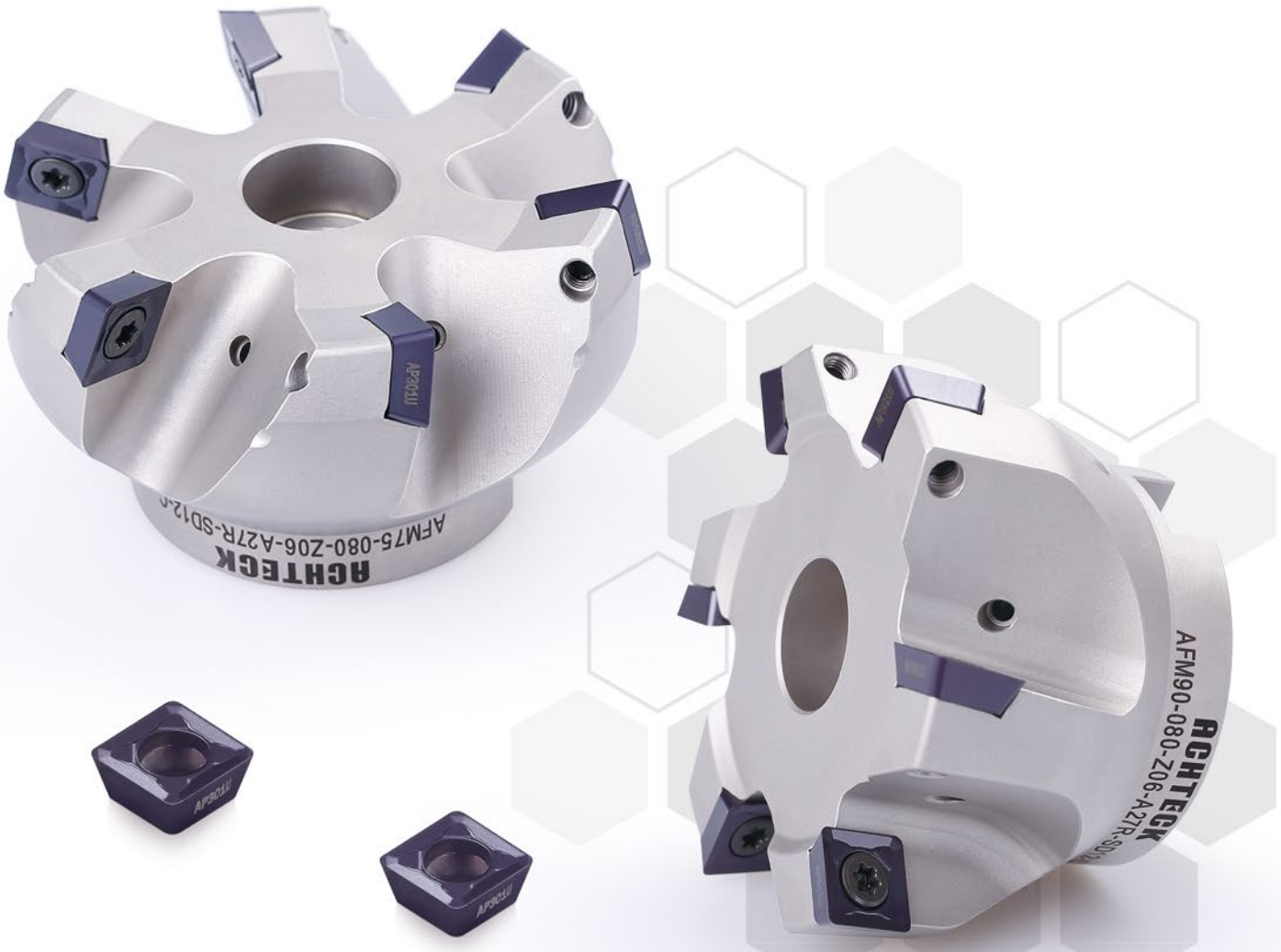
ACHTECK·MILL

SD Series

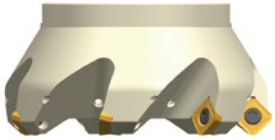
Economical Milling



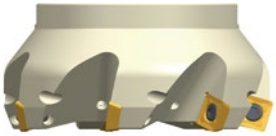
www.achtecktool.com

SD Cutter Features

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



AFM45:
Enter angle: 45°



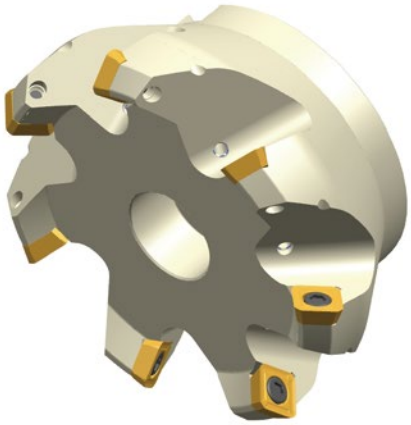
AFM75:
Enter angle: 75°

AFM90:
Enter angle: 90°

Chamfering milling　T slot milling　Porcupine milling
Drill milling　High feed milling

Cutter Structure Features

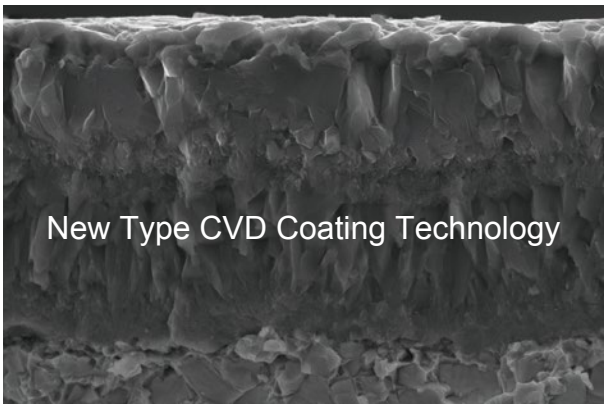
- Cutting gently and slightly
- Same insert can be used for 45°, 75° and 90° enter angle, which largely reduced stock items.
- Dia. Range from D16 to D125
- SD12/09 two size of insert available
- work piece material: P、K、M、S
- Shining Nickel-plated cutter has well corrosion resistance and wear resistance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



