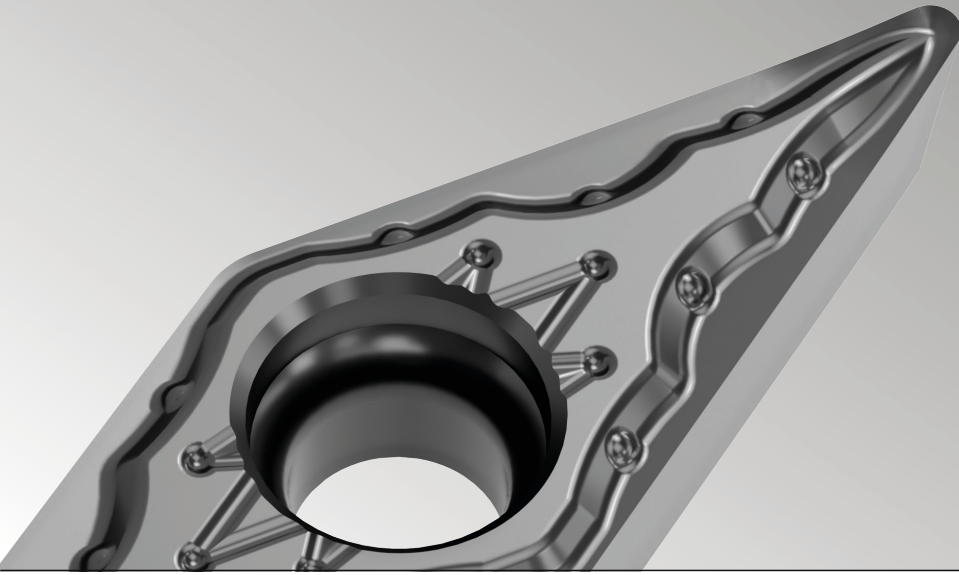




WE LIVE QUALITY TOOLING

PRECISION-PRESSED PSF GEOMETRY

IDEAL FOR THE MACHINING OF SMALL COMPONENTS



YOUR BENEFITS

PSF Geometry

Ideal for swiss type machining applications

Excellent chip evacuation in a wide range of cutting depths

Perfect wear resistance in a wide range of cutting conditions

Low cutting forces due to positive geometry

Various insert types available:
CC..., DC..., VC...



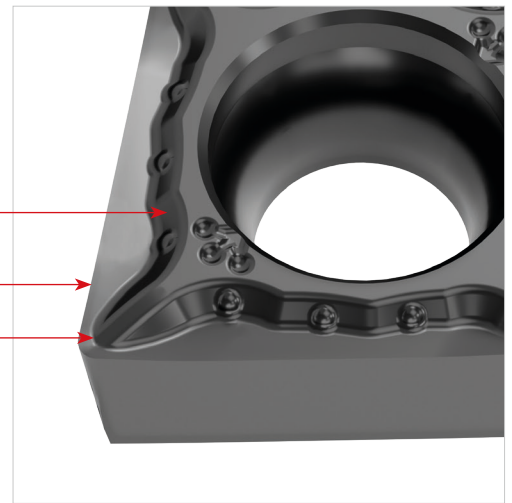
PRECISION-PRESSED, POSITIVE PSF GEOMETRY.

Ideal for swiss type machining applications and the machining of small components.

The strong advantages such as excellent chip evacuation and wear resistance over a wide range of cutting data make the geometry one of the most versatile of its kind.

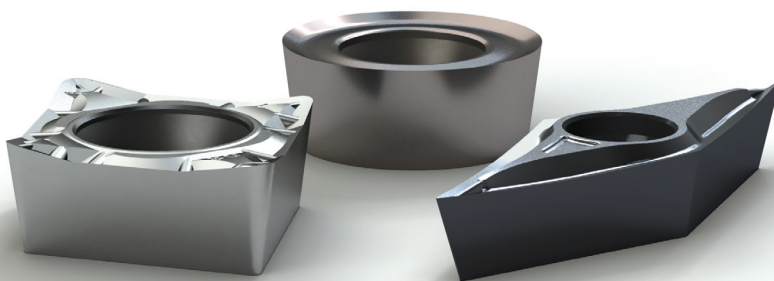
Properties:

- The wave shape ensures very good chip control with varying cutting depths.
- The cutting edge ensures good cutting ability.
- The leading geometry enables small infeeds.



