

Face milling tools

Kr:45°

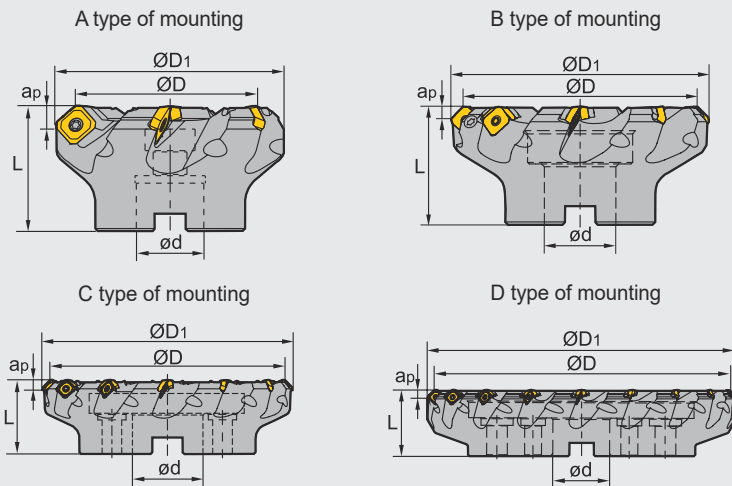


FMA01

P M K N S



Coarse pitch



Specification of tools

Type		Dimensions(inch)						Mounting type
		ØD	ØD ₁	ød	L	a _p max	Z (Number of teeth)	
FMA01	-2.00"-A0.75"-SE12-04	2.000	2.510	0.750	1.750	0.236	4	A
	-2.50"-A0.75"-SE12-05	2.500	3.010	0.750	1.750	0.236	5	A
	-3.00"-A1.00"-SE12-06	3.000	3.510	1.000	2.000	0.236	6	A
	-4.00"-B1.25"-SE12-07	4.000	4.510	1.250	2.000	0.236	7	B
	-5.00"-B1.50"-SE12-08	5.000	5.510	1.500	2.500	0.236	8	B
	-6.00"-B1.50"-SE12-07	6.000	6.510	1.500	2.500	0.236	7	B
	-6.00"-B1.50"-SE12-10	6.000	6.510	1.500	2.500	0.236	10	B
	-8.00"-C2.50"-SE12-08	8.000	8.510	2.500	2.500	0.236	8	C
	-8.00"-C2.50"-SE12-12	8.000	8.510	2.500	2.500	0.236	12	C
	-10.0"-C2.50"-SE12-10	10.000	10.510	2.500	2.500	0.236	10	C
	-10.0"-C2.50"-SE12-14	10.000	10.510	2.500	2.500	0.236	14	C
	-12.0"-D2.50"-SE12-18	12.000	12.510	2.500	2.750	0.236	18	D
	-4.00"-B1.25"-SE18-04	4.000	4.510	1.250	2.500	0.384	4	B
	-5.00"-B1.50"-SE18-05	5.000	5.510	1.500	2.500	0.384	5	B
	-6.00"-B1.50"-SE18-06	6.000	6.510	1.500	2.500	0.384	6	B
	-8.00"-C2.50"-SE18-08	8.000	8.510	2.500	2.500	0.384	8	C
	-10.0"-C2.50"-SE18-10	10.000	10.510	2.500	2.500	0.384	10	C
	-12.0"-D2.50"-SE18-12	12.000	12.510	2.500	3.000	0.384	12	D