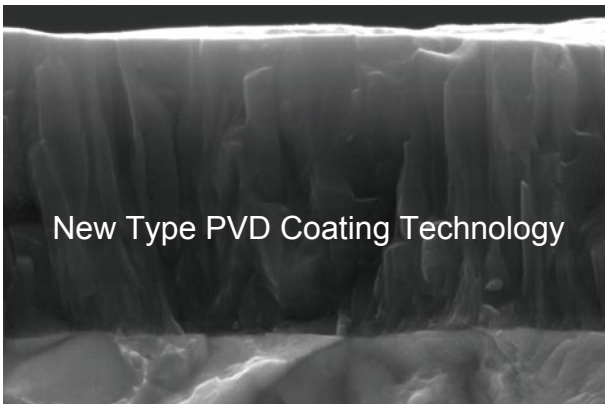
Insert Features

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

HR2 → Stable Type
Suitable for bad cutting condition with stable cutting edge. High feed rate.

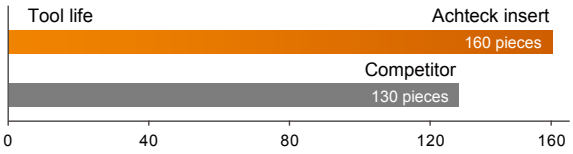
MR6 → Stable Type
Suitable for unstable cutting conditions with best cutting edge stability; high feedrate

MR2 → General Type
Apply for medium cutting conditions for most types of materials machining

MM3 → Free-cutting Type
Apply for semi-finishing and finishing under fine cutting conditions with low cutting force; medium feedrate

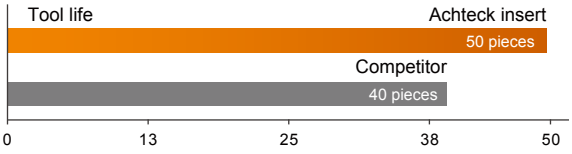
Machining Case

Work piece：knuckle
Material：Nodular cast iron
Hardness：HB260
Coolant type：Emulsion
Cutter designation：AFM90-040-Z04-A16R-SD09-C
Insert designation：SDMT 09T308EN-MM3 AC301K
Cutting Parameter：Vc=160m/min　fz=0.15mm/z
ap=1.5mm



