

**NEW
PRODUCT!**

ASM90-A012 Shoulder Milling



AOMT 1204..Product Introduction

Achteck is launching ASM90-AO12 series, a new positive shoulder milling tool with two edges. The insert is designed with spiral cutting edge for light and fast cutting, and it has dramatically improved the strength of cutting edge and effectively enhanced tool performance with new geometry. The insert's the substrate and coating, are suitable for machining various material groups, especially heat-resistant alloy, Titanium alloy and stainless steel.

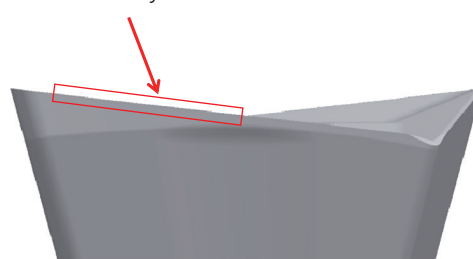
AOMT 1204..Insert Introduction

Features

- Approach angle: precision shoulder milling
- The insert with spiral edge design is for light cutting and good universality
- The insert with wiper design can get good surface finish
- a_{pmax} : 11mm
- Radius range: R0.8, 1.2, 1.6, 2.0, 2.4, 3.1, 4.0, for various applications



Gradually start to cut, reduce the cutting force effectively



Spiral cutting edge



R0.8



R1.2



R1.6



R2.0



R2.4



R3.1

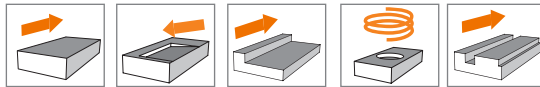
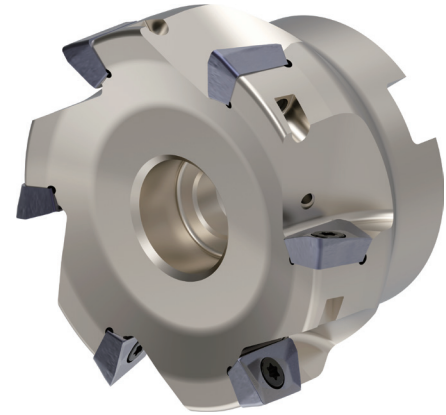


R4.0



Insert:

- Radius range: R0.8-R4.0
- Geometry: MM4 (general purpose)
- Material: AP251U, AP351M, AP403M, AP251K, AP403S
- Two pitch types of cutter: close and coarse
- Cutter drical diameter: $\phi 20$ -80mm
- Four kinds of coupling
 - Cylindrical shank: $\phi 20$ -32mm
 - Weldon shank: $\phi 20$ -40mm
 - Arbor: $\phi 40$ -80mm
 - Screw clamping modular coupling: $\phi 20$ -35mm



AOMT 1204..Customer benefits

Product features	Customer benefits
Positive square shoulder milling cutter Wide radius range: R0.8, R1.2, R1.6, R2.0, R2.4, R3.1, R4.0 Spiral angle design Stronger tool body design	Lower cost Wider application More reliable machining
PVD technology Reduces coating chipping High wear resistance, and good heat resistance Good thermal crack resistance	Higher tool life Higher stability Reduce chipping risk Enhance productivity and reduce cost
New ultrafine grain substrate AP251U/AP351M The matrix structure is uniform and the strength is high. Strong crack resistance	
New insert coating post-treatment technology Reduce surface friction Reduce coating peeling risk	Higher machining parameter Longer tool life
Various cutter design Various coupling type Various pitch design	Suitable for various machining conditions Suitable for various machines Suitable for various materials

◆ AOMT 1204..Geometry and Grade Introduction

Chip breaker features

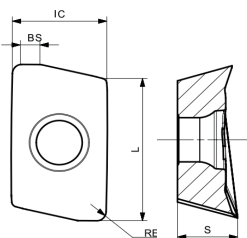
Geometry	Cutting edge shape	Application
MM4 General purpose		- Used for medium machining - First choice of general machining