The perfect complement - High positive indexable inserts.

For the high-precision machining of demanding materials and small, precision components, ARNO offers the world's largest variety of high positive indexable inserts. In addition to the standard variants, the programme also includes finely graded intermediate sizes and rounded cutting edges - always peripherally ground.



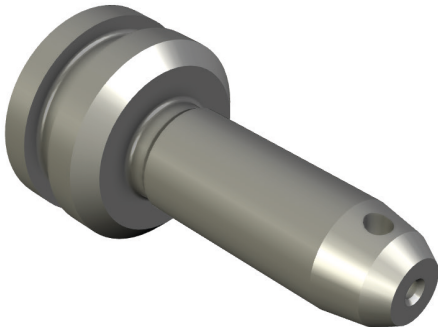
High positive indexable inserts in the geometries -ASF, -ACB, -ALU and -AWI are ideal for long-chipping materials, small, precision components and the highest surface qualities.



NUMBER OF TOOL OFFSET CHANGES HALVED!

PSF Geometry – Longitudinal turning | Piston

PSF Geometry in a practical test

Result		Component																					
Material:	X5CrNi18-10 (1.4301)																						
Tool:	SDJCR 1616 X11																						
Indexable insert:	DCMT 11T304EN-PSF																						
Grade:	AM5125																						
	<table> <tr> <th></th><th>Competitor</th><th>ARNO Werkzeuge</th></tr> <tr> <td>D</td><td>0.2362 in</td><td>0.2362 in</td></tr> <tr> <td>VC</td><td>328 ft/min</td><td>328 ft/min</td></tr> <tr> <td>FN</td><td>0.0020 in/rev</td><td>0.0020 in/rev</td></tr> <tr> <td>AP</td><td>0.0197 in</td><td>0.0197 in</td></tr> <tr> <td>Machining</td><td>Longitudinal turning</td><td>Longitudinal turning</td></tr> <tr> <td>Cooling</td><td>Oil</td><td>Oil</td></tr> </table>		Competitor	ARNO Werkzeuge	D	0.2362 in	0.2362 in	VC	328 ft/min	328 ft/min	FN	0.0020 in/rev	0.0020 in/rev	AP	0.0197 in	0.0197 in	Machining	Longitudinal turning	Longitudinal turning	Cooling	Oil	Oil	
	Competitor	ARNO Werkzeuge																					
D	0.2362 in	0.2362 in																					
VC	328 ft/min	328 ft/min																					
FN	0.0020 in/rev	0.0020 in/rev																					
AP	0.0197 in	0.0197 in																					
Machining	Longitudinal turning	Longitudinal turning																					
Cooling	Oil	Oil																					
Competitor components		200 pieces																					
ARNO components		500 pieces																					
Your benefits: 	• Number of tool offset changes halved • Dimensional accuracy improved • Tool life increased by 150%																						

ARNO TOOL-TIPP

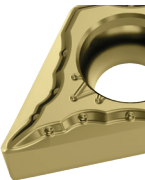
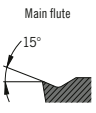
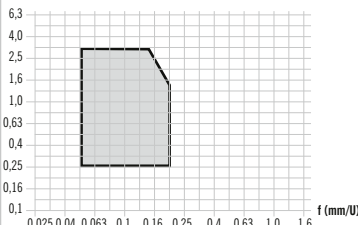
GRADE DESCRIPTION