Comparison Result: Achteck tool life is 23% higher than competitor

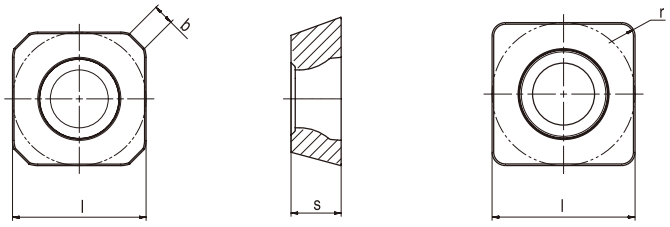
Work piece：Truck brake bracket
Material：Nodular cast iron
Hardness：HB220
Coolant type：Emulsion
Cutter designation：AFM75-063-Z05-A22R-SD12-C
Insert designation：SDMT 120412EN-MM3 AP351K
Cutting Parameter：Vc=180m/min　ap=1.8mm
f=1.5mm/rev

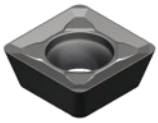
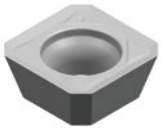
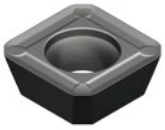
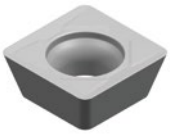
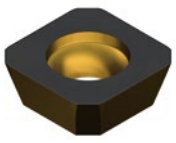


Comparison Result: Achteck tool life is 25% higher than competitor

Insert stock

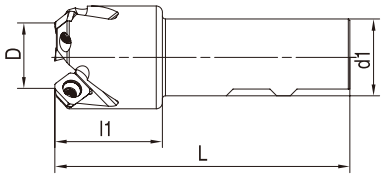
SD..09/12



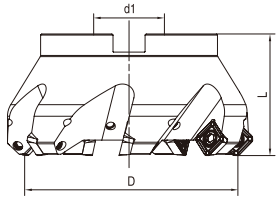
Insert	Designation	Dimensions				Grades					
						CVD coated		PVD coated			
		l	s	r	b	AC301P	AC301K	AP301U	AP351U	AP401U	AP351K
	SDMT 09T304EN-MM3	9.525	3.97	0.4	-	●	●	●	●		
	SDMT 09T308EN-MM3	9.525	3.97	0.8	-	●	●	●	●		
	SDMT 09T320-MM4	9.525	3.97	2.0	-					●	
	SDMT 120408EN-MM4	12.7	4.76	0.8	-		●	●	●		●
	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

AFM45-SD09

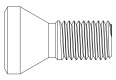
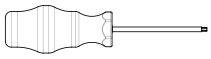


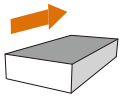
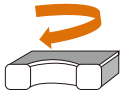
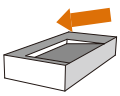
Designation	D	d1	L	l1	apmax	Coolant	Z	Insert
AFM45-016-Z02-W16R-SD09-C	16	16	90	25	5		2	SD..09T3
AFM45-020-Z02-W20R-SD09-C	20	20	110	30	5		2	
AFM45-025-Z03-W25R-SD09-C	25	25	120	30	5		3	
AFM45-032-Z03-W32R-SD09-C	32	32	120	35	5		3	



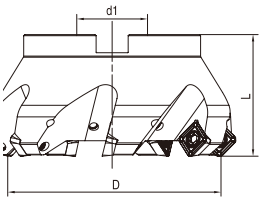
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM45-032-Z04-A13R-SD09-C	32	10	40	5		4	SD..09T3
AFM45-040-Z05-A16R-SD09-C	40	16	40	5		5	
AFM45-050-Z05-A22R-SD09-C	50	22	40	5		5	
AFM45-050-Z06-A22R-SD09-C	50	22	40	5		6	
AFM45-063-Z05-A22R-SD09-C	63	22	40	5		5	
AFM45-063-Z07-A22R-SD09-C	63	22	40	5		7	
AFM45-080-Z06-A27R-SD09-C	80	27	50	5		6	
AFM45-080-Z09-A27R-SD09-C	80	27	50	5		9	
AFM45-100-Z07-A32R-SD09-C	100	32	50	5		7	
AFM45-100-Z11-A32R-SD09-C	100	32	50	5		11	
AFM45-125-Z08-A40R-SD09-C	125	40	63	5		8	

