
		16-3T0984-D60	∞	∞	∞	∞	∞	∞	∞	∞	16.457	9.331	6.575	5.118	4.213	3.583	3.189	2.874	2.362

"∞": The diameter is infinite

**ATSER/L-SW External Turning and Grooving Holder for Swiss Lathe**

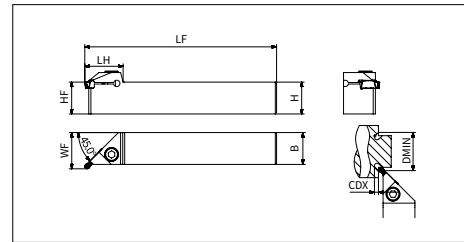
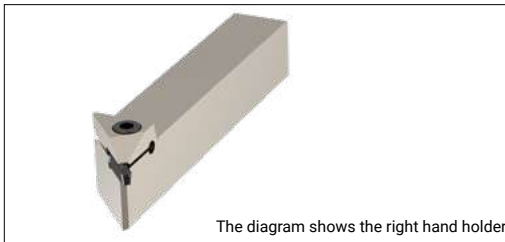


Product code		Dimension (inch)									Spare parts	
		H	B	HF	HBH	A	LF	LH	WF	CUTDIA	Screw	Wrench
ATSER/L	06-2D20-SW	0.375	0.375	0.375	0.079	0.071	5.000	0.748	0.340	0.787	SP040125	LT-TP15
	08-2D24-SW	0.500	0.500	0.500	0.079	0.071	5.000	0.748	0.465	0.945		
	10-2D32-SW	0.625	0.625	0.625	0.000	0.071	5.000	0.945	0.590	1.260		
	08-3D24-SW	0.500	0.500	0.500	0.079	0.094	5.000	0.748	0.453	0.945		
	10-3D32-SW	0.625	0.625	0.625	0.000	0.094	5.000	0.945	0.578	1.260		
	10-3D38-SW	0.625	0.625	0.625	0.000	0.094	5.000	1.063	0.578	1.496		
	12-3D45-SW	0.750	0.750	0.750	0.000	0.094	5.000	1.220	0.703	1.772		

**Applicable Insert**

Application		Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground Profiling	Ground
Insert shape	Insert Size (mm)	CS	CM	CH	GS	TS	TM	RM	RA	G
Product code										
ATSER/L** 2D-SW	2	ACD 202	ACD/ACS 202	ACD/ACS 202	ATD 300E	ATD 203	ATD 304	ATD 210	ATD 315	ATD 100E
ATSER/L** 3D-SW	3	ACD 302	ACD/ACS 302	ACD/ACS 302	ATD 318E	ATD 303		ATD 315		ATD 300E
Reference page		P175	P176	P177	P178	P179	P179	P180	P180	P182

**AGUER/L External Undercutting Holder**



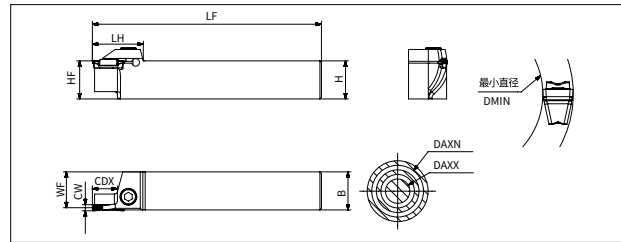
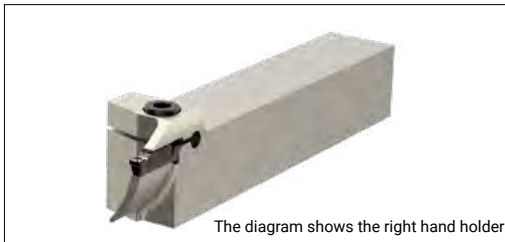
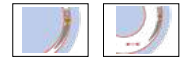
Product code		Insert Size (mm)	Dimension (inch)								Spare parts	
			H	B	HF	LF	LH	WF	CDX	DMIN	Screw	Wrench
<b>AGUER/L</b>	<b>10-3</b>	2, 3	0.625	0.625	0.625	4.500	1.189	0.767	0.118	2.362	SH050160	LT-H4
	<b>10-4</b>	4	0.625	0.625	0.625	4.500	1.189	0.775	0.118	2.165	SH060160	
	<b>12-3</b>	2, 3	0.750	0.750	0.750	5.000	1.189	0.892	0.118	2.362	SH050200	LT-H5
	<b>12-4</b>	4	0.750	0.750	0.750	5.000	1.189	0.900	0.118	2.165	SH060200	
	<b>16-3</b>	2, 3	1.000	1.000	1.000	6.000	1.189	1.142	0.118	2.362	SH050250	LT-H4
	<b>16-4</b>	4	1.000	1.000	1.000	6.000	1.189	1.150	0.118	2.165	SH060250	LT-H5
	<b>16-6</b>	5, 6	1.000	1.000	1.000	6.000	1.323	1.165	0.138	2.165	SH060250	LT-H5

Grooving

**Applicable Insert**

Application	Profiling	Ground Profiling	Ground
Insert shape	RM	RA	G
Product code			
<b>AGUER/L**</b>	ATD 210 ..... ATD 630	ATD 315 ..... ATD 630	ATD 100E ..... ATD 600E
Reference page	P180	P180	P182

**ATSFR/L Face Grooving and Turning Holder**



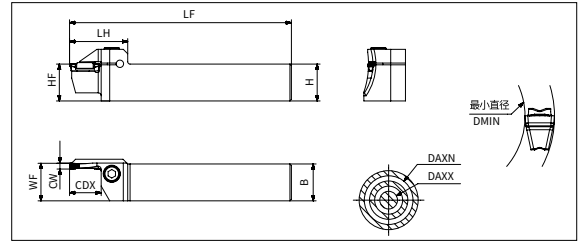
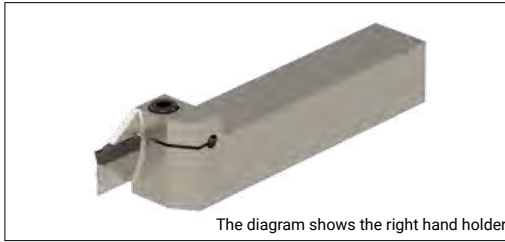
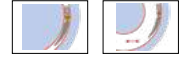
Product code		Dimension (inch)									Spare parts	
		H	B	HF	LF	LH	WF	CDX	DAXX	DAXN	Screw	Wrench
ATSFR/L	16-3T0394-35-45	1.000	1.000	1.000	6.000	1.260	0.959	0.394	1.378	1.772	SH050250	LT-H4
	16-3T0394-40-55	1.000	1.000	1.000	6.000	1.260	0.959	0.394	1.575	2.165		
	16-3T0591-45-65	1.000	1.000	1.000	6.000	1.260	0.959	0.591	1.772	2.559		
	16-3T0591-55-85	1.000	1.000	1.000	6.000	1.260	0.959	0.591	2.165	3.346		
	16-4T0591-35-50	1.000	1.000	1.000	6.000	1.260	0.943	0.591	1.378	1.969	SH060250	LT-H5
	16-4T0591-45-65	1.000	1.000	1.000	6.000	1.260	0.943	0.591	1.772	2.559		
	16-4T0591-55-85	1.000	1.000	1.000	6.000	1.260	0.943	0.591	2.165	3.346		
	16-5T0787-50-80	1.000	1.000	1.000	6.000	1.575	0.923	0.787	1.969	3.150	SH080250	LT-H6
	16-5T0787-70-110	1.000	1.000	1.000	6.000	1.575	0.923	0.787	2.756	4.331		
	16-5T0787-100-150	1.000	1.000	1.000	6.000	1.575	0.923	0.787	3.937	5.906		
	16-5T0787-140-200	1.000	1.000	1.000	6.000	1.575	0.923	0.787	5.512	7.874		
	16-6T0787-50-85	1.000	1.000	1.000	6.000	1.575	0.904	0.787	1.969	3.346		
16-6T0787-75-150	1.000	1.000	1.000	6.000	1.575	0.904	0.787	2.953	5.906			
16-6T0787-140-250	1.000	1.000	1.000	6.000	1.575	0.904	0.787	5.512	9.843			
16-6T0787-200-000	1.000	1.000	1.000	6.000	1.575	0.904	0.787	7.874	∞			

**Applicable Insert**

Application		Insert Size (mm)	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
Product code	Insert shape Minimum machining diameter DMIN(inch)		CM	CH	GS	TS	TM	RM	G
			ATSFR/L 16-3T	3	3.110	3.110	2.323	1.378	1.378
	ATSFR/L 16-4T	4	1.654	1.654	1.654	1.378	1.378	1.654	1.654
	ATSFR/L 16-5T	5	1.969	1.969	1.969	1.969	1.969	1.969	1.969
	ATSFR/L 16-6T	6	1.969	1.969	1.969	1.969	1.969	1.969	1.969
Reference page			P176	P177	P178	P179	P179	P180	P182

Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining  
 Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

**ATSFR/L-OB Face Grooving and Turning Holder (Outside Bluge Type)**










Product code		Dimension (inch)									Spare parts	
		H	B	HF	LF	LH	WF	CDX	DAXX	DAXN	Screw	Wrench
ATSFR/L	12-3T0394-30-40-OB	0.750	0.750	0.750	5.500	1.220	0.671	0.394	1.181	1.575	SH060200	LT-H5
	12-3T0394-35-50-OB	0.750	0.750	0.750	5.500	1.220	0.671	0.394	1.378	1.969		
	12-3T0591-45-70-OB	0.750	0.750	0.750	5.500	1.378	0.671	0.591	1.772	2.756		
	12-3T0591-65-100-OB	0.750	0.750	0.750	5.500	1.378	0.671	0.591	2.559	3.937		
	12-4T0394-20-30-OB	0.750	0.750	0.750	5.500	1.220	0.656	0.394	0.787	1.181		
	12-4T0394-25-35-OB	0.750	0.750	0.750	5.500	1.220	0.656	0.394	0.984	1.378		
	12-4T0630-30-45-OB	0.750	0.750	0.750	5.500	1.417	0.656	0.630	1.181	1.772		
	12-4T0630-35-50-OB	0.750	0.750	0.750	5.500	1.417	0.656	0.630	1.378	1.969		
	12-4T0630-45-70-OB	0.750	0.750	0.750	5.500	1.417	0.656	0.630	1.772	2.756		
	12-4T0630-65-120-OB	0.750	0.750	0.750	5.500	1.417	0.656	0.630	2.559	4.724		
	12-4T0630-115-200-OB	0.750	0.750	0.750	5.500	1.417	0.656	0.630	4.528	7.874		
	16-3T0394-35-50-OB	1.000	1.000	1.000	6.000	1.496	0.974	0.394	1.378	1.969	SH060250	LT-H5
	16-3T0591-45-70-OB	1.000	1.000	1.000	6.000	1.496	0.974	0.591	1.772	2.756		
	16-3T0591-65-100-OB	1.000	1.000	1.000	6.000	1.496	0.974	0.591	2.559	3.937		
	16-4T0394-25-35-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.394	0.984	1.378		
	16-4T0787-30-45-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	1.181	1.772		
	16-4T0787-35-50-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	1.378	1.969		
	16-4T0787-45-70-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	1.772	2.756		
	16-4T0787-65-125-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	2.559	4.921		
	16-4T0787-115-200-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	4.528	7.874		
	16-4T0787-190-000-OB	1.000	1.000	1.000	6.000	1.535	0.959	0.787	7.480	∞		
	16-5T0984-50-80-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.984	1.969	3.150	SH080250	LT-H6
	16-5T0591-50-80-OB	1.000	1.000	1.000	6.000	1.614	0.939	0.591	1.969	3.150		
	16-5T0984-70-110-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.984	2.756	4.331		
	16-5T0591-70-110-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.591	2.756	4.331		
	16-5T0984-100-150-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.984	3.937	5.906		
	16-5T0984-140-200-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.984	5.512	7.874		
	16-5T0984-190-000-OB	1.000	1.000	1.000	6.000	1.929	0.939	0.984	7.480	∞		
	16-6T0984-50-70-OB	1.000	1.000	1.000	6.000	1.929	0.919	0.984	1.969	2.756		
	16-6T0984-60-100-OB	1.000	1.000	1.000	6.000	1.929	0.919	0.984	2.362	3.937		
16-6T0984-90-180-OB	1.000	1.000	1.000	6.000	1.929	0.919	0.984	3.543	7.087			
16-6T0984-170-400-OB	1.000	1.000	1.000	6.000	1.929	0.919	0.984	6.693	15.748			
16-6T0984-390-000-OB	1.000	1.000	1.000	6.000	1.929	0.919	0.984	15.354	∞			