HC/HU – CARBIDE COATED/UNCOATED

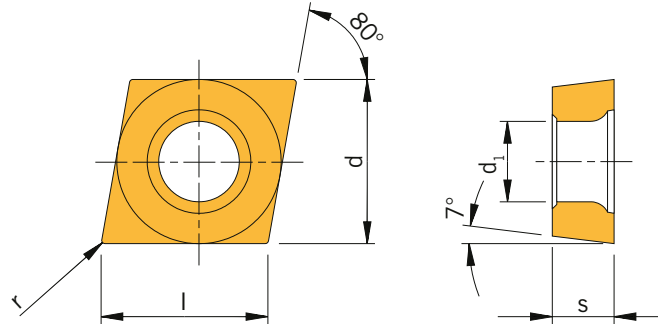
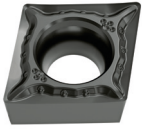
Grade	Coating colour	Properties	Material group						Scope of application									
			P	M	K	N	S	H	WEAR RESISTANCE					TOUGHNESS				
AM5115		• Very good wear resistance • Heat resistant ultra thin multi layer coating • Oxidation and diffusion wear resistance	○	○	○		●	○	5	10	15	20	25	30	35	40	45	●
AM5125		• Very good fracture resistance • Heat resistant ultra thin multi layer coating • Oxidation and diffusion wear resistance	○	○	○		●	○										●
AS1010		• Very well suited for machining high-temperature resistant alloys • For machining super alloys • Excellent wear resistance	○	○	○	○	●		5	10	15	20	25	30	35	40	45	●

GEOMETRY DESCRIPTION

POSITIVE FINISHING TO MEDIUM MACHINING

Geometry	Properties	Material group						View/Cut	Basis cutting data diagram
		P	M	K	N	S	H		
-PSF  	• Excellent for Swiss type machining applications • Very good cutting edge stability • Wave shape for very good chip control		●	●		●			ap (mm) CC... 09T304...  f (mm/U)

CCMT



Designation ANSI ISO	r INCH mm	f _n INCH mm	a _p INCH mm	HC/EDP-No.	
				AM5115	AM5125
CCMT 21.50.5AN-PSF CCMT 060202EN-PSF	0.008 0.2	0.002 - 0.0047 0.05 - 0.12	0.012 - 0.08 0.3 - 2	115914	112209
CCMT 21.51AN-PSF CCMT 060204EN-PSF	0.016 0.4	0.003 - 0.008 0.08 - 0.20	0.016 - 0.08 0.4 - 2	115915	112210
CCMT 32.50.5AN-PSF CCMT 09T302EN-PSF	0.008 0.2	0.002 - 0.0047 0.05 - 0.12	0.012 - 0.08 0.3 - 2	115916	112212
CCMT 32.51AN-PSF CCMT 09T304EN-PSF	0.016 0.4	0.003 - 0.010 0.08 - 0.25	0.016 - 0.12 0.4 - 3	115917	112211

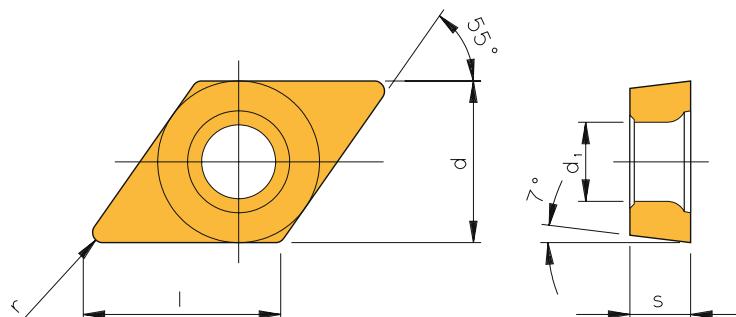
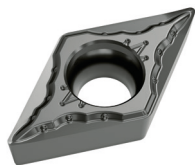
HC = Carbide coated