Remark: represent for coolant
represent for no coolant

Dimensions	Spare parts		
Cutter diameter	Screw	Wrench	Torque
φ16-φ32			3.5Nm
	AST4075-60	ADT-T15	
φ40-φ125	AST409-60	ADT-T15	

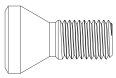
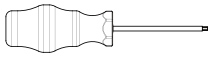
Machining method		
		
Facing	Chamfering	Ramping

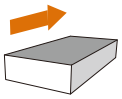
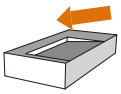
AFM45-SD12



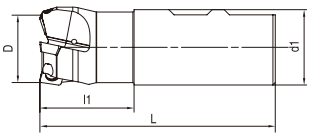
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM45-050-Z04-A22R-SD12-C	50	22	40	7		4	SD..1204
AFM45-063-Z05-A22R-SD12-C	63	22	40	7		5	
AFM45-080-Z06-A27R-SD12-C	80	27	50	7		6	
AFM45-100-Z07-A32R-SD12-C	100	32	50	7		7	
AFM45-125-Z08-A40R-SD12-C	125	40	63	7		8	

Remark: represent for coolant
represent for no coolant

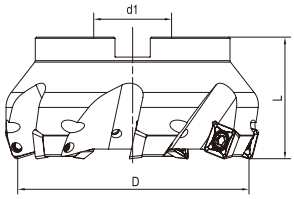
Dimensions	Spare parts		
Cutter diameter	Screw	Wrench	Torque
φ50-φ125			5.0Nm
	AST45115-55	ADT-T20	

Machining method		
		
Facing	Chamfering	Ramping

AFM75-SD09

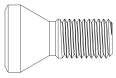
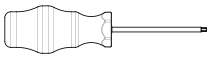


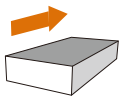
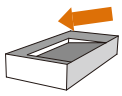
Designation	D	d1	L	l1	apmax	Coolant	Z	Insert
AFM75-025-Z02-W25R-SD09-C	25	25	96	40	6		2	SD..09T3
AFM75-032-Z03-W32R-SD09-C	32	32	100	40	6		3	



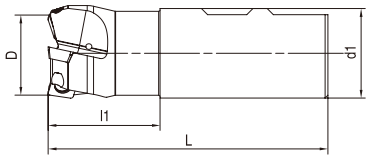
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM75-040-Z04-A16R-SD09-C	40	16	32	6		4	SD..09T3
AFM75-050-Z05-A22R-SD09-C	50	22	40	6		5	
AFM75-063-Z06-A22R-SD09-C	63	22	40	6		6	
AFM75-080-Z08-A27R-SD09-C	80	27	50	6		8	
AFM75-100-Z10-A32R-SD09-C	100	32	50	6		10	

Remark: represent for coolant
represent for no coolant

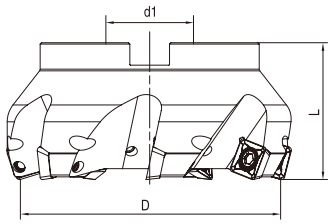
Dimensions	Spare parts		
Cutter diameter	Screw	Wrench	Torque
φ25-φ32			3.5Nm
	AST4075-60	ADT-T15	
φ40-φ100	AST409-60	ADT-T15	

Machining method	
 Facing	 Ramping

AFM75-SD12

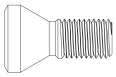
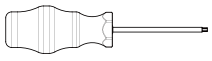


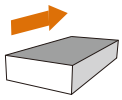
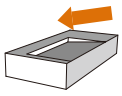
Designation	D	d1	L	l1	apmax	Coolant	Z	Insert
AFM75-032-Z02-W22R-SD12-C	32	32	114	49	8		2	SD..1204
AFM75-040-Z03-W32R-SD12-C	40	32	114	49	8		3	