Grooving

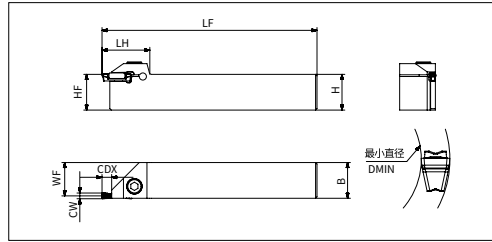
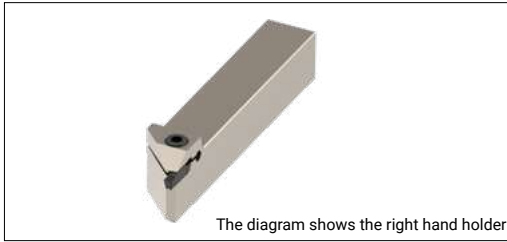


**Applicable Insert**

Application		Insert Size (mm)	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
Product code	Insert shape Minimum machining diameter DMIN (inch)		CM 	CH 	GS 	TS 	TM 	RM 	G 
<b>ATSFR/L 12-3T...OB</b>		3	3.110	3.110	2.323	1.181	1.181	2.323	2.323
<b>ATSFR/L 12-4T...OB</b>		4	1.654	1.654	1.654	0.866	0.866	1.654	1.654
<b>ATSFR/L 16-3T...OB</b>		3	3.110	3.110	2.323	1.378	1.378	2.323	2.323
<b>ATSFR/L 16-4T...OB</b>		4	1.654	1.654	1.654	0.984	0.984	1.654	1.654
<b>ATSFR/L 16-5T...OB</b>		5	1.969	1.969	1.969	1.969	1.969	1.969	1.969
<b>ATSFR/L 16-6T...OB</b>		6	1.969	1.969	1.969	1.969	1.969	1.969	1.969
Reference page			P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

**AGSFR/L External & Face Grooving and Turning Holder**



Product code	Insert Size (mm)	Dimension (inch)								Spare parts	
		H	B	HF	LF	LH	WF	CDX	Screw	Wrench	
<b>AGSFR/L</b>	<b>10-4</b>	2,3,4	0.625	0.625	0.625	4.500	1.299	0.558	0.181	SH060160	LT-H5
	<b>12-4</b>	2,3,4	0.750	0.750	0.750	5.000	1.299	0.683	0.181	SH060200	
	<b>12-6</b>	5,6	0.750	0.750	0.750	5.000	1.457	0.644	0.181	SH060250	
	<b>16-4</b>	2,3,4	1.000	1.000	1.000	6.000	1.299	0.933	0.181	SH060250	
	<b>16-6</b>	5,6	1.000	1.000	1.000	6.000	1.457	0.894	0.181	SH060250	

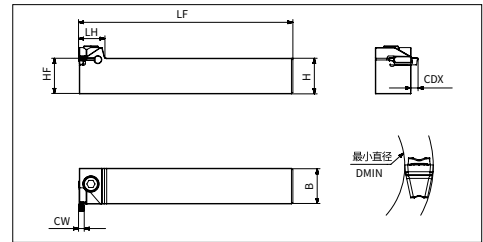
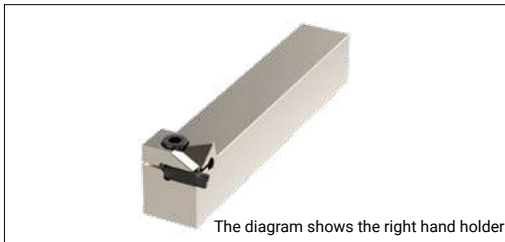
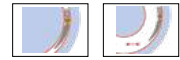
**Applicable Insert**

Application	Insert Shape	Insert Size (mm)	Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
			CS	CM	CH	GS	TS	TM	RM	G
<b>AGSFR/L**</b>	Minimum machining diameter DMIN (inch)	2	7.717	7.717	7.717	3.937	7.717	-	7.717	3.937
		3	3.110	3.110	3.110	2.323	0.949	0.949	2.323	2.323
		4	-	1.654	1.654	1.654	0.866	0.866	1.654	1.654
		5	-	1.969	1.969	1.575	0.787	0.787	1.575	1.575
		6	-	1.890	1.890	1.496	0.709	0.709	1.496	1.496
Reference page			P175	P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. - : Indicates that the insert is not a choice
3. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

Grooving

**AGPFR/L Face Grooving and Turning Holder**



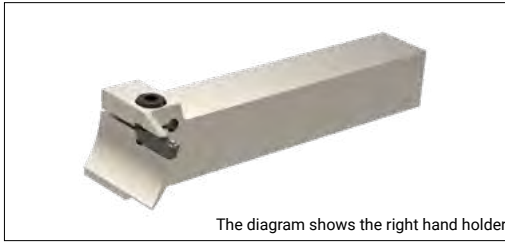
Product code		Insert Size (mm)	Dimension (inch)						Spare parts	
			H	B	HF	LF	LH	CDX	Screw	Wrench
AGPFR/L	12-4	2,3,4	0.750	0.750	0.750	5.000	0.709	0.181	SH060200	LT-H5
	16-4	2,3,4	1.000	1.000	1.000	6.000	0.709	0.181	SH060250	LT-H5
	16-6	5,6	1.000	1.000	1.000	6.000	0.866	0.181		

**Applicable Insert**

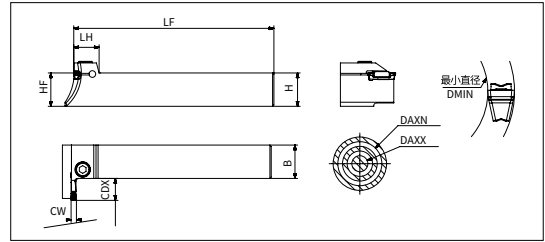
Application	Insert shape	Insert Size (mm)	Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
			CS	CM	CH	GS	TS	TM	RM	G
AGPFR/L**	Minimum machining diameter DMIN (inch)	2	7.717	7.717	7.717	3.937	7.717	-	7.717	3.937
		3	3.110	3.110	3.110	2.323	0.949	0.949	2.323	2.323
		4	-	1.654	1.654	1.654	0.866	0.866	1.654	1.654
		5	-	1.969	1.969	1.575	0.787	0.787	1.575	1.575
		6	-	1.890	1.890	1.496	0.709	0.709	1.496	1.496
Reference page			P175	P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. — : Indicates that the insert is not a choice
3. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

ATPFR/L Face Grooving and Turning Holder



The diagram shows the right hand holder



Product code		Insert Size (mm)	Dimension (inch)							Spare parts	
			H	B	LF	LH	CDX	DAXX	DAXN	Screw	Wrench
ATPFR/L	16-3T0394-30-40	3	1.000	1.000	6.000	0.709	0.394	1.181	1.575	SH050250	LT-H4
	16-3T0394-35-50	3	1.000	1.000	6.000	0.709	0.394	1.378	1.969		
	16-3T0591-45-60	3	1.000	1.000	6.000	0.709	0.591	1.772	2.362		
	16-3T0591-55-85	3	1.000	1.000	6.000	0.709	0.591	2.165	3.346		
	16-4T0472-25-40	4	1.000	1.000	6.000	0.728	0.472	0.984	1.575	SH060250	LT-H5
	16-4T0591-35-50	4	1.000	1.000	6.000	0.728	0.591	1.378	1.969		
	16-4T0591-45-60	4	1.000	1.000	6.000	0.728	0.591	1.772	2.362		
	16-4T0591-55-85	4	1.000	1.000	6.000	0.728	0.591	2.165	3.346		
	16-5T0787-50-80	5	1.000	1.000	6.000	0.866	0.787	1.969	3.150	SH080250	LT-H6
	16-5T0787-70-110	5	1.000	1.000	6.000	0.866	0.787	2.756	4.331		
	16-5T0787-100-150	5	1.000	1.000	6.000	0.866	0.787	3.937	5.906		
	16-5T0787-140-200	5	1.000	1.000	6.000	0.866	0.787	5.512	7.874		
	16-5T0787-190-000	5	1.000	1.000	6.000	0.866	0.787	7.480	∞		
	16-6T0787-50-85	6	1.000	1.000	6.000	0.866	0.787	1.969	3.346	SH080250	LT-H6
	16-6T0787-75-150	6	1.000	1.000	6.000	0.866	0.787	2.953	5.906		
	16-6T0787-140-250	6	1.000	1.000	6.000	0.866	0.787	5.512	9.843		
16-6T0787-240-000	6	1.000	1.000	6.000	0.866	0.787	9.449	∞			

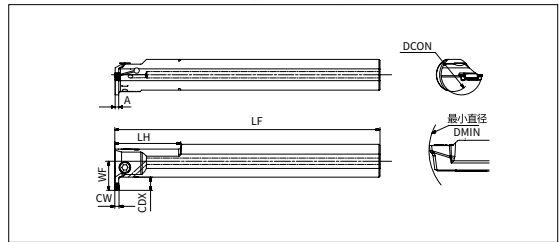
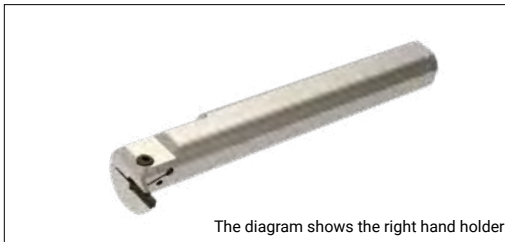
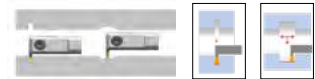
Grooving

Applicable Insert

Application	Insert shape	Insert Size (mm)	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
			CM	CH	GS	TS	TM	RM	G
Product code	Minimum machining diameter DMIN (inch)								
ATPFR/L 16-3T	3	3.110	3.110	2.323	1.378	1.378	2.323	2.323	
ATPFR/L 16-4T	4	1.654	1.654	1.654	1.378	1.378	1.654	1.654	
ATPFR/L 16-5T	5	1.969	1.969	1.969	1.969	1.969	1.969	1.969	
ATPFR/L 16-6T	6	1.969	1.969	1.969	1.969	1.969	1.969	1.969	
Reference page			P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