Face milling tools

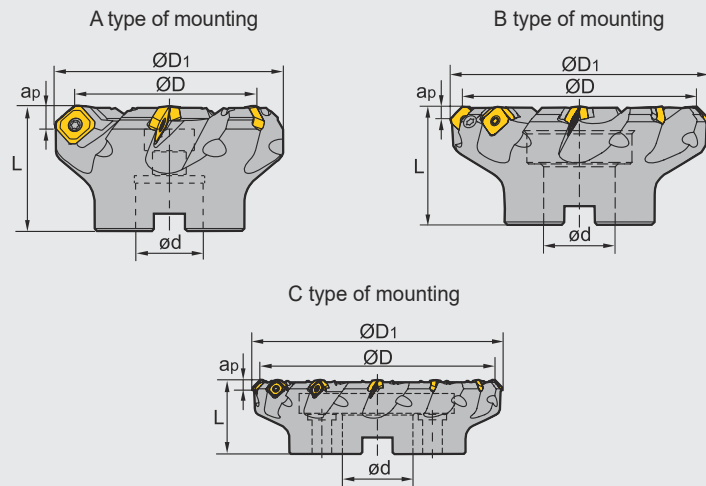
Kr:45°



FMA01 P M K N S



Close pitch



Specification of tools

Type		Dimensions(inch)						Mounting type
		ØD	ØD ₁	ød	L	a _{pmax}	Z (Number of teeth)	
FMA01	-2.00"-A0.75"-SE12-05	2.000	2.510	0.750	1.750	0.236	5	A
	-2.50"-A0.75"-SE12-06	2.500	3.010	0.750	1.750	0.236	6	A
	-3.00"-A1.00"-SE12-08	3.000	3.510	1.000	2.000	0.236	8	A
	-4.00"-B1.25"-SE12-10	4.000	4.510	1.250	2.000	0.236	10	B
	-5.00"-B1.50"-SE12-12	5.000	5.510	1.500	2.500	0.236	12	B
	-6.00"-B1.50"-SE12-16	6.000	6.510	1.500	2.500	0.236	16	B
	-8.00"-C2.50"-SE12-20	8.000	8.510	2.500	2.500	0.236	20	C
	-10.00"-C2.50"-SE12-24	10.000	10.510	2.500	2.500	0.236	24	C
	-4.00"-B1.25"-SE18-06	4.000	4.510	1.250	2.500	0.384	6	B
	-5.00"-B1.50"-SE18-07	5.000	5.510	1.500	2.500	0.384	7	B
	-8.00"-C2.50"-SE18-12	8.000	8.510	2.500	2.500	0.384	12	C
	-10.00"-C2.50"-SE18-14	10.000	10.510	2.500	2.500	0.384	14	C

Spare parts

Diameter ØD	Insert specification	Insert screw	Shim	Shim screw	Wrench		Sketch of installation
							
Ø2", Ø2.5" Ø3", Ø4"	SEET12T3-□□	I60M3.5×10	--	--	WT15IS	--	
Ø5", Ø6" Ø8", Ø10"	SEET12T3-□□	I60M3.5×12	S13BS	SM5×7XA		WH35L	
Ø4"~Ø8"	SEET18T6-□□	I60M5×17	S18BS	SM8×9XA	WT20IT	WH50L	