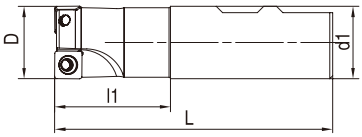
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM75-050-Z04-A22R-SD12-C	50	22	40	8		4	SD..1204
AFM75-063-Z05-A22R-SD12-C	63	22	40	8		5	
AFM75-080-Z06-A27R-SD12-C	80	27	50	8		6	
AFM75-100-Z07-A32R-SD12-C	100	32	50	8		7	
AFM75-125-Z08-A40R-SD12-C	125	40	63	8		8	

Remark: represent for coolant
represent for no coolant

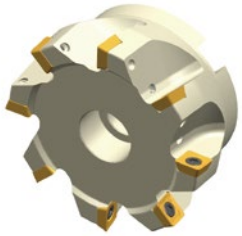
Dimensions	Spare parts		
Cutter diameter	Screw	Wrench	Torque
φ50-φ125			5.0Nm
	AST45115-55	ADT-T20	

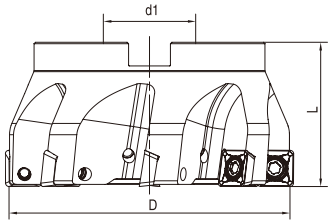
Machining method
 Facing  Ramping

AFM90-SD09



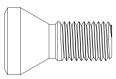
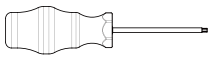
Designation	D	L	l1	apmax	Coolant	Z	Insert
AFM90-025-Z02-W25R-SD09-C	25	120	30	6		2	SD..09T3
AFM90-032-Z03-W32R-SD09-C	32	120	35	6		3	

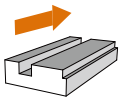
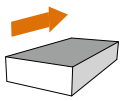
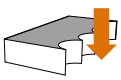
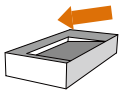




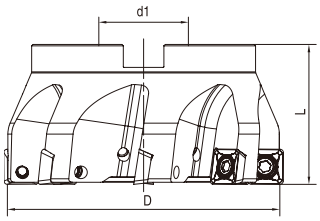
Designation	D	d1	L	apmax	Coolant	Z	Insert
AFM90-040-Z04-A16R-SD09-C	40	16	40	6		4	SD..09T3
AFM90-050-Z05-A22R-SD09-C	50	22	40	6		5	
AFM90-063-Z06-A22R-SD09-C	63	22	40	6		6	
AFM90-080-Z08-A27R-SD09-C	80	27	50	6		8	
AFM90-100-Z10-A32R-SD09-C	100	32	50	6		10	

Remark: represent for coolant
represent for no coolant

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

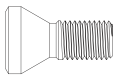
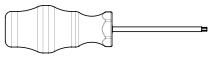
Machining method				
				
Slotting	Facing	Helical ramping	Plunging	Ramping

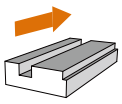
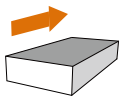
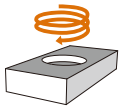
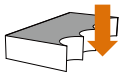
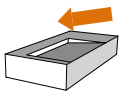
AFM90-SD12



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		
Cutter diameter	Screw	Wrench	Torque
φ50-φ125			5.0Nm
	AST45115-55	ADT-T20	

Machining method				
				
Slotting	Facing	Helical ramping	Plunging	Ramping

AFM45-SD09 Recommended Cutting Conditions

Machined Materials				Achteck Milling Grades Application Ranges																					Cutting depth and feed rate											
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U			AP351U			AP401U			AC301P			AC301K			AP351K			AW100K			SD..0903..											
				PVD			PVD			PVD			CVD			CVD			PVD			Uncoated			HR2						MR2					
				P15-35			P30-45			P20-40			P25-40			-			-			-														
				M15-35			M30-45			M20-40			M25-40			-			-			-														
				-			-			-			-			K10-35			K15-40			-													
				-			S30-45			S20-40			-			-			-			-														
				-			-			-			-			-			-			N05-15													
				-			-			-			-			-			-			-													
				Feed rate(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	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)																					Min	-	Max	Min	-	Max	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												0.12	-	0.30				0.10	-	0.25
	Alloyed steel	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												0.12	-	0.20				0.10	-	0.20
		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												0.12	-	0.22				0.10	-	0.20
	Precipitation-hardening stainless steel	1013	300	300	225	165	170	150	110	125	95	70	140	130	90																		0.10	-	0.18
K	Grey cast iron	700	220													480	310	140	390	280	130				0.3	-	5.0				0.1	-	3.0		
	Nodular Cast iron	880	260													450	295	140	420	300	140							0.12	-	0.25				0.10	-	0.20
	Malleable cast iron	800	250													500	365	230	430	290	230														
S	Fe based alloy	943	280				45	40	30																										
	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																			2750	1525	300											
	Aluminum alloy	447	130																			2000	1125	250											
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)