ATPIR/L Internal Turning, Grooving and Profiling Holder



Product code		Dimension (inch)							Spare parts	
		DCON	LF	LH	WF	A	CDX	DMIN	Screw	Wrench
ATPIR/L	0750-2T0236-25-C	0.750	6.500	1.575	0.622	0.071	0.236	0.984	SH050120	LT-H4
	1000-2T0197-25-C	1.000	8.000	1.575	0.689	0.071	0.197	0.984	SH050160	
	1250-2T0197-30-C	1.250	10.000	1.575	0.780	0.071	0.197	1.181	SH050120	
	0750-3T0236-25-C	0.750	6.500	1.575	0.622	0.094	0.236	0.984	SH050160	
	1000-3T0197-25-C	1.000	8.000	1.575	0.689	0.094	0.197	0.984	SH050160	
	1000-3T0315-32-C	1.000	8.000	1.575	0.846	0.094	0.315	1.260	SH050160	
	1250-3T0197-30-C	1.250	10.000	2.362	0.780	0.094	0.197	1.181	SH050160	
	1250-3T0394-40-C	1.250	8.000	2.362	1.063	0.094	0.394	1.575	SH050160	
	1500-3T0472-50-C	1.500	12.000	2.559	1.299	0.094	0.472	1.969	SH050160	
	0750-4T0236-25-C	0.750	6.500	1.575	0.622	0.132	0.236	0.984	SH050120	
	1000-4T0197-25-C	1.000	8.000	1.575	0.689	0.132	0.197	0.984	SH050160	
	1000-4T0315-32-C	1.000	8.000	1.575	0.846	0.132	0.315	1.260	SH050160	
	1250-4T0197-30-C	1.250	10.000	2.362	0.819	0.132	0.197	1.181	SH060160	LT-H5
	1250-4T0394-40-C	1.250	10.000	2.362	1.063	0.132	0.394	1.575	SH060160	
	1500-4T0472-50-C	1.500	12.000	2.559	1.299	0.132	0.472	1.969	SH060160	
	2000-4T0551-60-C	2.000	14.000	2.756	1.575	0.132	0.551	2.362	SH060200	
	1000-5T0197-31-C	1.000	8.000	1.575	0.681	0.171	0.197	1.220	SH060160	
	1250-5T0197-31-C	1.250	10.000	2.362	0.819	0.171	0.197	1.220	SH060200	
	1250-5T0394-40-C	1.250	10.000	2.362	1.063	0.171	0.394	1.575	SH060200	
	1500-5T0472-50-C	1.500	12.000	2.559	1.299	0.171	0.472	1.969	SH060250	
2000-5T0551-60-C	2.000	14.000	2.756	1.575	0.171	0.551	2.362	SH060250		
1250-6T0197-31-C	1.250	10.000	2.362	0.819	0.211	0.197	1.220	SH060200		
1250-6T0394-40-C	1.250	10.000	2.362	1.063	0.211	0.394	1.575	SH060200		
1500-6T0472-50-C	1.500	12.000	2.559	1.299	0.211	0.472	1.969	SH060250		
2000-6T0551-60-C	2.000	14.000	2.756	1.575	0.211	0.551	2.362	SH060250		
1250-8T0236-38-C	1.250	10.000	2.362	0.839	0.244	0.236	1.496	SH060200		
1500-8T0236-42-C	1.500	12.000	2.559	1.016	0.244	0.236	1.654	SH060250		

Applicable Insert

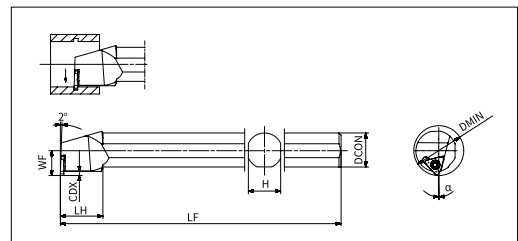
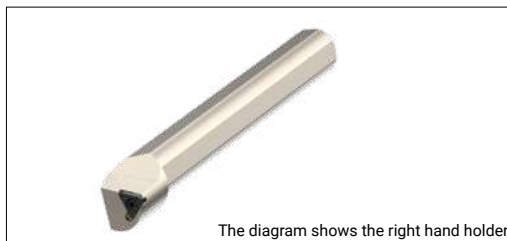
Application	Insert shape	Insert Size (mm)	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
			CM	CH	GS	TS	TM	RM	G
ATPIR/L **-2T		2	-	-	0.984	0.984	0.984	-	0.984
ATPIR/L **-3T		3	1.969	1.969	0.984	0.984	0.984	0.984	0.984
ATPIR/L **-4T		4	1.969	1.969	0.984	0.984	0.984	0.984	0.984
ATPIR/L **-5T		5	1.969	1.969	1.221	1.221	1.221	1.221	1.221
ATPIR/L **-6T		6	1.969	1.969	1.221	1.221	1.221	1.221	1.221
ATPIR/L **-8T		8	-	-	-	1.496	1.496	1.496	1.496
Reference page			P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. - : Indicates that the insert is not a choice
3. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

**ATGI Tool Holder Denomination System**

<b>A</b> 1	<b>T</b> 2	<b>G</b> 3	<b>I</b> 4	<b>R</b> 5	<b>1000</b> 6	<b>S</b> 7	<b>43</b> 8	<b>-</b> -	<b>40</b> 9	<b>T30</b> 10
1-Company Name ACHTECK		2-Matching Insert Type T Triangular		3-Application G Grooving		4-Holder Type I Internal machining		5-Hand of Tool L Left R Right		
6-Holder Size 25=0.984inch 32=1.260inch		7-Holder Length R:8.661inch S:9.843inch		8-Matching Insert Size (IC) 43=0.500inch		9-Minimum Internal Machining Diameter 40=1.575inch		10-Maximum Ap T30=0.118inch		

**ATGIR/L Internal Grooving Holder**



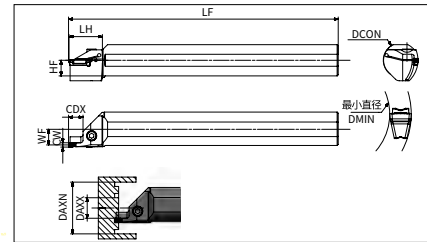
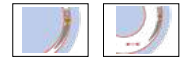
Product code		Dimension (inch)						Spare parts	
		DMIN	DCON	LF	LH	WF	CDX	Screw	Wrench
<b>ATGIR/L</b>	1000R32-35T0110	1.378	1.000	8.661	1.181	0.689	0.110	SP040085	FT-TP15
	1250S43-40T0118	1.575	1.250	9.843	1.181	0.906	0.118	SP05008550	FT-TP20

**Applicable Insert**

Application	Grooving	Profiling
Insert shape		
Product code		
<b>ATGIR/L** 32</b>	ATG 32	ATG 32
<b>ATGIR/L** 43</b>	ATG 43	ATG 43
Reference page	P173	P174

Grooving

**ATSIR/L Internal Facing Grooving and Turning Holder**



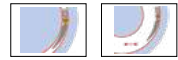
Product code		Dimension (inch)								Spare parts	
		DCON	LF	LH	WF	A	CDX	DMIN	DMAX	Screw	Wrench
ATSIR/L	1000-3T0472-35-45-C	1.000	8.000	1.220	0.453	0.453	0.472	1.378	1.772	SH050160	LT-H4
	1000-3T0472-40-60-C	1.000	8.000	1.220	0.453	0.453	0.472	1.575	2.362		
	1000-3T0472-55-90-C	1.000	8.000	1.220	0.453	0.453	0.472	2.165	3.543		
	1000-3T0472-80-150-C	1.000	8.000	1.220	0.453	0.453	0.472	3.150	5.906		
	1000-4T0472-20-35-C	1.000	8.000	1.220	0.433	0.453	0.472	0.787	1.378		
	1000-4T0472-28-45-C	1.000	8.000	1.220	0.433	0.453	0.472	1.102	1.772		
	1000-4T0472-35-55-C	1.000	8.000	1.220	0.433	0.453	0.472	1.378	2.165		
	1250-4T0472-45-70-C	1.250	10.000	1.220	0.571	0.591	0.472	1.772	2.756		
	1250-4T0472-60-100-C	1.250	10.000	1.220	0.571	0.591	0.472	2.362	3.937		
	1250-4T0472-90-180-C	1.250	10.000	1.220	0.571	0.591	0.472	3.543	7.087		

**Applicable Insert**

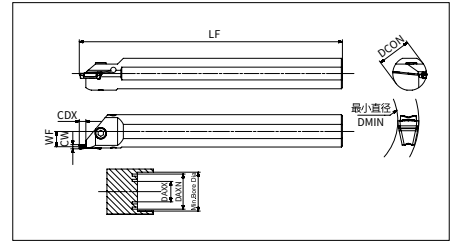
Application	Insert shape	Insert Size (mm)	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
			CM	CH	GS	TS	TM	RM	G
Product code	Minimum machining diameter DMIN(inch)								
ATSIR/L **3T	3	3.15	3.15	2.323	1.378	1.378	2.323	2.323	
ATSIR/L **4T	4	1.654	1.654	1.654	0.866	0.866	1.654	1.654	
Reference page			P176	P177	P175	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

**AGSIR/L Internal Facing Grooving and Turning Holder**



The diagram shows the right hand holder



Product code		Insert Size(mm)	Dimension (inch)					Spare parts	
			DCON	LF	LH	WF	CDX	Screw	Wrench
<b>AGSIR/L</b>	<b>1000-4T0228-C</b>	2,3,4	1.000	8.000	0.484	0.429	0.228	SH060160	LT-H5
	<b>1000-6T0228-C</b>	5,6	1.000	8.000	0.484	0.406	0.228		
	<b>1250-4T0228-C</b>	2,3,4	1.250	10.000	0.622	0.571	0.228		
	<b>1250-6T0228-C</b>	5,6	1.250	10.000	0.622	0.543	0.228		

**Applicable Insert**

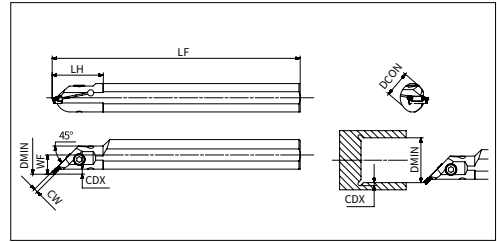
Application	Insert Shape	Low feed rate	Low-Medium feed rate	Medium to high feed rate	Finishing	Low feed rate	Medium feed rate	Profiling	Ground
		CS	CM	CH	GS	TS	TM	RM	G
<b>AGSIR/L**</b>	2	7.717	7.717	7.717	3.937	7.717	-	7.717	3.937
	3	3.110	3.110	3.110	2.323	0.949	0.949	2.323	2.323
	4	-	1.654	1.654	1.654	0.866	0.866	1.654	1.654
	5	-	1.969	1.969	1.575	0.787	0.787	1.575	1.575
	6	-	1.890	1.890	1.496	0.709	0.709	1.496	1.496
Reference page		P175	P176	P177	P178	P179	P179	P180	P182

1. Inserts\*: ACD/ACS series are only applicable to grooving and parting off machining
2. - : Indicates that the insert is not a choice
3. Having selected the range of tool holder, please check the minimum face grooving machining diameter of the selected insert

Grooving



**AGUIR/L Internal Undercutting holder**



Product code		Insert Size(mm)	Dimension (inch)						Spare parts	
			DCON	LF	LH	WF	CDX	DIMN	Screw	Wrench
<b>AGUIR/L</b>	<b>0750-3T0118-45</b>	3	0.750	6.000	1.575	0.484	0.118	1.772	SH050120	LT-H4
	<b>0750-4T0118-45</b>	4	0.750	6.000	1.575	0.484	0.118	1.772		
	<b>0750-3T0118-45</b>	3	1.000	8.000	1.575	0.567	0.118	1.772	SH050160	
	<b>1000-4T0118-45</b>	4	1.000	8.000	1.575	0.567	0.118	1.772		
	<b>1000-6T0118-45</b>	5,6	1.000	8.000	1.575	0.567	0.118	1.772	SH060160	

**Applicable Insert**

Application	Profiling	Ground Profiling	Ground
Insert shape	RM	RA	G
Product code			
<b>AGUER/L**</b>	ATD 315 ..... ATD 630	ATD 315 ..... ATD 630	ATD 300E ..... ATD 600E
Reference page	P180	P180	P182

## Grooving Grade Description

### Grade for Parting off and Grooving

**P**

Steel, cast steel, long chipping malleable cast iron.