Grade application

Grade	Coating	ISO material group					
		P	M	K	N	S	H
AP251U	PVD	●	◐				
AP351M	PVD	◐	●			◐	
AP403M	PVD	◐	●			◐	
AP251K	PVD			●			
AP403S	PVD		●			●	

●Marked: 1st choice ◐Marked: 2nd choice

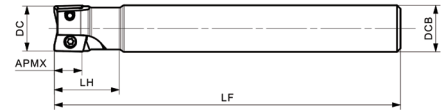
◆ AOMT 1204..Insert



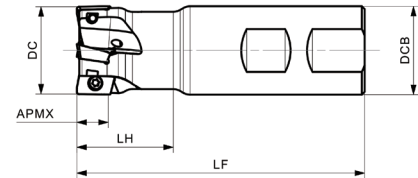
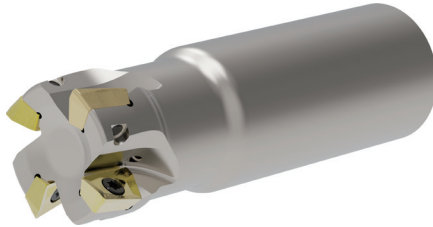
Product code						Good condition ● General condition ◐ Bad condition ✖				
	Machining conditions					●	◐	✖	●	✖
	Dimensions					Grades				
	L	IC	S	RE	BS	P	M	K	S	
						AP251U	AP351M	AP403M	AP251K	AP403S
AOMT 120408ER-MM4	12.8	8.15	5.07	0.8	1.56	●	●	●	●	●
AOMT 120412ER-MM4	12.8	8.15	5.07	1.2	1.18	●	●	●		●
AOMT 120416ER-MM4	12.8	8.15	5.07	1.6	1.2	●	●	●		●
AOMT 120420ER-MM4	12.8	8.15	5.07	2.0	1.0	●	●	●		●
AOMT 120424ER-MM4	12.8	8.15	5.07	2.4	0.9	●	●	●		●
AOMT 120431ER-MM4	12.8	8.15	5.07	3.1	0.6	●	●	●		●
AOMT 120440ER-MM4	12.8	8.15	5.07	4.0	0.8	●	●	●		●

●Stocked ▲Stocked at present, non-stocked in the future

ASM90-AO12 Cutter

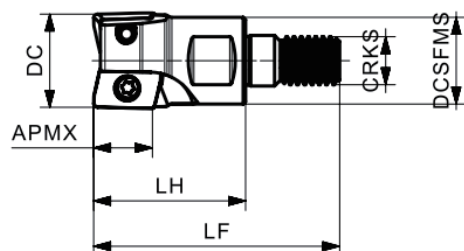


Product code	DC	DCB	LF	LH	APMX	Coolant	Z	Insert
ASM90-020-Z02-C20R-AO12-L150-C	20	20	150	30	11		2	AOMT 12
ASM90-025-Z03-C25R-AO12-L170-C	25	25	170	35	11		3	
ASM90-032-Z04-C32R-AO12-L250-C	32	32	250	40	11		4	

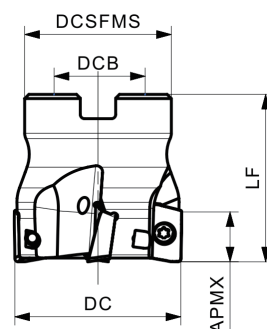
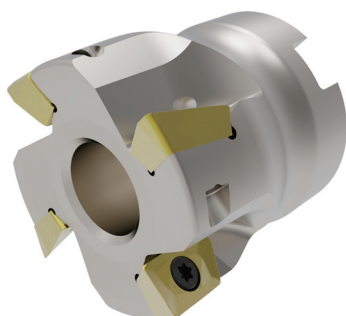


Product code	DC	DCB	LF	LH	APMX	Coolant	Z	Insert
ASM90-020-Z02-W20R-AO12-C	20	20	85	30	11		2	AOMT 12
ASM90-025-Z03-W20R-AO12-C	25	25	95	35	11		3	
ASM90-032-Z04-W32R-AO12-C	32	32	105	40	11		4	
ASM90-040-Z04-W32R-AO12-C	40	32	120	45	11		4	