AFM45-SD12 Recommended Cutting Conditions

Machined Materials				Achteck Milling Grades Application Ranges																					Cutting depth and feed rate											
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U			AP351U			AP401U			AC301P			AC301K			AP351K			AW100K			SD..1204..										
				PVD			PVD			PVD			CVD			CVD			PVD			Uncoated			HR2						MR2				
				P15-35			P30-45			P20-40			P25-40			-			-			-													
				M15-35			M30-45			M20-40			M25-40			-			-			-													
				-			-			-			-			K10-35			K15-40			-												
				-			S30-45			S20-40			-			-			-			-													
				-			-			-			-			-			-			N05-15												
				-			-			-			-			-			-			-												
				Feed rate(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	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)																					Min	-	Max	Min	-	Max	Min	-	Max	Min	-	Max
P	Non-alloyed steel	<600	<180	450	340	290	230	205	170				430	230	120										3.0	-	5.0	0.20	-	0.45	1.0	-	3.0	0.15	-	0.30
		<950	<280	320	240	200	200	180	160				380	220	120																			
	Alloyed steel	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												0.20	-	0.35				0.15	-	0.25
		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												0.15	-	0.30				0.15	-	0.25
	Austenitic stainless steel	675	200	270	185	90	260	180	90	185	140	105	210	145	75																			
	Precipitation-hardening stainless steel	1013	300	300	225	165	170	150	110	125	95	70	140	130	90																		0.15	-	0.25
K	Grey cast iron	700	220													480	310	140	390	280	130													
	Nodular Cast iron	880	260													450	295	140	420	300	140						0.15	-	0.30				0.15	-	0.22
	Malleable cast iron	800	250													500	365	230	430	290	230													
S	Fe based alloy	943	280				45	40	30																									
	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																			2750	1525	300										
	Aluminum alloy	447	130																			2000	1125	250										
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)

AFM75-SD09 Recommended Cutting Conditions

Machined Materials				Achteck Milling Grades Application Ranges							Cutting depth and feed rate													
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U	AP351U	AP401U	AC301P	AC301K	AP351K	AW100K	SD..09T3..													
				PVD	PVD	PVD	CVD	CVD	PVD	Uncoated	HR2						MR2							
				P15-35	P30-45	P20-40	P25-40	-	-	-														
				M15-35	M30-45	M20-40	M25-40	-	-	-														
				-	-	-	-	K10-35	K15-40	-														
				-	S30-45	S20-40	-	-	-	-														
				-	-	-	-	-	-	N05-15														
				-	-	-	-	-	-	-														
				Feed rate(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	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)																					Min	-	Max	Min	-	Max	Min	-	Max	Min	-	Max
P	Non-alloyed steel	<600	<180	450	340	290	230	205	170				430	230	120													0.10	-	0.24				0.10	-	0.20
		<950	<280	320	240	200	200	180	160				380	220	120																				
	Alloyed steel	700-950	200-280	290	210	185	200	155	110				340	240	120													0.10	-	0.20				0.10	-	0.16
		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													0.10	-	0.18				0.10	-	0.16
	Austenitic stainless steel	675	200	270	185	90	260	180	90	185	140	105	210	145	75																				
	Precipitation-hardening stainless steel	1013	300	300	225	165	170	150	110	125	95	70	140	130	90																		0.10	-	0.15
K	Grey cast iron	700	220													480	310	140	390	280	130				3.0	-	7.0	0.10	-	0.20	1.0	-	3.0			
	Nodular Cast iron	880	260													450	295	140	420	300	140												0.10	-	0.16
	Malleable cast iron	800	250													500	365	230	430	290	230														
S	Fe based alloy	943	280				45	40	30																										
	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																			2750	1525	300											
	Aluminum alloy	447	130																			2000	1125	250											
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)