P	○	○
M	○	○
K	○	○
N		
S	●	●
H	○	○

● Main application
○ Secondary application

ARNO TOOL-TIPP

DCMT



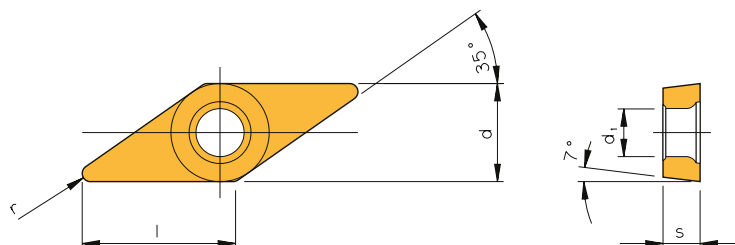
Designation ANSI ISO	r INCH mm	f _n INCH mm	a _p INCH mm	HC/EDP-No.		HU/EDP-No.
				AM5115	AM5125	AS1010
DCMT 21.50.5AN-PSF DCMT 070202EN-PSF	0.008 0.2	0.002 - 0.0047 0.05 - 0.12	0.016 - 0.08 0.4 - 2	115918	112207	
DCMT 21.51AN-PSF DCMT 070204EN-PSF	0.016 0.4	0.003 - 0.008 0.08 - 0.20	0.016 - 0.08 0.4 - 2	115919	112206	
DCMT 32.50.5AN-PSF DCMT 11T302EN-PSF	0.008 0.2	0.002 - 0.0047 0.05 - 0.12	0.016 - 0.08 0.4 - 2	115920	112037	
DCMT 32.51AN-PSF DCMT 11T304EN-PSF	0.016 0.4	0.003 - 0.01 0.08 - 0.25	0.016 - 0.12 0.4 - 3	115921	112205	
DCMT 32.52AN-PSF DCMT 11T308EN-PSF	0.032 0.8	0.005 - 0.013 0.12 - 0.32	0.02 - 0.12 0.5 - 3	115922	112276	117861

HC = Carbide coated
HU = Carbide uncoated

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

● Main application
○ Secondary application

VCMT



Designation ANSI ISO	r INCH mm	f _n INCH mm	a _p INCH mm	HC/EDP-No.	
				AM5115	AM5125
VCMT 220.5AN-PSF VCMT 110302EN-PSF	0.008 0.2	0.002 - 0.006 0.05 - 0.15	0.016 - 0.06 0.4 - 1.5	115923	112038
VCMT 221AN-PSF VCMT 110304EN-PSF	0.016 0.4	0.003 - 0.008 0.08 - 0.20	0.016 - 0.06 0.4 - 1.5	115924	112208