#### Basic grade

AP301U P25(P15-P35)

PVD coated grade, suitable for steel, stainless steel and heat resistant alloy grooving. High strength and wear resistant submicron carbide substrate with nanostructured PVD coating. Good coating adhesion, high wear resistance.

AC230P P20(P10-P30)

CVD coated grade. It's mainly used in steel, grey cast iron and nodular cast iron grooving, turning and profiling under high cutting speed. High toughness and wear resistant substrate combined with nano-structured coating offered good wear resistance, coating adhesion, machining stability and longer tool life.

#### Supplemental grade

AP330M P35(P25-P45)

Brand new PVD coated grade. Suitable for stainless steel and steel finish, semi-finish and rough grooving. It's the 1st choice for stainless steel turning, and good for steel turning as well. It has high thermal stability, wear resistance, and excellent thermal crack resistance. Enriched cobalt superfine grain substrate offers high hardness and good anti shock capability which reduces the edge chipping problem.

**M**

Austenitic/ferrite/martensite, cast iron, manganese steel, alloyed cast iron, malleable cast iron, free cutting iron

#### Basic grade

AP330M M35(M25-M45)

Brand new PVD coated grade. Suitable for stainless steel and steel finish, semi-finish and rough grooving. It's the 1st choice for stainless steel turning, and good for steel turning as well. It has high thermal stability, wear resistance, and excellent thermal crack resistance. Enriched cobalt superfine grain substrate offers high hardness and good anti shock capability which reduces the edge chipping problem.

#### Supplemental grade

AP301U M20(M15-M35)

PVD coated grade. Suitable for steel, stainless steel and heat resistant alloy grooving. High strength and wear resistant submicron carbide substrate with nanostructured PVD coating. Good coating adhesion, high wear resistance.

**N**

Non-ferrous metal

#### Basic grade

AW100K N15 (N05-N25)

Uncoated ultra-fine grain substrate, specially treated cutting edge, suitable for aluminum alloy grooving.

# ACHTTECK


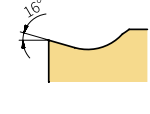
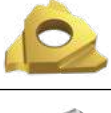
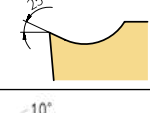

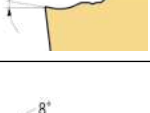
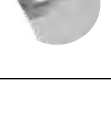




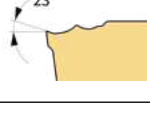

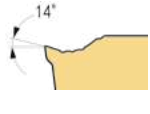
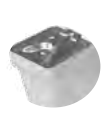
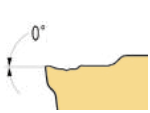

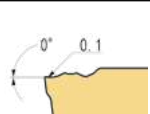

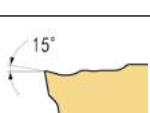

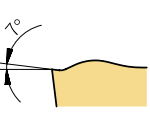
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THE EXPERTS OF DIFFICULT MACHINING



Grooving Inserts

Insert Geometry Introduction

Geometry	Insert	Shape of cutting edge	Description	Geometry Width (mm)										
				External Machining					Face grooving		Internal Machining			
				Grooving	Parting off	Turning	Profiling	Under cut	Grooving	Turning	Grooving	Turning		
ATG			<ul style="list-style-type: none"> <li>● Use precision insert</li> <li>● Positive insert reduces the vibration</li> <li>● 3 edge design, with good expansibility.</li> </ul>	0.33	-	-	0.5 1.0 1.5 2.0 3.0 4.0	-	-	-	0.33	-		
				4.8							4.8			
ASG			<ul style="list-style-type: none"> <li>● Use precision insert</li> <li>● Big rake angle and sharp edge design obtain good surface quality.</li> <li>● 3 edge design</li> </ul>	0.8	-	-	-	-	-	-	0.8	-		
				2.5							2.5			
CS			<ul style="list-style-type: none"> <li>● Used in parting off &amp; grooving stainless steel, heat resistant alloy and low carbon steel</li> <li>● For low feed rate application</li> </ul>	2.0	2.0	-	-	-	-	3.0	-	3.0	-	
				3.0	3.0							3.0		
CM			<ul style="list-style-type: none"> <li>● Used in parting off &amp; grooving low carbon steel and stainless steel</li> <li>● For sticky material, pipe fitting, thin-walled part parting off, low cutting force</li> <li>● For low to medium feed rate</li> </ul>	2.0	2.0	-	-	-	-	3.0	-	3.0	-	
				3.0	3.0							4.0		
				4.0	4.0							5.0		
				5.0	5.0							6.0		
				6.0	6.0							6.0		
CH			<ul style="list-style-type: none"> <li>● Used in parting off and grooving steel, alloy steel and stainless steel with high hardness and toughness.</li> <li>● Strong cutting edge</li> <li>● For parting off and grooving at medium to high feed rate</li> </ul>	2.0	2.0	-	-	-	-	3.0	-	3.0	-	
				3.0	3.0							4.0		
				4.0	4.0							5.0		
				5.0	5.0							6.0		
				6.0	6.0							8.0		
GS			<ul style="list-style-type: none"> <li>● Excellent chip breaking, suitable for grooving and finish turning.</li> <li>● Geometry for finish machining, low cutting force, low feed, excellent surface quality.</li> <li>● Ground insert, better precision control and positioning repeatability.</li> </ul>	2.0	2.0	2.0	-	-	-	3.0	3.0	2.0	2.0	
				7.14	7.14	7.14						6.0	6.0	7.14
TS			<ul style="list-style-type: none"> <li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li> <li>● Excellent chip control</li> <li>● For low and medium feed rate.</li> </ul>	2.0	2.0	2.0	-	-	-	3.0	3.0	2.0	2.0	
				3.0	3.0	3.0						3.0	3.0	3.0
				4.0	4.0	4.0						4.0	4.0	4.0
				5.0	5.0	5.0						5.0	5.0	5.0
				6.0	6.0	6.0						6.0	6.0	6.0
TM			<ul style="list-style-type: none"> <li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li> <li>● Stronger cutting edge design</li> <li>● For medium feed rate</li> </ul>	2.0	2.0	2.0	-	-	-	3.0	3.0	2.0	2.0	
				3.0	3.0	3.0						3.0	3.0	3.0
				4.0	4.0	4.0						4.0	4.0	4.0
				5.0	5.0	5.0						5.0	5.0	5.0
				6.0	6.0	6.0						6.0	6.0	6.0
RM			<ul style="list-style-type: none"> <li>● External grooving, turning, profiling</li> <li>● Medium feed rate</li> </ul>	2.0	-	2.0	2.0	2.0	-	-	3.0	3.0	2.0	2.0
				3.0		3.0	3.0	3.0					3.0	
				4.0		4.0	4.0	4.0					4.0	
				5.0		5.0	5.0	5.0					5.0	
				6.0		6.0	6.0	6.0					6.0	
RA			<ul style="list-style-type: none"> <li>● For turning and profiling aluminum alloy</li> <li>● High positive rake angle and sharp cutting edge</li> <li>● Ground inserts with high precision</li> </ul>	3.0	-	3.0	3.0	3.0	-	-	3.0	3.0	3.0	3.0
				4.0		4.0	4.0	4.0					4.0	
				5.0		5.0	5.0	5.0					5.0	
				6.0		6.0	6.0	6.0					6.0	
				8.0		8.0	8.0	8.0					8.0	
Precision ground			<ul style="list-style-type: none"> <li>● Ground insert with high precision, better precision control</li> <li>● Complete product offering</li> <li>● Good surface quality</li> </ul>	1.0	-	2.22	3.0	3.0	-	-	3.0	3.0	2.22	2.22
				4.8		4.8	4.8	4.8						
				5.0		5.0	5.0	5.0						
				8.0		8.0	6.0	6.0			6.0	6.0	8.0	8.0

Grooving

**Grade Application Guide**

Materials				Turning grade application			
ISO	Material classification	Tensile strength (N/mm <sup>2</sup> )	Hardness (HB)	PVD coated		CVD coated	Uncoated
				AP301U	AP330M	AC230P	AW100K
P	Unalloyed steel	<600	<180	●	●	●	-
		<950	<280	●	●	●	-
	Alloyed steel	700-950	200-280	●	●	●	-
		950-1200	280-355	●	●	●	-
		1200-1400	355-415	●	●	●	-
M	Duplex stainless steel	778	230	●	●	-	-
	Austenitic stainless steel	675	200	●	●	-	-
	Precipitation-hardening stainless steel	1013	300	●	●	-	-
K	Grey cast iron	700	220	◐	-	●	-
	Nodular cast iron	880	260	◐	-	●	-
	Malleable cast iron	800	250	◐	-	●	-
N	Aluminum	260	75	-	-	-	●
	Aluminum alloy	447	130	-	-	-	●
S	Fe-based alloy	943	280	-	-	-	-
	Co-based alloy	1076	320	-	-	-	-
	Ni-based alloy	1177	350	-	-	-	-
	Ti-alloy	1262	370	-	-	-	-
H	Hardened steel	-	50-60HRC	-	-	-	-
	Chilled cast iron	-	55HRC	-	-	-	-

- 1st choice
- ◐ 2nd choice
- Inapplicable

**Triangular Shallow Grooving Insert Denomination System**

<b>A</b>	<b>T</b>	<b>G</b>	<b>32</b>	<b>R/L</b>	<b>050</b>	<b>T12</b>	<b>-</b>	<b>R005</b>
1	2	3	4	5	6	7	-	8

1-Company Name	
ACHTECK	

2-Insert Type	
T	Triangular
S	Only applied to Swiss machine

3-Application	
G	Grooving

4-Insert IC Size	
32=0.375 inch	
43=0.5 inch	

5-Hand of Tool	
L	Left
R	Right

6-Insert Width	
050=0.020 inch	

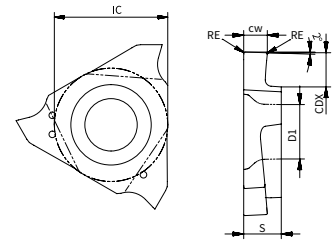
7-Max Ap	
T12=0.047 inch	

8-Insert Corner	
R005=0.020 inch	


**Shallow Grooving Series**

ASG: Applied to external shallow grooving for Swiss machine

Product code	IC	S	D1
ASG 32-	0.375	0.125	0.181



The diagram shows the right hand insert

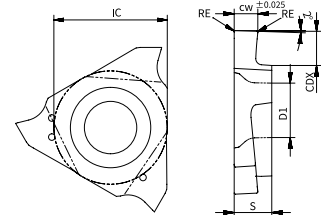
Inserts	Product code	Cutting parameter		Dimensions		Machining conditions							
		Grooving f (mm/rev)	CDX	CW	RE	P		M		K		N	
						AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	<b>ASG 32R/L033T08-R005</b>	0.01-0.05	0.8	0.33	0.05		●		●			●	
	<b>ASG 32R/L050T12-R005</b>	0.01-0.05	1.2	0.50	0.05		●		●			●	
	<b>ASG 32R/L075T20-R010</b>	0.02-0.07	2.0	0.75	0.10		●		●			●	
	<b>ASG 32R/L095T20-R010</b>	0.02-0.07	2.0	0.95	0.10		●		●			●	
	<b>ASG 32R/L100T20-R010</b>	0.03-0.08	2.0	1.00	0.10		●		●			●	
	<b>ASG 32R/L120T20-R010</b>	0.03-0.08	2.0	1.20	0.10		●		●			●	
	<b>ASG 32R/L125T20-R010</b>	0.03-0.08	2.0	1.25	0.10		●		●			●	
	<b>ASG 32R/L140T20-R010</b>	0.03-0.08	2.0	1.40	0.10		●		●			●	
	<b>ASG 32R/L145T20-R010</b>	0.03-0.08	2.0	1.45	0.10		●		●			●	
	<b>ASG 32R/L150T20-R010</b>	0.03-0.08	2.0	1.50	0.10		●		●			●	
	<b>ASG 32R/L175T20-R010</b>	0.03-0.08	2.0	1.75	0.10		●		●			●	
	<b>ASG 32R/L200T25-R010</b>	0.03-0.08	2.5	2.00	0.10		●		●			●	
	<b>ASG 32R/L250T25-R010</b>	0.03-0.08	2.5	2.50	0.10		●		●			●	

●: Stock available ▲: Stock available now but will be replaced in the future.