AFM75-SD12 Recommended Cutting Conditions

Machined Materials				Achteck Milling Grades Application Ranges																							Cutting depth and feed rate											
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U			AP351U			AP401U			AC301P			AC301K			AP351K			AW100K				SD..1204..											
				PVD			PVD			PVD			CVD			CVD			PVD			Uncoated				HR2						MR2					
				P15-35			P30-45			P20-40			P25-40			-			-			-															
				M15-35			M30-45			M20-40			M25-40			-			-			-															
				-			-			-			-			K10-35			K15-40			-														
				-			S30-45			S20-40			-			-			-			-															
				-			-			-			-			-			-			N05-15														
				-			-			-			-			-			-			-														
				Feed rate(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	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)																					Min	-	Max	Min	-	Max	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												0.16	-	0.36				0.12	-	0.24
	Alloyed steel	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												0.16	-	0.30				0.12	-	0.20
		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												0.12	-	0.24				0.12	-	0.20
	Precipitation-hardening stainless steel	1013	300	300	225	165	170	150	110	125	95	70	140	130	90																				0.12	-	0.16
K	Grey cast iron	700	220													480	310	140	390	280	130				3.0	-	10.0				1.0	-	3.0			
	Nodular Cast iron	880	260													450	295	140	420	300	140							0.12	-	0.24				0.10	-	0.18
	Malleable cast iron	800	250													500	365	230	430	290	230															
S	Fe based alloy	943	280				45	40	30																											
	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																			2750	1525	300												
	Aluminum alloy	447	130																			2000	1125	250												
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-SD09 Recommended Cutting Conditions

Machined Materials				Achteck Milling Grades Application Ranges							Cutting depth and feed rate								
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U	AP351U	AP401U	AC301P	AC301K	AP351K	AW100K	SD..09T3..								
				PVD	PVD	PVD	CVD	CVD	PVD	Uncoated	HR2						MR2		
				P15-35	P30-45	P20-40	P25-40	-	-	-									
				M15-35	M30-45	M20-40	M25-40	-	-	-									
				-	-	-	-	K10-35	K15-40	-									
				-	S30-45	S20-40	-	-	-	-									
				-	-	-	-	-	-	N05-15									
				-	-	-	-	-	-	-									
				Feed rate(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	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)							Min	-	Max	Min	-	Max	Min	-	Max	Min	-	Max
P	Non-alloyed steel	<600	<180	450 340 290	230 205 170		430 230 120							0.10	-	0.24				0.10	-	0.20
		<950	<280	320 240 200	200 180 160		380 220 120															
	Alloyed steel	700-950	200-280	290 210 185	200 155 110		340 240 120							0.10	-	0.20				0.10	-	0.16
		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							0.10	-	0.18				0.10	-	0.16
	Austenitic stainless steel	675	200	270 185 90	260 180 90	185 140 105	210 145 75															
	Precipitation-hardening stainless steel	1013	300	300 225 165	170 150 110	125 95 70	140 130 90													0.10	-	0.15
K	Grey cast iron	700	220					480 310 140	390 280 130		3.0	-	8.0	0.10	-	0.20	1.0	-	3.0	0.10	-	0.16
	Nodular Cast iron	880	260					450 295 140	420 300 140													
	Malleable cast iron	800	250					500 365 230	430 290 230													
S	Fe based alloy	943	280		45 40 30																	
	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							275 150 125 300												
	Aluminum alloy	447	130							200 112 125 250												
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

