

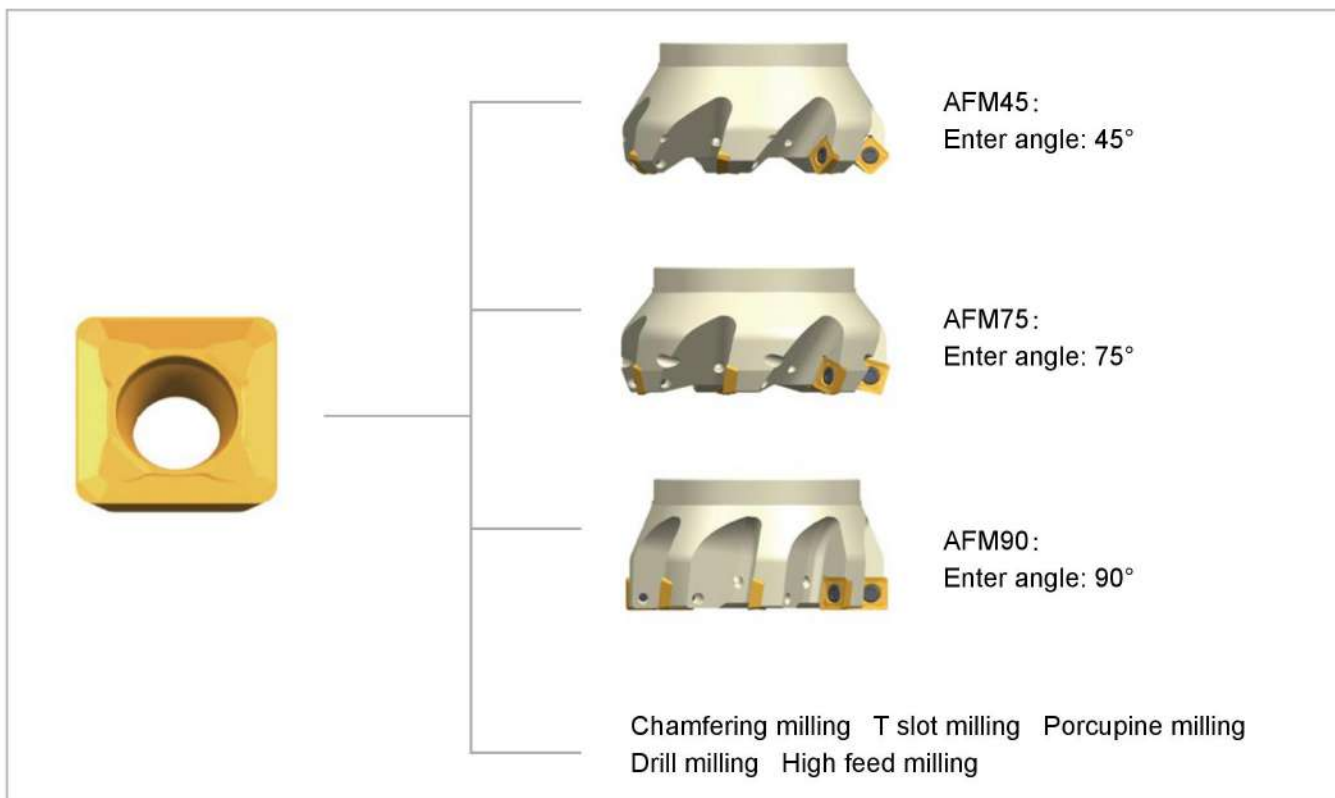
SD Series

Economical Milling



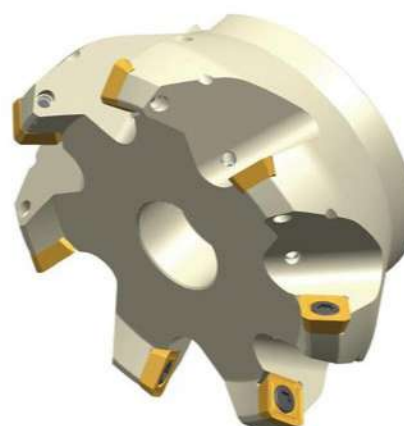
SD Cutter Features

AFM45/75/90 -SD Series Milling-Light, Economic, Multi-function



● Cutter Structure Features

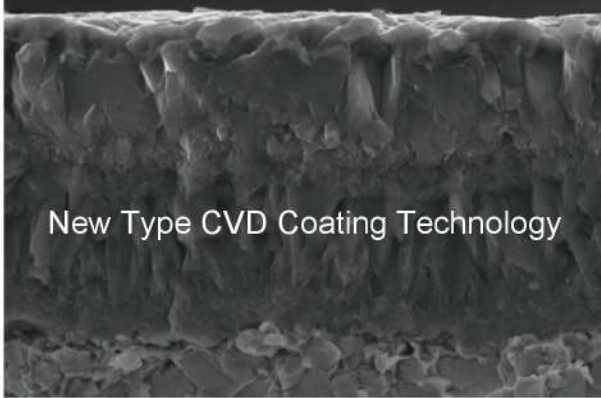
- Cutting gently and slightly
- Same insert can be used for 45°, 75° and 90° enter angle, which largely reduced stock items.
- Dia. Range from D16 to D125
- SD12/09 two size of insert available
- work piece material: P、K、 M、 S
- Shining Nickel-plated cutter has well corrosion resistance and wear resistance
- Coolant type for all