Shallow Grooving Series

ATG: Applied to external and internal shallow grooving

Product code	IC	S	D1
ATG 32-	0.375	0.125	0.173
ATG 43-	0.500	0.187	0.217
ATG 43R/L480	0.500	0.197	0.217



The diagram shows the right hand insert

Inserts	Product code	Machining conditions				● Good condition    ⬤ General condition ✖ Bad condition							
		Cutting parameter		Dimensions		P		M		K		N	
		Grooving f (inch/rev)	CDX	CW (mm)	RE	AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	*ATG 32R/L033T08-R005	0.001-0.003	0.031	0.33	0.002		●		●			●	
	ATG 32R/L050T12-R005	0.001-0.003	0.047	0.50	0.002		●		●			●	
	ATG 32R/L075T20-R005	0.001-0.003	0.079	0.75	0.002		●		●			●	
	ATG 32R/L095T20-R005	0.001-0.003	0.079	0.95	0.002		●		●			●	
	ATG 32R/L100T20-R005	0.001-0.003	0.079	1.00	0.002		●		●			●	
	ATG 32R/L110T20-R005	0.001-0.003	0.079	1.10	0.002		●		●			●	
	ATG 32R/L120T20-R005	0.001-0.003	0.079	1.20	0.002		●		●			●	
	ATG 32R/L125T20-R020	0.002-0.004	0.079	1.25	0.008		●		●			●	
	ATG 32R/L130T20-R020	0.002-0.004	0.079	1.30	0.008		●		●			●	
	ATG 32R/L140T25-R020	0.002-0.004	0.098	1.40	0.008		●		●			●	
	ATG 32R/L145T25-R020	0.002-0.004	0.098	1.45	0.008		●		●			●	
	ATG 32R/L150T25-R020	0.002-0.004	0.098	1.50	0.008		●		●			●	
	ATG 32R/L160T25-R020	0.002-0.004	0.098	1.60	0.008		●		●			●	
	ATG 32R/L170T25-R020	0.002-0.004	0.098	1.70	0.008		●		●			●	
	ATG 32R/L175T25-R020	0.002-0.004	0.098	1.75	0.008		●		●			●	
	ATG 32R/L200T25-R020	0.002-0.004	0.098	2.00	0.008		●		●			●	
	ATG 32R/L225T25-R020	0.002-0.004	0.098	2.25	0.008		●		●			●	
	ATG 32R/L250T25-R020	0.002-0.004	0.098	2.50	0.008		●		●			●	
	ATG 32R/L300T25-R020	0.002-0.004	0.098	3.00	0.008		●		●			●	
	ATG 43R/L100T20-R010	0.001-0.003	0.079	1.00	0.004		●		●			●	
	ATG 43R/L125T20-R010	0.002-0.004	0.079	1.25	0.004		●		●			●	
	ATG 43R/L125T20-R020	0.002-0.004	0.079	1.25	0.008		●		●			●	
	ATG 43R/L130T30-R010	0.002-0.004	0.118	1.30	0.004		●		●			●	
	ATG 43R/L130T30-R020	0.002-0.004	0.118	1.30	0.008		●		●			●	
	ATG 43R/L140T35-R020	0.002-0.004	0.138	1.40	0.008		●		●			●	
	ATG 43R/L145T35-R020	0.002-0.004	0.138	1.45	0.008		●		●			●	
	ATG 43R/L150T35-R010	0.002-0.004	0.138	1.50	0.004		●		●			●	
	ATG 43R/L150T35-R020	0.002-0.004	0.138	1.50	0.008		●		●			●	
	ATG 43R/L170T35-R020	0.002-0.004	0.138	1.70	0.008		●		●			●	
	ATG 43R/L175T35-R020	0.002-0.004	0.138	1.75	0.008		●		●			●	
	ATG 43R/L185T35-R020	0.002-0.004	0.138	1.85	0.008		●		●			●	
	ATG 43R/L195T35-R020	0.002-0.004	0.138	1.95	0.008		●		●			●	

\*ATG 32R/L033 Insert appearance is yellow

●: Stock available    ▲: Stock available now but will be replaced in the future.

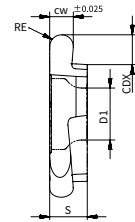
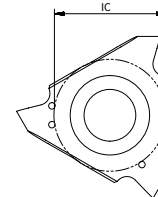
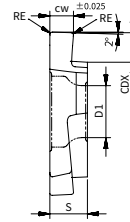
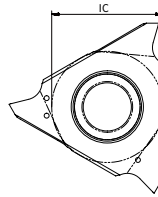
Grooving



**Shallow Grooving Series**

ATG: Applied to external and internal shallow grooving

Product code	IC	S	D1
ATG 32-	0.375	0.125	0.173
ATG 43-	0.500	0.187	0.217
ATG 43R/L480	0.500	0.197	0.217



The diagram shows the right hand insert

The diagram shows the right hand insert

Inserts	Product code	Machining conditions				● Good condition    ▲ General condition ✖ Bad condition							
		Cutting parameter		Dimensions		P		M		K		N	
		Grooving f (inch/rev)	CDX	CW (mm)	RE	AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	ATG 43R/L200T35-R010	0.002-0.004	0.138	2.00	0.004		●		●			●	
	ATG 43R/L200T35-R020	0.002-0.004	0.138	2.00	0.008		●		●			●	
	ATG 43R/L225T35-R020	0.002-0.004	0.138	2.25	0.008		●		●			●	
	ATG 43R/L230T35-R020	0.002-0.004	0.138	2.30	0.008		●		●			●	
	ATG 43R/L250T50-R010	0.002-0.004	0.197	2.50	0.004		●		●			●	
	ATG 43R/L250T50-R030	0.002-0.004	0.197	2.50	0.012		●		●			●	
	ATG 43R/L265T50-R030	0.002-0.004	0.197	2.65	0.012		●		●			●	
	ATG 43R/L280T50-R030	0.002-0.004	0.197	2.80	0.012		●		●			●	
	ATG 43R/L300T50-R010	0.002-0.004	0.197	3.00	0.004		●		●			●	
	ATG 43R/L300T50-R030	0.002-0.004	0.197	3.00	0.012		●		●			●	
	ATG 43R/L325T50-R030	0.002-0.004	0.197	3.50	0.012		●		●			●	
	ATG 43R/L330T50-R030	0.002-0.005	0.197	3.30	0.012		●		●			●	
	ATG 43R/L350T50-R010	0.002-0.005	0.197	3.50	0.004		●		●			●	
	ATG 43R/L350T50-R030	0.002-0.005	0.197	3.50	0.012		●		●			●	
	ATG 43R/L400T50-R010	0.002-0.005	0.197	4.00	0.004		●		●			●	
	ATG 43R/L400T50-R040	0.002-0.005	0.197	4.00	0.016		●		●			●	
ATG 43R/L430T50-R040	0.002-0.005	0.197	4.30	0.016		●		●			●		
ATG 43R/L450T50-R040	0.002-0.005	0.197	4.50	0.016		●		●			●		
ATG 43R/L480T50-R040	0.002-0.005	0.197	4.80	0.016		●		●			●		
	ATG 32R/L050T20-R025	0.001-0.003	0.047	0.50	0.010		●		●			●	
	ATG 32R/L100T20-R050	0.001-0.003	0.079	1.00	0.020		●		●			●	
	ATG 32R/L150T25-R075	0.002-0.004	0.098	1.50	0.030		●		●			●	
	ATG 32R/L200T25-R100	0.002-0.004	0.098	2.00	0.039		●		●			●	
	ATG 32R/L300T25-R150	0.002-0.004	0.098	3.00	0.059		●		●			●	
	ATG 43R/L100T20-R050	0.001-0.003	0.079	1.00	0.020		●		●			●	
	ATG 43R/L150T35-R075	0.002-0.004	0.138	1.50	0.030		●		●			●	
	ATG 43R/L200T35-R100	0.002-0.004	0.138	2.00	0.039		●		●			●	
	ATG 43R/L250T40-R125	0.002-0.004	0.197	2.50	0.049		●		●			●	
	ATG 43R/L300T40-R150	0.002-0.004	0.197	3.00	0.059		●		●			●	
	ATG 43R/L400T50-R200	0.002-0.005	0.197	4.00	0.079		●		●			●	

●: Stock available    ▲: Stock available now but will be replaced in the future.

**Insert Denomination System**

<b>A</b> 1	<b>C</b> 2	<b>D</b> 3	<b>4</b> 4	<b>0</b> 5	<b>3</b> 5	<b>-</b> -	<b>CM</b> 6	<b>-</b> -	<b>6</b> 7	<b>R</b> 8
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<b>1-Company Name</b> ACHTECK	<b>2-Application</b> C Grooving/Parting off T Turning/Grooving	<b>3-Insert Shape</b> S Single-edged D Double-edged	<b>4-Insert Width</b> 2=0.079inch 3=0.118inch 4=0.158inch
----------------------------------	--	---	--

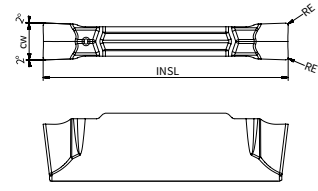
  

<b>5-Insert Corner</b> 02=0.008inch 03=0.012inch 04=0.016inch	<b>6-Geometry</b> CS CM CH GS TS TM RM RA	<b>7-Cutting Edge Angle</b> 6=6° 15=15°	<b>8-Hand of Tool</b> L: Left R: Right
--	---	---	--

Grooving

**Parting Off-Grooving Series**

CS: Double-edged inserts applicable to parting off and grooving

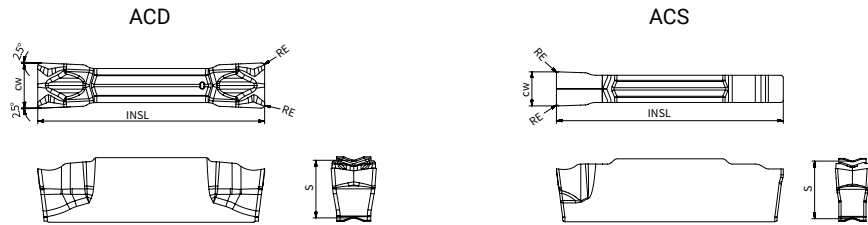


Inserts	Product code	Cutting parameter		Dimensions				Machining conditions							
		CDX	f (inch/rev)	CW (mm)	RE	INSL	S	● Good condition    ⬤ General condition ⬤ Bad condition							
								P			M		K		N
								AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	<b>ACD 202-CS</b>	0.776	0.002-0.005	2	0.008	0.787	0.201		●	●	●	●		●	
	<b>ACD 302-CS</b>	0.776	0.002-0.006	3	0.008	0.787	0.201		●	●	●	●		●	

●: Stock available    ▲: Stock available now but will be replaced in the future.