HC = Carbide coated

P	☐	☐
M	☐	☐
K	☐	☐
N	☐	☐
S	☒	☒
H	☐	☐

● Main application

○ Secondary application

RECOMMENDED CUTTING DATA

Material group	Structure of the material groups and identification letters		Brinell hardness HB	Tensile strength Rm (N/mm ²)	Chipping group	Cutting speed Vc (m/min)		
						HC		HU
						AM5115	AM5125	AS1010
P	Unalloyed steel	C ≤ 0.25 % annealed	125	428	P1	220 - 275 - 335	180 - 230 - 280	-
		C > 0.25 ... ≤ 0.55 % annealed	190	639	P2	180 - 240 - 300	160 - 205 - 250	-
		C > 0.25 ... ≤ 0.55 % hardened and tempered	210	708	P3	180 - 240 - 300	160 - 205 - 250	-
		C > 0.55 % annealed	190	639	P4	150 - 205 - 260	120 - 170 - 220	-
		C > 0.55 % hardened and tempered	300	1013	P5	150 - 205 - 260	120 - 170 - 220	-
		Machinig steel (short-chipping) annealed	220	745	P6	150 - 205 - 260	120 - 170 - 220	-
	Low alloyed steel	annealed	175	591	P7	180 - 230 - 280	-	-
		hardened and tempered	300	1013	P8	160 - 200 - 245	-	-
		hardened and tempered	380	1282	P9	115 - 160 - 215	-	-
		hardened and tempered	430	1477	P10	115 - 160 - 215	-	-
	High alloyed steel and high alloyed tool steel	annealed	200	675	P11	80 - 120 - 165	-	-
		hardened	300	1013	P12	40 - 85 - 135	-	-
		hardened	400	1361	P13	40 - 85 - 135	-	-
	Stainless steel	ferretic / martensitic, annealed	200	675	P14	40 - 105 - 165	50 - 105 - 160	-
		martensitic, hardened and tempered	330	1114	P15	40 - 95 - 150	40 - 90 - 140	-
		austenitic, chilled	200	675	M1	80 - 125 - 170	70 - 110 - 150	-
M	Stainless steel	austenitic, precipitation-hardened (PH)	300	1013	M2	40 - 85 - 135	35 - 80 - 120	50 - 85 - 120
		austenitic-ferretic, Duplex	230	778	M3	40 - 85 - 135	35 - 80 - 120	50 - 85 - 120
		ferretic	200	675	K1	150 - 180 - 210	-	-
K	Malleable cast iron	pearlitic	260	867	K2	150 - 180 - 210	-	-
		low tensile strength	180	602	K3	180 - 250 - 325	-	-
	Cast iron	high tensile strength / austenitic	245	825	K4	120 - 185 - 255	-	-
		ferretic	155	518	K5	140 - 185 - 230	-	-
	Cast iron with nodular graphite	pearlitic	265	885	K6	120 - 145 - 170	-	-
	GGV (CGI)		200	675	K7	180 - 250 - 325	-	-
N	Aluminium alloys long chipping	not heat treatable	30	-	N1	-	-	-
		heat treatable, heat treated	100	343	N2	-	-	-
		≤ 12 % Si, not heat treatable	75	260	N3	-	-	-
	Casted aluminium alloys	≤ 12 % Si, heat treatable, heat treated	90	314	N4	-	-	-
		> 12 % Si, not heat treatable	130	447	N5	-	-	-
	Magnesium alloys	> 12 % Si, not heat treatable	70	250	N6	-	-	-
		Unalloyed, elektrolyte copper	100	343	N7	120 - 165 - 210	120 - 185 - 250	-
	Copper and copper alloys (Brass / Bronze)	Brass, Bronze	90	314	N8	200 - 385 - 580	150 - 325 - 500	-
		Cu-alloys, short-chipping	110	382	N9	200 - 385 - 580	150 - 325 - 500	-
			300	1013	N10	-	-	-
	Non-ferrous materials	Lead alloys (without abrasive filling material)	-	-	N11	160 - 380 - 600	-	-
		Duroplastic (without abrasive filling material)	-	-	N12	160 - 380 - 600	-	-
		Plastic glas fibre reinforced GFRP	-	-	N13	100 - 200 - 300	100 - 200 - 300	-
		Plastic carbon fibre reinforced CFRP	-	-	N14	100 - 200 - 300	100 - 200 - 300	-
		Plastic aramid fibre reinforced AFRP	-	-	N15	100 - 200 - 300	100 - 200 - 300	-
		Graphite (tech.)	80 Shore	-	N16	-	-	-
S	High temperature resistant alloys	Fe-based annealed	200	675	S1	20 - 40 - 65	20 - 40 - 60	20 - 40 - 55
		Fe-based heat treated	280	943	S2	20 - 40 - 65	20 - 40 - 60	-
		Ni- or Co-alloyed annealed	250	839	S3	15 - 35 - 55	15 - 35 - 50	15 - 35 - 55
		Ni- or Co-alloyed heat treated	350	1177	S4	15 - 30 - 45	15 - 30 - 40	15 - 35 - 50
		Ni- or Co-alloyed casting	320	1076	S5	15 - 30 - 45	15 - 30 - 40	-
	Titanium alloys	Pure titan	200	675	S6	95 - 145 - 195	-	-
		α- and β-alloys, heat treated	375	1262	S7	40 - 60 - 85	-	30 - 55 - 80
		β-alloys	410	1396	S8	40 - 60 - 85	-	30 - 55 - 80
	Wolfram alloys		300	1013	S9	-	-	-
	Molybdän alloys		300	1013	S10	-	-	-
H	Hardened steel	hardened	50 HRC	-	H1	30 - 40 - 50	-	-
		hardened	55 HRC	-	H2	10 - 20 - 25	-	-
		hardened	60 HRC	-	H3	10 - 20 - 25	-	-
	Hardened cast iron	hardened	55 HRC	-	H4	10 - 20 - 25	-	-

The recommended cutting data are only approximate values.

It may be necessary to adjust them to each individual machining application.

HC = Carbide coated

HU = Carbide uncoated