ASM90-AO12 Cutter



Product code	DC	LF	LH	CRKS	DCSFMS	APMX	Coolant	Z	Insert
ASM90-020-Z02-M10R-AO12-C	20	51	31	M10	18	11		2	AOMT 12
ASM90-025-Z03-M12R-AO12-C	25	59	37	M12	23	11		3	
ASM90-032-Z04-M16R-AO12-C	32	72	48	M16	29	11		4	
ASM90-035-Z04-M16R-AO12-C	35	72	48	M16	29	11		4	

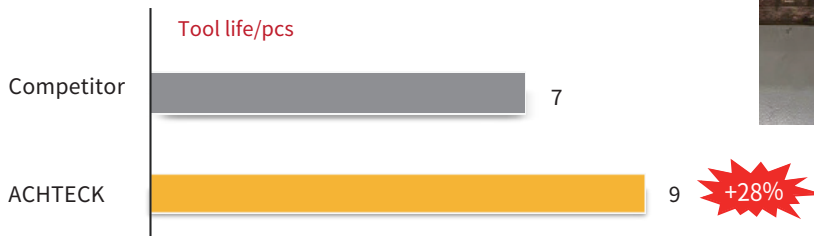


Product code	DC	DCB	LF	LH	APMX	Coolant	Z	Insert
ASM90-040-Z04-A16R-AO12-C	40	16	40	35	11		4	AOMT 12
ASM90-050-Z05-A22R-AO12-C	50	22	40	42	11		5	
ASM90-050-Z07-A22R-AO12-C	50	22	40	42	11		7	
ASM90-063-Z06-A22R-AO12-C	63	22	40	48	11		6	
ASM90-063-Z08-A22R-AO12-C	63	22	40	48	11		8	
ASM90-080-Z07-A27R-AO12-C	80	27	50	62	11		7	
ASM90-080-Z10-A27R-AO12-C	80	27	50	62	11		10	

Dimension (mm)	Spare Parts		
Cutter diameter	Screw	Wrench	Torque
φ20-80	SP035086	DT-TP10	3.5Nm

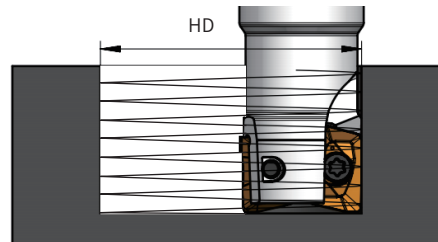
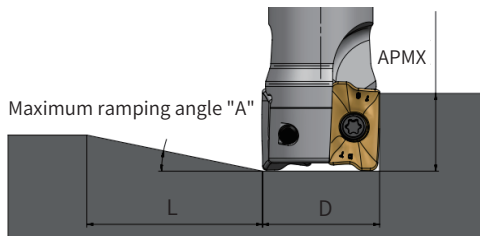
ASM90-AO12 Case Story

Workpiece name: Aircraft structural part
 Material: TC4
 Insert: AOMT 120431ER-MM4 AP403S
 Cutter: ASM90-032-Z04-W32R-AO12-C
 Machining position: Pocket milling
 Parameter: $V_c=40\text{m/min}$, $a_p=3\text{mm}$, $a_e=15\text{mm}$, $f_z=0.08\text{mm}$
 Coolant: Wet



Resource: End user

ASM90-AO12 Technical Information



Cutter diameter (D)	Ramping			Helical Interpolate milling		
	Maximum ramping angle -A	Minimum length -L (mm)	APMX (mm)	Minimum hole diameter HDmin	Maximum hole diameter HDmax	Maximum pitch (per round)
16	8.1	77.0	11	17		0.4
					32	6.1
20	5.3	119.6	11	25		1.2
					40	4.9
25	3.6	175.6	11	35		1.7
					50	4.2
32	1.7	378.0	11	49		1.3
					64	2.5
35	1.5	424.5	11	55		1.4
					70	2.4
40	1.3	468.9	11	65		1.6
					80	2.5
50	1.3	501.5	11	85		2.0
					100	2.9
63	0.9	708.6	11	111		2.0
					126	2.6
80	0.7	875.2	11	145		2.2
					160	2.7