**Parting Off-Grooving Series**

CM: Double-edged inserts applicable to parting off and grooving



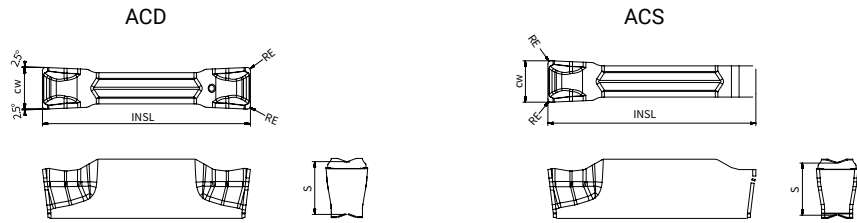
Inserts	Product code	Cutting parameter		Dimensions				Machining conditions							
		CDX	f (inch/rev)	CW (mm)	RE	INSL	S	P		M		K		N	
								AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	<b>ACD 202-CM</b>	0.776	0.002-0.006	2	0.008	0.787	0.201	●	●	●	●		●		
	<b>ACD 202-CM-6R</b>	0.776	0.001-0.004	2	0.008	0.815	0.201	●	●	●	●		●		
	<b>ACD 202-CM-6L</b>	0.776	0.001-0.004	2	0.008	0.815	0.201	●	●	●	●		●		
	<b>ACD 202-CM-15R</b>	0.776	0.001-0.004	2	0.008	0.827	0.201	●	●	●	●		●		
	<b>ACD 202-CM-15L</b>	0.776	0.001-0.004	2	0.008	0.827	0.201	●	●	●	●		●		
	<b>ACD 302-CM</b>	0.776	0.002-0.006	3	0.008	0.787	0.201	●	●	●	●		●		
	<b>ACD 302-CM-6R</b>	0.776	0.002-0.006	3	0.008	0.815	0.201	●	●	●	●		●		
	<b>ACD 302-CM-6L</b>	0.776	0.002-0.006	3	0.008	0.815	0.201	●	●	●	●		●		
	<b>ACD 302-CM-15R</b>	0.776	0.002-0.006	3	0.008	0.827	0.201	●	●	●	●		●		
	<b>ACD 302-CM-15L</b>	0.776	0.002-0.006	3	0.008	0.827	0.201	●	●	●	●		●		
	<b>ACD 403-CM</b>	0.776	0.002-0.007	4	0.012	0.787	0.201	●	●	●	●		●		
	<b>ACD 403-CM-4R</b>	0.776	0.002-0.006	4	0.012	0.815	0.201	●	●	●	●		●		
	<b>ACD 403-CM-4L</b>	0.776	0.002-0.006	4	0.012	0.815	0.201	●	●	●	●		●		
	<b>ACD 503-CM</b>	0.972	0.002-0.008	5	0.012	0.984	0.197	●	●	●	●		●		
	<b>ACD 503-CM-4R</b>	0.972	0.002-0.007	5	0.012	1.012	0.197								
	<b>ACD 503-CM-4L</b>	0.972	0.002-0.007	5	0.012	1.012	0.197								
<b>ACD 603-CM</b>	1.169	0.002-0.009	6	0.012	0.984	0.197	●	●	●	●		●			
	<b>ACS 202-CM</b>	-	0.002-0.006	2	0.008	0.787	0.201	●	●	●	●		●		
	<b>ACS 302-CM</b>	-	0.002-0.006	3	0.008	0.787	0.201	●	●	●	●		●		
	<b>ACS 403-CM</b>	-	0.002-0.007	4	0.012	0.787	0.201								
	<b>ACS 503-CM</b>	-	0.002-0.008	5	0.012	0.984	0.197								
	<b>ACS 603-CM</b>	-	0.002-0.009	6	0.012	0.984	0.197								

Remark: 1. if R/L style inserts are selected, the feed need to be reduced by 20-40%.  
 2. ACS single edged insert's Tmax is determined according to the tool holder.

●: Stock available ▲: Stock available now but will be replaced in the future.

**Parting Off-Grooving Series**

CH: Double-edged inserts applicable to parting off and grooving



Inserts	Product code	Cutting parameter		Dimensions				Machining conditions							
								● Good condition    ⬤ General condition ✖ Bad condition							
								P		M		K		N	
CDX	f (inch/rev)	CW (mm)	RE	INSL	S	AC230P	AP30TU	AP330M	AP30TU	AP330M	AC230P	AP30TU	AW100K		
	<b>ACD 202-CH</b>	0.776	0.002-0.008	2	0.008	0.787	0.201		●	●	●	●		●	
	<b>ACD 202-CH-6R</b>	0.776	0.002-0.006	2	0.008	0.815	0.201		●	●	●	●		●	
	<b>ACD 202-CH-6L</b>	0.776	0.002-0.006	2	0.008	0.815	0.201		●		●			●	
	<b>ACD 202-CH-15R</b>	0.776	0.002-0.006	2	0.008	0.827	0.201		●	●	●	●		●	
	<b>ACD 202-CH-15L</b>	0.776	0.002-0.006	2	0.008	0.827	0.201		●		●			●	
	<b>ACD 302-CH</b>	0.776	0.003-0.010	3	0.008	0.787	0.201		●	●	●	●		●	
	<b>ACD 302-CH-6R</b>	0.815	0.002-0.008	3	0.008	0.815	0.201		●	●	●	●		●	
	<b>ACD 302-CH-6L</b>	0.854	0.002-0.008	3	0.008	0.815	0.201		●	●	●	●		●	
	<b>ACD 302-CH-15R</b>	0.787	0.002-0.007	3	0.008	0.827	0.201		●	●	●	●		●	
	<b>ACD 302-CH-15L</b>	0.787	0.002-0.007	3	0.008	0.827	0.201		●		●			●	
	<b>ACD 403-CH</b>	0.748	0.003-0.012	4	0.012	0.787	0.201		●	●	●	●		●	
	<b>ACD 403-CH-4R</b>	0.776	0.002-0.010	4	0.012	0.815	0.201		●	●	●	●		●	
	<b>ACD 403-CH-4L</b>	0.776	0.002-0.010	4	0.012	0.815	0.201		●	●	●	●		●	
	<b>ACD 503-CH</b>	0.945	0.004-0.014	5	0.012	0.984	0.197		●	●	●	●		●	
	<b>ACD 503-CH-4R</b>	0.972	0.003-0.012	5	0.012	1.012	0.197		●	●	●	●		●	
	<b>ACD 503-CH-4L</b>	1.012	0.003-0.012	5	0.012	1.012	0.197		●	●	●	●		●	
	<b>ACD 603-CH</b>	0.945	0.005-0.016	6	0.012	0.984	0.197		●	●	●	●		●	
<b>ACD 804-CH</b>	1.142	0.006-0.018	8	0.016	1.181	0.240		●	●	●	●		●		
	<b>ACS 202-CH</b>	-	0.002-0.008	2	0.008	0.787	0.201		●		●			●	
	<b>ACS 302-CH</b>	-	0.003-0.010	3	0.008	0.787	0.201		●	●	●	●		●	
	<b>ACS 403-CH</b>	-	0.003-0.012	4	0.012	0.787	0.201		●	●	●	●		●	
	<b>ACS 503-CH</b>	-	0.004-0.014	5	0.012	0.787	0.197		●	●	●	●		●	
	<b>ACS 603-CH</b>	-	0.005-0.016	6	0.012	0.984	0.197								

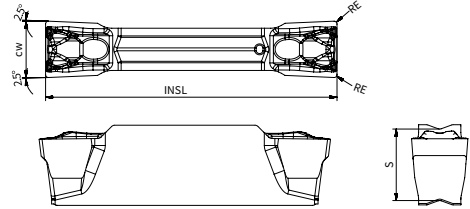
Remark: 1. if R/L style inserts are selected, the feed need to be reduced by 20-40%.  
 2. ACS single edged insert's Tmax is determined according to the tool holder.

●: Stock available    ▲: Stock available now but will be replaced in the future.

Grooving

**Grooving-Turning Series**

GS: Double-edged inserts applicable to external, internal and face turning, grooving and parting off



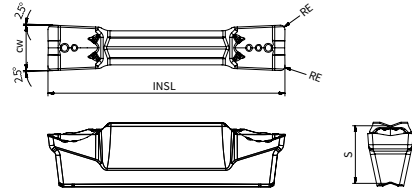
Inserts	Product code	Cutting parameter			Dimensions				Machining conditions							
		Grooving f (inch/rev)	Turning		CW (mm)	RE	INSL	S	P		M		K		N	
			f (inch/rev)	Ap (inch)					AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	ATD 300E020-GS	0.002-0.008	0.002-0.008	0.012-0.079	3.00	0.008	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 300E040-GS	0.002-0.008	0.002-0.008	0.018-0.079	3.00	0.016	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 310E020-GS	0.002-0.008	0.002-0.008	0.010-0.079	3.10	0.008	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 318E020-GS	0.002-0.008	0.002-0.008	0.010-0.079	3.18	0.008	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 318E040-GS	0.002-0.008	0.002-0.008	0.018-0.079	3.18	0.016	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 318E080-GS	0.002-0.008	0.002-0.008	0.033-0.079	3.18	0.031	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 361E030-GS	0.002-0.008	0.002-0.009	0.014-0.079	3.61	0.012	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 396E020-GS	0.002-0.01	0.003-0.010	0.010-0.098	3.96	0.008	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 396E040-GS	0.002-0.01	0.003-0.010	0.018-0.098	3.96	0.016	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 396E080-GS	0.002-0.01	0.003-0.010	0.033-0.098	3.96	0.031	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 400E020-GS	0.002-0.01	0.003-0.010	0.010-0.098	4.00	0.008	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 400E040-GS	0.002-0.01	0.003-0.010	0.018-0.098	4.00	0.016	0.815	0.201	●	●	●	●	●	●	●	●
	ATD 452E020-GS	0.002-0.011	0.004-0.012	0.010-0.118	4.52	0.008	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 470E050-GS	0.002-0.011	0.004-0.012	0.022-0.118	4.70	0.020	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 475E040-GS	0.002-0.011	0.004-0.012	0.018-0.118	4.75	0.016	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 475E080-GS	0.002-0.011	0.004-0.012	0.033-0.118	4.75	0.031	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 480E050-GS	0.002-0.011	0.004-0.012	0.022-0.118	4.80	0.020	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 500E020-GS	0.002-0.011	0.004-0.012	0.010-0.118	5.00	0.008	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 500E040-GS	0.002-0.011	0.004-0.012	0.018-0.118	5.00	0.016	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 600E020-GS	0.004-0.014	0.006-0.014	0.010-0.138	6.00	0.008	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 600E040-GS	0.004-0.014	0.006-0.014	0.018-0.138	6.00	0.016	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 635E040-GS	0.004-0.014	0.006-0.014	0.018-0.138	6.35	0.016	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 635E050-GS	0.004-0.014	0.006-0.014	0.022-0.138	6.35	0.020	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 635E080-GS	0.004-0.014	0.006-0.014	0.033-0.138	6.35	0.031	1.012	0.197	●	●	●	●	●	●	●	●
	ATD 714E080-GS	0.004-0.014	0.007-0.016	0.033-0.138	7.14	0.031	1.012	0.197	●	●	●	●	●	●	●	●




●: Stock available ▲: Stock available now but will be replaced in the future.