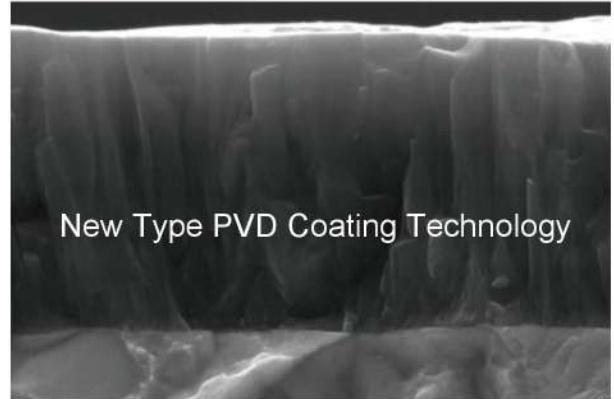
● Insert Features

Positive insert with single side 4 cutting edges; sharp cutting edge make cutting gently and lightly
Extensive application for facing, slotting, chamfering, helical ramping, plunging and ramping.

● Coating Introduction



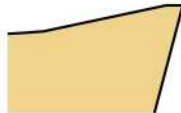



Multi-layer coating structure with perfect toughness.
Good wear resistance and high temperature oxidation resistance
Smooth coating surface enhances work piece surface finish;
Well combination between coating layer and substrate extended tool life.



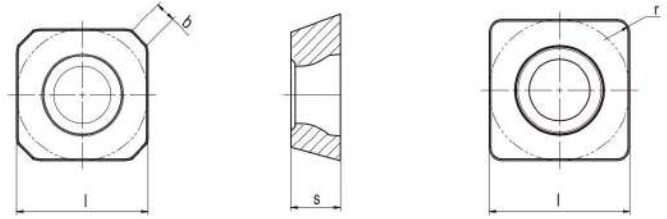
Alternate soft and hard nano-coating layer structure has high hardness and good toughness;
Good high temperature resistance and oxidation resistance
Smooth coating surface enhances work piece surface finish;
Well combination between coating layer and substrate extended tool life.

● Cutter Structure Features

<p>HR2 → Stable Type Suitable for bad cutting condition with stable cutting edge. High feed rate.</p>	
<p>MR6 → Stable Type Suitable for unstable cutting conditions with best cutting edge stability; high feedrate</p>	
<p>MR2 → General Type Apply for medium cutting conditions for most types of materials machining</p>	
<p>MM3 → Free-cutting Type Apply for semi-finishing and finishing under fine cutting conditions with low cutting force; medium feedrate</p>	

● Insert stock

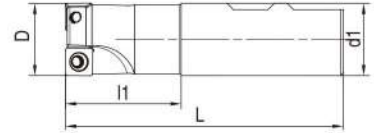
SD..09/12



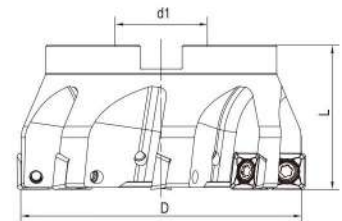
Insert	Designation	Dimensions				Grades					
		l	s	r	b	CVD coated		PVD coated			
						AC301P	AC301K	AP301U	AP351U	AP401U	AP351K
	SDMT 09T304EN-MM3	9.525	3.97	0.4	-	●	●	●	●		
	SDMT 09T308EN-MM3	9.525	3.97	0.8	-	●	●	●	●		
	SDMT 09T320-MM4	9.525	3.97	2.0	-					●	
	SDMT 120408EN-MM4	12.7	4.76	0.8	-		●	●	●		●
	SDMT 120412EN-MM3	12.7	4.76	1.2	-	●	●	●	●		
	SDGT 09T3AEEN-MM4	9.525	3.97	-	1.5		●	●	●		●
	SDKT 1204AEEN-MR2	12.7	4.76	-	2.0	●	●	●	●		●
	SDGT 09T3PDER-MR6	9.525	3.97	0.8	1.2		●	●	●		●
	SDGT 1204PDER-MR6	12.7	4.76	0.8	1.6		●	●	●		●
	SDHT 1204AEEN-MR6	12.7	4.76	0.8	2.0		●	●	●		●
	SDMW 09T308EN-HR2	9.525	3.97	0.8	-		●	●			
	SDHW 09T3AESN-HR2	9.525	3.97	-	1.5		●	●			●
	SDMW 120412EN-HR2	12.7	4.76	1.2	-		●	●			●
	SDHW 1204AESN-HR2	12.7	4.76	-	2.0		●	●			●