Face milling tools

Kr:45°



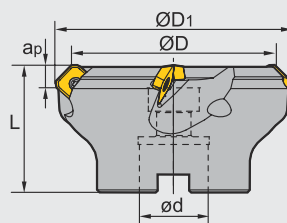
FMA02

P M K N S

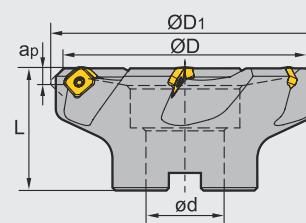


Coarse pitch differential

A type of mounting



B type of mounting

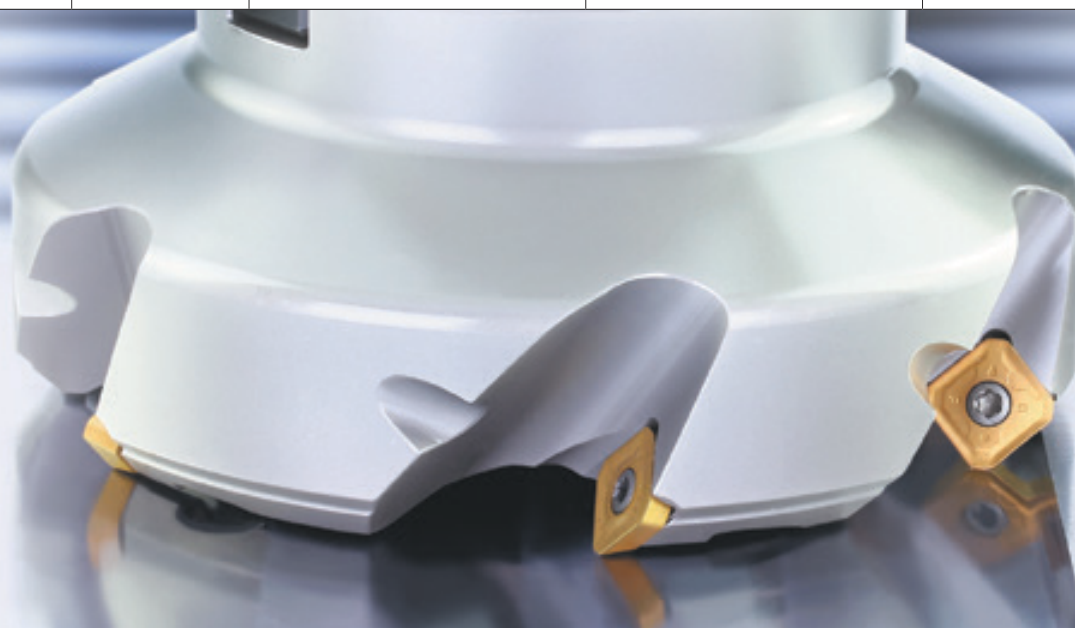


Specification of tools

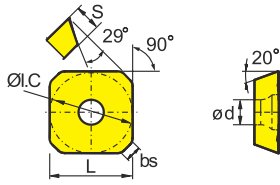
Type		Dimensions(inch)						Mounting type
		ØD	ØD1	ød	L	apmax	Z (Number of teeth)	
FMA02	-2.00"-A0.75"-SE12-04	2.000	2.510	0.750	1.750	0.236	4	A
	-2.50"-A0.75"-SE12-05	2.500	3.010	0.750	1.750	0.236	5	A
	-3.00"-A1.00"-SE12-05	3.000	3.510	1.000	2.000	0.236	5	A
	-4.00"-B1.25"-SE12-07	4.000	4.510	1.250	2.000	0.236	7	B
	-5.00"-B1.50"-SE12-08	5.000	5.510	1.500	2.500	0.236	8	B

Spare parts

Diameter ØD	Insert specification	Insert screw	Wrench	Sketch of installation
				
Ø2.00"~Ø5.00"	SEET12T3-□□	I60M3.5×10	WT15IS	

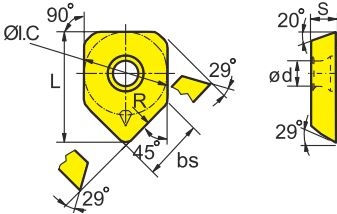
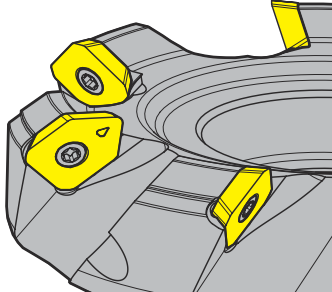


Selection of inserts



😊 Good working conditions 😐 General working conditions ☹️ Adverse working conditions

Workpiece material	P Steel	M Stainless steel	K Cast iron	N Ferrite materials	S Heat-resistant steel	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
P Steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
M Stainless steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
K Cast iron	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
N Ferrite materials	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
S Heat-resistant steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊

Insert shape	Type	Dimensions(inch)						Coated grade												Cermet		Cemented carbide			
		L	ØI.C	S	ød	bs	R	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	SEET12T3-DF	0.528	0.528	0.156	0.161	0.100	-	●			○				●			○							
	SEET12T3-CF	0.528	0.528	0.156	0.161	0.100	-			○					○			○							
	SEET12T3-EF	0.528	0.528	0.156	0.161	0.100	-								●			○							
	SEET12T3-DM	0.528	0.528	0.156	0.161	0.100	-	●			○				○			●							
	SEET18T6-DM	0.709	0.709	0.24	0.217	0.059	-	●	●						●										
	SEET12T3-CM	0.528	0.528	0.156	0.161	0.100	-			●					●			○							
	SEET12T3-EM	0.528	0.528	0.156	0.161	0.100	-								●			●							
	SEET18T6-EM	0.709	0.709	0.240	0.217	0.059	-		○								○								
	SEET12T3-DR	0.528	0.528	0.156	0.161	0.100	-	●							●			●							
	SEET12T3-CR	0.528	0.528	0.156	0.161	0.100	-			●					●			●							
	SEET12T3-LH	0.528	0.528	0.156	0.161	0.100	-																○	●	
	SEET12T3-W	0.702	0.528	0.156	0.161	0.372	19.685	●	●						●					●					
	SEET18T6-W	0.976	0.709	0.240	0.217	0.433	19.685								○										
																									

● Recommended grade ○ Produce according to order

Chipbreaker selection for FMA01

Function Classification	For finishing	For semi-finishing	For roughing
P	-DF	-DM	-DR
M,S	-EF	-EM	
K	-CF	-CM	-CR
AL	-LH		

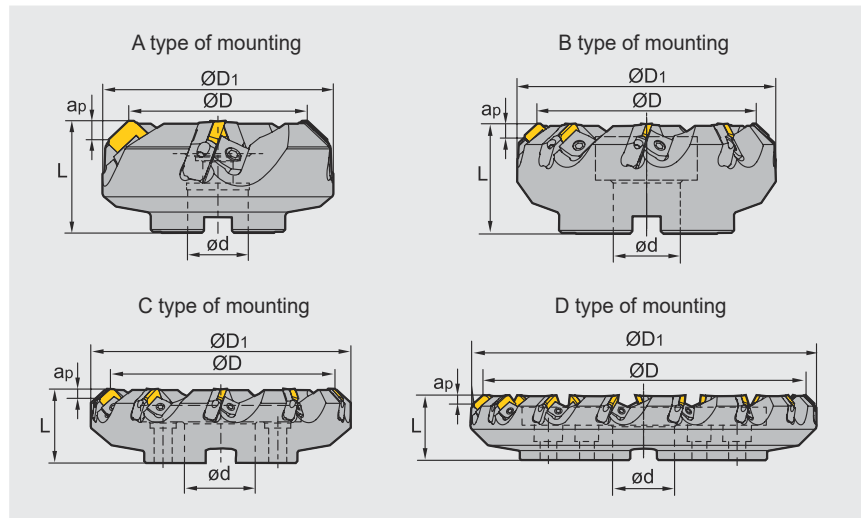
Recommended cutting parameters

Recommended cutting parameters							
Workpiece material		Hardness HB	Insert grade	Cutting parameters			
				V(SFPM)	f(IPT)		
					-DF	-DM	-DR
P	Low-carbon steel, Soft steel	≤180	YBM253	900(700-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBC302	900(700-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG205	900(650-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YB9320	900(650-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG302	750(550-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
	High-carbon steel, Alloy steel	180-280	YBM253	800(700-1000)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG205	800(600-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YB9320	800(600-1200)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG302	700(500-1100)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
	Alloy tool steel	280-350	YBM253	700(600-1000)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG205	700(550-1100)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YB9320	700(550-1100)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
			YBG302	600(400-1000)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
M					-EF	-EM	
	Stainless steel	≤270	YBM253	500(400-800)	0.006(0.004-0.008)	0.008(0.004-0.012)	
			YBG205	500(360-900)	0.006(0.004-0.008)	0.008(0.004-0.012)	
			YB9320	500(360-900)	0.006(0.004-0.008)	0.008(0.004-0.012)	
			YBG302	450(300-800)	0.006(0.004-0.008)	0.008(0.004-0.012)	
K					-CF	-CM	-CR
	Cast iron	180-250	YBG105	700(400-1000)	0.006(0.004-0.008)	0.008(0.004-0.012)	0.012(0.008-0.016)
N					-LH		
	Al alloy steel	-	YD101	1000-	0.010(0.004-0.016)		
			YD201	1000-			
S					-EF	-EM	
	High-temperature alloy	≤400	YBG105	150(60-200)	0.004(0.004-0.008)	0.006(0.004-0.012)	