Machined Materials				Achteck Milling Grades Application Ranges							Cutting depth and feed rate																	
ISO	Material classification	Tensile strength (N/mm²)	Hardness (HB)	AP301U	AP351U	AP401U	AC301P	AC301K	AP351K	AW100K	SD..1204..																	
				PVD	PVD	PVD	CVD	CVD	PVD	Uncoated	HR2									MR2								
				P15-35	P30-45	P20-40	P25-40	-	-	-																		
				M15-35	M30-45	M20-40	M25-40	-	-	-																		
				-	-	-	-	K10-35	K15-40	-																		
				-	S30-45	S20-40	-	-	-	-																		
				-	-	-	-	-	-	N05-15																		
				-	-	-	-	-	-	-																		
				Feed rate(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	0.1	0.3	0.5	ap(mm)			Feed(mm/z)			ap(mm)			Feed(mm/z)		
				Cutting speed(m/min)																								Min	-	Max	Min	-	Max	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															0.16	-	0.36				0.12	-	0.24
	Alloyed steel	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															0.16	-	0.30				0.12	-	0.20
		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															0.12	-	0.24				0.12	-	0.20
	Austenitic stainless steel	675	200	270	185	90	260	180	90	185	140	105	210	145	75																							
	Precipitation-hardening stainless steel	1013	300	300	225	165	170	150	110	125	95	70	140	130	90																					0.12	-	0.16
K	Grey cast iron	700	220													480	310	140	390	280	130				3.0	-	11.0				1.0	-	3.0			
	Nodular Cast iron	880	260													450	295	140	420	300	140							0.12	-	0.24				0.10	-	0.18
	Malleable cast iron	800	250													500	365	230	430	290	230															
S	Fe based alloy	943	280				45	40	30																													
	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																			275	150	300													
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H	Hardened steel	-	50-60HRC																																			
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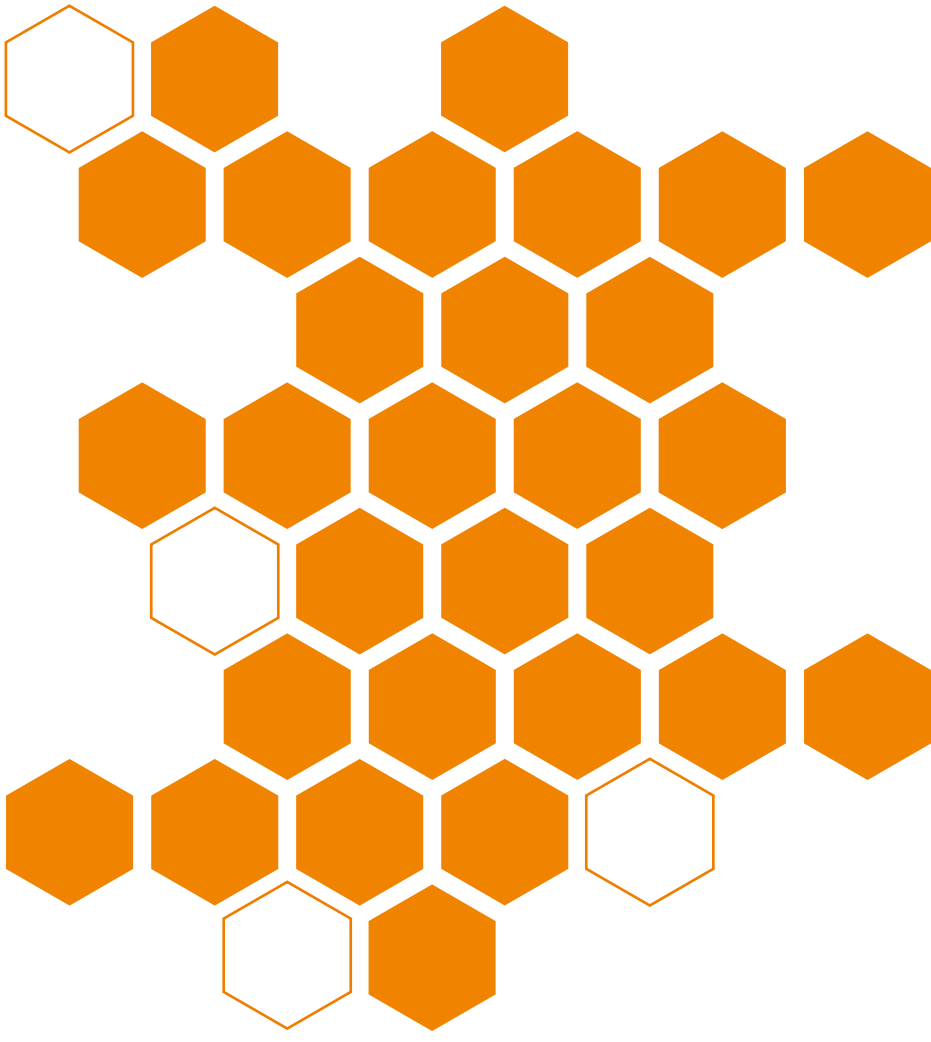
The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, work piece clamping and coolants. Average chip thickness=hm(hm=fzxSin KappaR)



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