Remark: ● Represent for standard stock

AFM90-SD09



Designation	D	L	l1	apmax	Coolant	Z	Insert
AFM90-025-Z02-W25R-SD09-C	25	120	30	6		2	SD..09T3
AFM90-032-Z03-W32R-SD09-C	32	120	35	6		3	



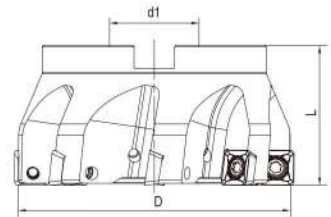
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM90-040-Z04-A16R-SD09-C	40	16	40	6		4	SD..09T3
AFM90-050-Z05-A22R-SD09-C	50	22	40	6		5	
AFM90-063-Z06-A22R-SD09-C	63	22	40	6		6	
AFM90-080-Z08-A27R-SD09-C	80	27	50	6		8	
AFM90-100-Z10-A32R-SD09-C	100	32	50	6		10	

Remark: represent for coolant
 represent for no coolant

Dimensions	Spare parts		
	Screw	Wrench	Torque
φ25-φ32			3.5Nm
	AST4075-60		
φ40-φ100	AST409-60	ADT-T15	

Machining method				
Slotting	Facing	Helical ramping	Plunging	Ramping

AFM90-SD12



Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM90-050-Z04-A22R-SD12-C	50	22	40	9		4	SD..1204
AFM90-063-Z05-A22R-SD12-C	63	22	40	9		5	
AFM90-080-Z06-A27R-SD12-C	80	27	50	9		6	
AFM90-100-Z08-A32R-SD12-C	100	32	50	9		8	
AFM90-125-Z10-A40R-SD12-C	125	40	63	9		10	

Remark: represent for coolant
 represent for no coolant

Dimensions	Spare parts		
	Screw	Wrench	Torque
φ50-φ125			5.0Nm
	AST45115-55	ADT-T20	

Machining method				
Slotting	Facing	Helical ramping	Plunging	Ramping

AFM90-SD09 Recommended Cutting Conditions

Machined Materials		Achteck Milling Grades Application Ranges										Cutting depth and feed rate							
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	Feed rate(mm/z)										Cutting depth and feed rate					
				AP301U	AP351U	AP401U	AC301P	AC301K	AP351K	AW100K	ap(mm)		Feed(mm/z)						
				0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5	Min	Max	Min	Max
P	Non-alloyed steel	<600	<180	450/340/290/230	205/170	430/230/120													
		<950	<280	320/240/200/200	180/160	380/220/120													
		700-950	200-280	290/210/185/200	155/110	340/240/120													
		950-1200	280-355	280/210/200/180	130/90	260/150/80													
		1200-1400	355-415	210/170/110/140	105/70	145/105/65													
M	Duplex stainless steel	778	230	165/150/130/270	215/155	150/115/85	225/180/125												
	Austenitic stainless steel	675	200	270/185/90	260/180/90	185/140/105	210/145/75												
K	Precipitation-hardening stainless steel	1013	300	300/225/165/170	150/110/125/95	70/140/130/90													
	Grey cast iron	700	220					450/310/140	390/280/130							3.0	8.0	1.0	3.0
	Nodular Cast iron	880	260					450/295/140	420/300/140										
S	Malleable cast iron	800	250					500/365/230	430/290/230										
	Fe based alloy	943	280																
	Co based alloy	1076	320	45/40/30															
	Ni based alloy	1177	350	45/40/30															
	Ti-alloy	1262	370	100/70/45															
N	Aluminum	260	75																
	Aluminum alloy	447	130																
H	Hardened steel	-	50-60HRC																
	Chilled cast iron	-	55HRC																

The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, work piece clamping and coolants. Average chip thickness=hm(hm=fzXSin KappaR)

AFM90-SD12 Recommended Cutting Conditions

ISO	Machined Materials		Achtek Milling Grades Application Ranges												Cutting depth and feed rate																				
	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AP301U	AP351U	AP401U	AC301P	AC301K	AP351K	AW100K	PVD	CVD	CVD	PVD	Uncoated	ap(mm)	Feed(mm/z)		ap(mm)		Feed(mm/z)														
				0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5		0.1	0.3	0.5	0.1	0.3	0.5	0.1	0.3	0.5										
				Feed rate (mm/z)												Cutting speed (m/min)		Min		Max		Min		Max											
P	Non-alloyed steel	<600	<180	450	340	290	230	205	170																										
				320	240	200	200	180	160																										
				290	210	185	200	155	110																										
				280	210	200	180	130	90																										
				210	170	110	140	105	70																										
M	Duplex stainless steel	778	230	165	150	130	270	215	155	115	85	225	180	125																					
				270	185	90	260	180	90	185	140	105	210	145	75																				
				300	225	165	170	150	110	125	95	70	140	130	90																				
K	Grey cast iron	700	220																																
S	Fe based alloy	943	280																																
N	Aluminum	260	75																																
H	Hardened steel	-	50-60HRC																																

The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, work piece clamping and coolants. Average chip thickness=hm(hm=fzxSin KappaR)