Face milling tools

Kr:45°

FMA03



Specification of tools

Type		Dimensions(inch)						Mounting type
		ØD	ØD ₁	ød	L	a _{pmax}	Z (Number of teeth)	
FMA03	-3.00"-A1.00"-SE12-04	3.000	3.858	1.000	2.000	0.217	4	A
	-4.00"-B1.25"-SE12-05	4.000	4.858	1.250	2.000	0.217	5	B
	-5.00"-B1.50"-SE12-06	5.000	5.858	1.500	2.500	0.217	6	B
	-6.00"-B1.50"-SE12-08	6.000	6.858	1.500	2.500	0.217	8	B
	-8.00"-C2.50"-SE12-10	8.000	8.858	2.500	2.500	0.217	10	C
	-10.0"-C2.50"-SE12-12	10.000	10.858	2.500	2.500	0.217	12	C
	-12.0"-D2.50"-SE12-15	12.000	12.858	2.500	2.500	0.217	15	D
	-3.00"-A1.00"-SE15-04	3.000	3.858	1.000	2.000	0.295	4	A
	-4.00"-B1.25"-SE15-05	4.000	4.858	1.250	2.000	0.295	5	B
	-5.00"-B1.50"-SE15-06	5.000	5.858	1.500	2.500	0.295	6	B
	-6.00"-B1.50"-SE15-08	6.000	6.858	1.500	2.500	0.295	8	B
	-8.00"-C2.50"-SE15-10	8.000	8.858	2.500	2.500	0.295	10	C
	-10.0"-C2.50"-SE15-12	10.000	10.858	2.500	2.500	0.295	12	C
	-12.0"-D2.50"-SE15-15	12.000	12.858	2.500	2.500	0.295	15	D

Spare parts

Locator	Wedge	Wedge screw	Locator screw	Wrench	Sketch of installation
					
LSE 12R/L (Suitable for 0.472 inch inserts)	W01R/L	DM8×21X	LOM5×15.1	WT20T WH40T	
LSE 15R/L (Suitable for 0.591 inch inserts)					

	Good working conditions	General working conditions	Reverse working conditions
P Steel	😊😊	😞😞😞😞😞😞	😊😊
M Stainless steel	😞😞	😞😞😞😞😞	😞😞😊
K Cast iron		😞😞😞😞	😞
N Ferrite materials			😊😊
S Heat-resistant steel		😊😞😞😞😞	😞😞

[illegible]

● Recommended grade ○ Produce according to order



Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(SFPM)	f(IPT)
P	Low-carbon steel, Soft steel	≤180	YNG151	1400 (1100-1600)	0.008 (0.004-0.016)
			YBM253 YBC302	900 (700-1100)	0.008 (0.004-0.016)
			YBM253	700 (600-1000)	0.01 (0.006-0.012)
			YBG202 YBG302	900 (650-1200)	0.008 (0.004-0.012)
				900 (650-1200)	0.008 (0.004-0.012)
	High-carbon steel, Alloy steel	180-280	YNG151	1300 (1000-1600)	0.008 (0.004-0.016)
			YBM253 YBC302	800 (650-1000)	0.008 (0.006-0.016)
			YBM253	650 (500-900)	0.010 (0.006-0.012)
			YBG202 YBG302	800 (600-1100)	0.008 (0.004-0.012)
				800 (600-1100)	0.008 (0.004-0.012)
	Alloy tool steel	280-350	YNG151	1100 (1000-1500)	0.008 (0.004-0.016)
			YBM253 YBC302	700 (600-1000)	0.008 (0.004-0.016)
			YBM253	600 (500-800)	0.01 (0.006-0.012)
			YBG202 YBG302	700 (550-1100)	0.008 (0.004-0.012)
				700 (550-1100)	0.008 (0.004-0.012)
M	Stainless steel	≤270	YNG151	700 (500-900)	0.008 (0.004-0.016)
			YBM253	400 (300-700)	0.008 (0.004-0.016)
			YBG202 YBG302	450 (300-800)	0.008 (0.004-0.012)
				450 (300-800)	0.008 (0.004-0.012)
K	Cast iron	180-250	YBG102	700 (400-1000)	0.008 (0.004-0.012)
			YBD252	650 (490-820)	0.008 (0.004-0.016)
			YD201	300 (260-500)	0.01 (0.004-0.016)