**Grooving-Turning Series**

TS: Double-edged inserts applicable to external, internal and face turning, grooving and parting off

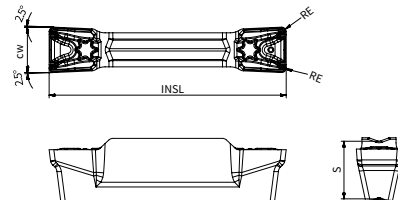



Inserts	Product code	Cutting parameter				Dimensions				Machining conditions							
		Grooving		CDX	Turning		CW (mm)	RE	INSL	S	P		M		K		N
		f (inch/rev)			f (inch/rev)	Ap (inch)					AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U
	<b>ATD 203-TS</b>	0.002-0.008	0.776	0.005-0.007	0.016-0.059	2	0.012	0.815	0.201	●	●		●		●	●	
	<b>ATD 303-TS</b>	0.002-0.010	0.776	0.006-0.009	0.018-0.079	3	0.012	0.815	0.201		●	●	●	●		●	
	<b>ATD 404-TS</b>	0.002-0.011	0.776	0.007-0.010	0.020-0.098	4	0.016	0.815	0.201		●	●	●	●		●	
	<b>ATD 408-TS</b>	0.002-0.011	0.776	0.007-0.010	0.039-0.098	4	0.031	0.815	0.201	●	●		●		●	●	
	<b>ATD 504-TS</b>	0.003-0.012	0.972	0.008-0.012	0.022-0.138	5	0.016	1.012	0.197		●	●	●	●		●	
	<b>ATD 508-TS</b>	0.003-0.012	0.972	0.008-0.012	0.039-0.138	5	0.031	1.012	0.197		●	●	●	●		●	
	<b>ATD 604-TS</b>	0.004-0.016	0.972	0.009-0.018	0.026-0.150	6	0.016	1.012	0.197		●		●			●	
	<b>ATD 608-TS</b>	0.004-0.016	0.972	0.009-0.018	0.039-0.150	6	0.031	1.012	0.197	●	●	●	●	●	●	●	
	<b>ATD 808-TS</b>	0.005-0.018	1.201	0.011-0.020	0.039-0.177	8	0.031	1.240	0.240		●		●			●	

Grooving

**Grooving-Turning Series**

TM: Double-edged inserts applicable to external, internal and face turning, grooving and parting off

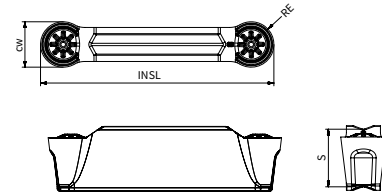


Inserts	Product code	Cutting parameter				Dimensions				Machining conditions							
		Grooving		CDX	Turning		CW (mm)	RE	INSL	S	P		M		K		N
		f (inch/rev)			f (inch/rev)	Ap (inch)					AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U
	<b>ATD 304-TM</b>	0.004-0.010	0.776	0.006-0.009	0.02-0.079	3	0.016	0.815	0.201		●		●				
	<b>ATD 404-TM</b>	0.006-0.012	0.776	0.007-0.011	0.02-0.098	4	0.016	0.815	0.201	●	●	●	●	●	●	●	
	<b>ATD 408-TM</b>	0.006-0.012	0.776	0.007-0.011	0.039-0.098	4	0.031	0.815	0.201	●	●	●	●	●	●	●	
	<b>ATD 504-TM</b>	0.007-0.014	0.972	0.008-0.014	0.022-0.138	5	0.016	1.012	0.197	●	●	●	●	●	●	●	
	<b>ATD 508-TM</b>	0.007-0.014	0.972	0.008-0.014	0.039-0.138	5	0.031	1.012	0.197		●	●	●	●		●	
	<b>ATD 604-TM</b>	0.008-0.018	0.972	0.009-0.018	0.026-0.157	6	0.016	1.012	0.197	●	●	●	●	●	●	●	
	<b>ATD 608-TM</b>	0.008-0.018	0.972	0.009-0.018	0.039-0.157	6	0.031	1.012	0.197	●	●	●	●	●	●	●	
	<b>ATD 808-TM</b>	0.009-0.020	1.201	0.011-0.020	0.039-0.197	8	0.031	1.240	0.240								
	<b>ATD 812-TM</b>	0.009-0.020	1.201	0.011-0.020	0.059-0.197	8	0.047	1.240	0.240		●		●				

●: Stock available ▲: Stock available now but will be replaced in the future.

**Grooving-Turning Series**

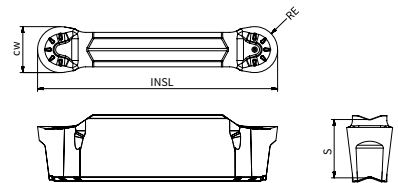
RM: Double-edged inserts applicable to external turning, grooving and profiling



Inserts	Product code	Cutting parameter			Dimensions				Machining conditions								
		Grooving f (inch/rev)	Turning		CW (mm)	RE	INSL	S	P			M		K		N	
			f (inch/rev)	Ap (inch)					AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K	
	<b>ATD 210-RM</b>	0.002-0.006	0.005-0.010	0.016-0.039	2	0.039	0.815	0.201		●	●	●	●	●	●	●	
	<b>ATD 315-RM</b>	0.003-0.007	0.006-0.012	0.02-0.059	3	0.059	0.815	0.201	●	●	●	●	●	●	●	●	
	<b>ATD 420-RM</b>	0.004-0.008	0.007-0.014	0.024-0.079	4	0.079	0.815	0.201	●	●	●	●	●	●	●	●	
	<b>ATD 525-RM</b>	0.005-0.010	0.008-0.016	0.028-0.098	5	0.098	1.012	0.197	●	●	●	●	●	●	●	●	
	<b>ATD 630-RM</b>	0.006-0.012	0.01-0.020	0.035-0.118	6	0.118	1.012	0.197		●	●	●	●	●	●	●	
	<b>ATD 840-RM</b>	0.007-0.014	0.012-0.024	0.039-0.157	8	0.157	1.240	0.240		●		●			●		

**Grooving-Turning Series**

RA: Double-edged ground inserts applicable to aluminium wheel turning and profiling



Inserts	Product code	Cutting parameter			Dimensions				Machining conditions								
		Grooving f (inch/rev)	Turning		CW (mm)	RE	INSL	S	P			M		K		N	
			f (inch/rev)	Ap (inch)					AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K	
	<b>ATD 315-RA</b>	0.003-0.007	0.006-0.012	0.020-0.059	3	0.059	0.815	0.201									●
	<b>ATD 420-RA</b>	0.004-0.010	0.008-0.018	0.024-0.008	4	0.079	0.815	0.201									●
	<b>ATD 525-RA</b>	0.004-0.011	0.008-0.020	0.028-0.098	5	0.098	1.012	0.197									●
	<b>ATD 630-RA</b>	0.005-0.012	0.009-0.024	0.035-0.118	6	0.118	1.012	0.197									●
	<b>ATD 840-RA</b>	0.006-0.016	0.010-0.026	0.039-0.157	8	0.157	1.240	0.240									●

●: Stock available ▲: Stock available now but will be replaced in the future.

**Insert Denomination System (Ground)**

**A**  
1

**T**  
2

**D**  
3

**215**  
4

**E**  
5

**010**  
6

**G**  
7

**R/L**  
8

1-Company Name
ACHTECK

2-Application	
C	Grooving/Parting off
T	Turning/Grooving



3-Insert Shape	
S	Single-edged
D	Double-edged

4-Insert Width
215=0.085inch
145=0.057inch

5-Application
E: External F: Facing I: Internal

6-Insert Corner
010=0.004inch 020=0.008inch 200=0.079 inch

7-Application Limited	
G	only applicable to parting off

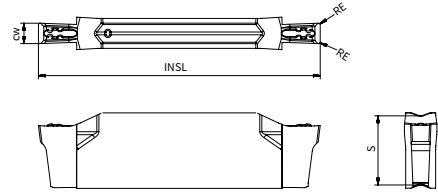
8-Hand of Tool	
	L: Left
	R: Right

Grooving



**Grooving - Turning Series**

Ground inserts applicable to turning and grooving



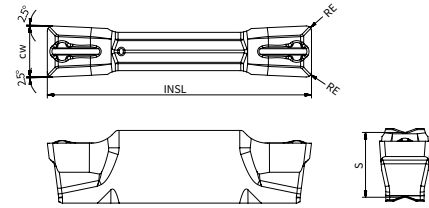
Inserts	Product code	Suitable tool holder	Cutting parameter Grooving f (inch/rev)	Dimensions					Machining conditions							
				CW (mm)	RE	CDX	S	INSL	● Good condition		● General condition		⚠ Bad condition			
									+	●	+	●	+	●	+	●
									P		M		K		N	
									AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	ATD 100E000G	0.079	0.001-0.002	1.00	0.000	0.079	0.201	0.815		●		●			●	
	ATD 100E050G	0.079	0.001-0.002	1.00	0.020	-	0.201	0.815		●		●			●	
	ATD 104E000G	0.079	0.001-0.002	1.04	0.000	0.079	0.201	0.815		●		●			●	
	ATD 115E000G	0.079	0.001-0.002	1.15	0.000	0.079	0.201	0.815		●		●			●	
	ATD 120E000G	0.079	0.001-0.002	1.20	0.000	0.079	0.201	0.815		●		●			●	
	ATD 125E010G	0.079	0.001-0.002	1.25	0.004	0.079	0.201	0.815		●		●			●	
	ATD 130E000G	0.079	0.001-0.002	1.30	0.000	0.079	0.201	0.815		●		●			●	
	ATD 135E000G	0.079	0.001-0.002	1.35	0.000	0.079	0.201	0.815		●		●			●	
	ATD 140E000G	0.079	0.001-0.002	1.40	0.000	0.079	0.201	0.815		●		●			●	
	ATD 140E070G	0.079	0.002-0.003	1.40	0.028	0.079	0.201	0.815		●		●			●	
	ATD 145E010G	0.079	0.001-0.002	1.45	0.004	0.079	0.201	0.815		●		●			●	
	ATD 147E000G	0.079	0.001-0.002	1.47	0.000	0.098	0.201	0.815		●		●			●	
	ATD 150E010G	0.079	0.001-0.002	1.50	0.004	0.098	0.201	0.815		●		●			●	
	ATD 157E015G	0.079	0.001-0.003	1.57	0.006	0.106	0.201	0.815		●		●			●	
	ATD 157E079G	0.079	0.002-0.003	1.57	0.031	0.106	0.201	0.815		●		●			●	
	ATD 165E010G	0.079	0.001-0.003	1.65	0.004	0.106	0.201	0.815		●		●			●	
	ATD 170E010G	0.079	0.001-0.003	1.70	0.004	0.118	0.201	0.815		●		●			●	
	ATD 178E018G	0.079	0.001-0.003	1.78	0.007	0.118	0.201	0.815		●		●			●	
	ATD 190E010G	0.079	0.002-0.004	1.90	0.004	0.118	0.201	0.815		●		●			●	
	ATD 196E015G	0.079	0.002-0.004	1.96	0.006	0.118	0.201	0.815		●		●			●	
	ATD 200E020G	0.079	0.002-0.004	2.00	0.008	0.118	0.201	0.815		●		●			●	
	ATD 200E100G	0.079	0.002-0.004	2.00	0.039	0.118	0.201	0.815		●		●			●	
	ATD 215E010G	0.079	0.002-0.004	2.15	0.004	0.118	0.201	0.815		●		●			●	
	ATD 222E015G	0.079	0.002-0.004	2.22	0.006	0.138	0.201	0.815		●		●			●	
	ATD 230E020G	0.079	0.002-0.004	2.30	0.008	-	0.201	0.815		●		●			●	
	ATD 239E120G	0.079	0.002-0.005	2.39	0.047	-	0.201	0.815		●		●			●	

1. When the width of insert is less than 1.78mm, please pay attention to size A of the holder.

●: Stock available    ▲: Stock available now but will be replaced in the future.

**Grooving - Turning Series**

Ground inserts applicable to turning and grooving



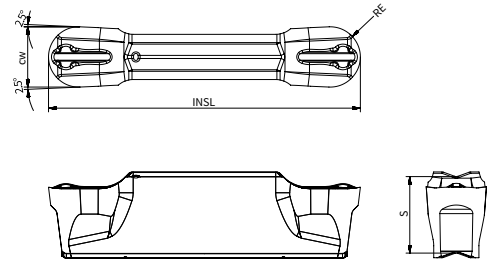
Inserts	Product code	Suitable tool holder	Cutting parameter			Dimensions					Machining conditions						
			Turning		Grooving	CW (mm)	RE	CDX	S	INSL	Machining conditions						
			f (inch/rev)	Ap (inch)	f (inch/rev)						● Good condition	⊕ General condition	⊖ Bad condition	●	●	●	
										P	M	K	N				
										AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U	AW100K
	ATD 265E015	0.118	0.004-0.007	0.008-0.071	0.002-0.005	2.65	0.006	-	0.201	0.815	●	●			●		
	ATD 300E020	0.118	0.004-0.008	0.012-0.079	0.002-0.006	3.00	0.008	-	0.201	0.815	●	●			●		
	ATD 300E040	0.118	0.006-0.009	0.020-0.087	0.002-0.006	3.00	0.016	-	0.201	0.815	●	●			●		
	ATD 400E040	0.157	0.006-0.012	0.020-0.098	0.003-0.007	4.00	0.016	-	0.201	0.815	●	●			●		
	ATD 400E080	0.157	0.006-0.012	0.039-0.098	0.003-0.007	4.00	0.031	-	0.201	0.815	●	●			●		
	ATD 415E015	0.157	0.006-0.012	0.008-0.098	0.003-0.007	4.15	0.006	-	0.201	0.815	●	●			●		
	ATD 478E055	0.197	0.008-0.014	0.024-0.102	0.004-0.008	4.78	0.022	-	0.197	1.012	●	●			●		
	ATD 500E040	0.197	0.008-0.014	0.020-0.102	0.004-0.008	5.00	0.016	-	0.197	1.012	●	●			●		
	ATD 500E080	0.197	0.009-0.014	0.039-0.118	0.004-0.008	5.00	0.031	-	0.197	1.012	●	●			●		
	ATD 515E015	0.197	0.009-0.014	0.008-0.118	0.004-0.009	5.15	0.006	-	0.197	1.012	●	●			●		
	ATD 555E055	0.236	0.009-0.016	0.024-0.118	0.005-0.011	5.55	0.022	-	0.197	1.012	●	●			●		
	ATD 600E080	0.236	0.01-0.0180	0.039-0.138	0.005-0.012	6.00	0.031	-	0.197	1.012	●	●			●		
	ATD 600E120	0.236	0.01-0.0180	0.051-0.138	0.005-0.012	6.00	0.047	-	0.197	1.012	●	●			●		
	ATD 635E080	0.236	0.01-0.0180	0.039-0.138	0.005-0.012	6.35	0.031	-	0.197	1.012	●	●			●		
	ATD 800E080	0.315	0.012-0.022	0.039-0.189	0.006-0.016	8.00	0.031	-	0.240	1.240	●	●			●		
	ATD 800E120	0.315	0.012-0.022	0.047-0.189	0.006-0.016	8.00	0.047	-	0.240	1.240	●	●			●		


Grooving

●: Stock available ▲: Stock available now but will be replaced in the future.

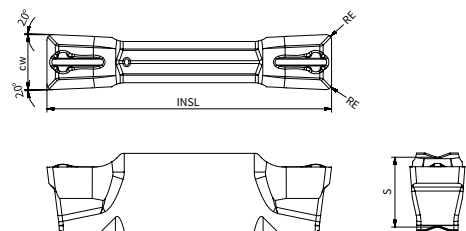
**Grooving - Turning Series**


Ground inserts applicable to turning and grooving



Inserts	Product code	Suitable tool holder	Cutting parameter			Dimensions					Machining conditions						
			Turning		Grooving	CW (mm)	RE	CDX	S	INSL	P		M		K		N
			f (inch/rev)	Ap (inch)	f (inch/rev)						AC230P	AP301U	AP330M	AP301U	AP330M	AC230P	AP301U
	<b>ATD 300E150</b>	0.118	0.006-0.012	0-0.059	0.003-0.007	3.00	0.059	-	0.201	0.815	●	●	●	●	●	●	●
	<b>ATD 400E200</b>	0.157	0.007-0.014	0-0.079	0.004-0.008	4.00	0.079	-	0.201	0.815	●	●	●	●	●	●	●
	<b>ATD 478E239</b>	0.197	0.009-0.018	0-0.094	0.005-0.009	4.78	0.094	-	0.197	1.012	●	●	●	●	●	●	●
	<b>ATD 500E250</b>	0.197	0.009-0.018	0-0.098	0.005-0.009	5.00	0.098	-	0.197	1.012	●	●	●	●	●	●	●
	<b>ATD 600E300</b>	0.236	0.010-0.020	0-0.118	0.006-0.012	6.00	0.118	-	0.197	1.012	●	●	●	●	●	●	●
	<b>ATD 800E400</b>	0.315	0.012-0.026	0-0.157	0.007-0.014	8.00	0.157	-	0.240	1.240	●	●	●	●	●	●	●

**Blank Insert of ATBD**



Inserts	Product code	Suitable tool holder (mm)	Dimensions				P	M	K	N	S	H
			CW (mm)	RE	INSL	S						
	<b>ATBD 2.6 M200</b>	2	2.60	0.004	0.835	0.201	●	●	●	●	●	●
	<b>ATBD 3.5 M200</b>	3	3.50	0.004	0.835	0.201	●	●	●	●	●	●
	<b>ATBD 4.5 M200</b>	4	4.50	0.004	0.835	0.201	●	●	●	●	●	●
	<b>ATBD 5.5 M200</b>	5	5.50	0.004	1.032	0.197	●	●	●	●	●	●
	<b>ATBD 6.5 M200</b>	6	6.50	0.004	1.032	0.197	●	●	●	●	●	●
	<b>ATBD 8.5 M200</b>	8	8.74	0.005	1.260	0.240	●	●	●	●	●	●

Finished inserts need to be used together with Achteck grooving holder.

●: Stock available ▲: Stock available now but will be replaced in the future.

Cutting Data Recommendation Table

Materials					Cutting parameter recommended table of parting off and grooving application												
ISO	Workpiece material		Brinell hardness (HB/HRC)	Tensile strength Rm(N/mm <sup>2</sup> )	AP301U			AP330M			AC230P			AW100K			
					f (inch/rev)			f (inch/rev)			f (inch/rev)			f (inch/rev)			
					0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.2	0.4	
P	Unalloyed steel	C <sub>s</sub> ≤0.25% Annealed	125	428	180	145	130	160	130	100	220	180	160	-	-	-	
		0.25<C <sub>s</sub> ≤0.55% Annealed	190	639	145	130	115	120	100	90	160	130	115	-	-	-	
		0.25<C <sub>s</sub> ≤0.55% Heat-treated	210	708	130	115	100	120	100	90	130	115	100	-	-	-	
		C>0.55% Annealed	190	639	145	130	115	145	130	80	160	130	115	-	-	-	
		C>0.55% Heat-treated	300	1013	115	100	80	115	100	80	115	100	80	-	-	-	
	Free cutting steel (short-chip)	Annealed	220	745	130	115	100	130	115	100	130	115	100	-	-	-	
	Low-alloyed steel	Annealed	175	591	180	145	130	-	-	-	-	-	-	-	-	-	
		Heat-treated	300	1013	115	100	80	-	-	-	-	-	-	-	-	-	
		Heat-treated	380	1282	170	90	105	-	-	-	-	-	-	-	-	-	
		Heat-treated	430	1477	-	-	-	-	-	-	-	-	-	-	-	-	
	High-alloyed steel and high-alloyed tool steel	Annealed	200	675	-	-	-	-	-	-	-	-	-	-	-	-	
		Hardened and tempered	300	1013	-	-	-	-	-	-	-	-	-	-	-	-	
		Hardened and tempered	400	1361	-	-	-	-	-	-	-	-	-	-	-	-	
Stainless steel	Ferritic/martensitic, annealed	200	675	165	135	105	-	-	-	-	-	-	-	-	-		
	Martensitic, heat-treated	330	1114	150	115	70	-	-	-	-	-	-	-	-	-		
M	Stainless steel	Austenitic, quench hardened	200	675	165	135	105	-	-	-	-	-	-	-	-	-	
		Austenitic, precipitation hardened (PH)	300	1013	155	120	80	-	-	-	-	-	-	-	-	-	
		Austenitic/ferritic, duplex	230	778	135	110	85	-	-	-	-	-	-	-	-	-	
K	Malleable cast iron	Ferritic	200	400	115	90	65	-	-	-	115	90	65	-	-	-	
		Pearlitic	260	700	115	90	65	-	-	-	115	90	65	-	-	-	
	Grey cast iron	Low tensile strength	180	200	185	140	95	-	-	-	200	160	120	-	-	-	
		High tensile strength/austenitic	245	350	185	140	95	-	-	-	200	160	120	-	-	-	
	Nodular cast iron	Ferritic	155	400	145	110	80	-	-	-	160	130	100	-	-	-	
		Pearlitic	265	700	145	110	80	-	-	-	160	130	100	-	-	-	
GGV(CGI)			230	400	-	-	-	-	-	-	-	-	-	-	-	-	
N	Wrought aluminium alloys	Non-aging	30	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Aged	100	340	-	-	-	-	-	-	-	-	-	-	-	-	
	Cast aluminium alloys	≤ 12% Si, non-aging	75	260	-	-	-	-	-	-	-	-	-	850	500	200	
		≤ 12% Si, aged	90	310	-	-	-	-	-	-	-	-	-	-	-	-	
		> 12% Si, non-aging	130	450	-	-	-	-	-	-	-	-	-	450	250	40	
	Magnesium alloys		70	250	-	-	-	-	-	-	-	-	-	-	-	-	
	Copper and copper alloys	Unalloyed, electrolytic copper	100	340	-	-	-	-	-	-	-	-	-	-	-	-	
Brass, bronze, red brass		90	310	-	-	-	-	-	-	-	-	-	-	-	-		
Cu alloys, short-chipping		110	380	-	-	-	-	-	-	-	-	-	-	-	-		
High-tensile, Ampco alloy		300	1010	-	-	-	-	-	-	-	-	-	-	-	-		
S	Heat-resistant alloys	Fe-based	Annealed	200	680	-	-	-	-	-	-	-	-	-	-	-	-
			Hardened	280	940	-	-	-	-	-	-	-	-	-	-	-	-
		Ni or Co based	Annealed	250	840	-	-	-	-	-	-	-	-	-	-	-	-
			Hardened	350	1180	-	-	-	-	-	-	-	-	-	-	-	-
	Titanium alloys	Cast	320	1080	-	-	-	-	-	-	-	-	-	-	-	-	
		Pure titanium	200	680	-	-	-	-	-	-	-	-	-	-	-	-	
		α and β alloys, hardened	375	1260	-	-	-	-	-	-	-	-	-	-	-	-	
Tungsten alloys		410	1400	-	-	-	-	-	-	-	-	-	-	-	-		
Molybdenum alloys		300	1010	-	-	-	-	-	-	-	-	-	-	-	-		
H	Hardened steel	Hardened and tempered	50HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Hardened and tempered	55HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Hardened and tempered	60HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chilled cast iron	Hardened and tempered	50HRC	-	-	-	-	-	-	-	-	-	-	-	-	-	

The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to machine rigidity, tool body and workpiece conditions and coolant.