Face milling tools

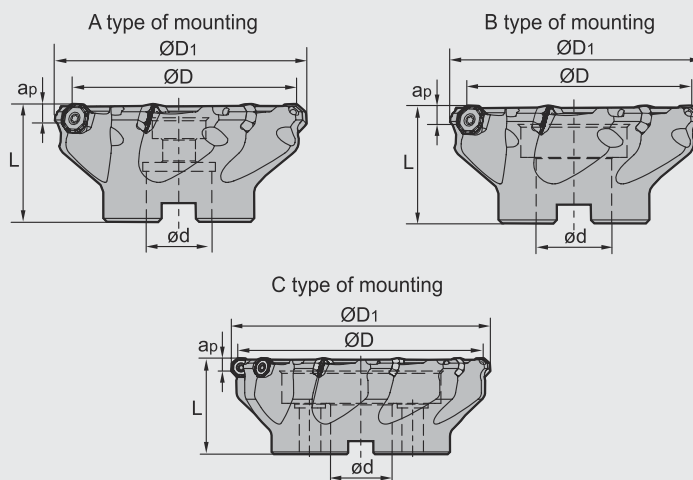
Kr:45°



FMA04



Screw clamping



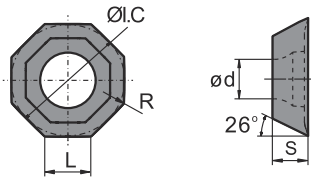
Specification of tools

Type		Dimensions(inch)						Mounting type
		ØD	ØD1	ød	L	apmax	Z (Number of teeth)	
FMA04	-2.00"-A0.75"-OF05-04	2.000	2.356	0.750	1.750	0.138	4	A
	-2.00"-A0.75"-OF05-05	2.000	2.356	0.750	1.750	0.138	5	A
	-2.50"-A0.75"-OF05-05	2.500	2.856	0.750	1.750	0.138	5	A
	-3.00"-A1.00"-OF05-06	3.000	3.356	1.000	2.000	0.138	6	A
	-4.00"-B1.25"-OF05-07	4.000	4.356	1.250	2.000	0.138	7	B
	-5.00"-B1.50"-OF05-08	5.000	5.356	1.500	2.500	0.138	8	B
	-6.00"-B1.50"-OF05-10	6.000	6.356	1.500	2.500	0.138	10	B
	-6.00"-C1.50"-OF05-10	6.000	6.356	1.500	2.500	0.138	10	C

Spare parts

Adaptable tool holders	Insert screw	Wrench	Sketch of installation
			
Ø2", Ø2.5"	I60M4×8.4	WT15IS	
Ø3", Ø4", Ø5", Ø6"	I60M4×10	WT15IS	

Selection of inserts



😊 Good working conditions 😐 General working conditions 😞 Adverse working conditions

Workpiece material	P Steel	M Stainless steel	K Cast iron	N Ferrite materials	S Heat-resistant steel	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
P Steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
M Stainless steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
K Cast iron	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
N Ferrite materials	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
S Heat-resistant steel	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊

Insert shape	Type	Dimensions(inch)					Coated grade												Cermet	Cemented carbide			
		L	ØI.C	S	ød	R	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	OFKT05T3-DF	0.207	0.500	0.156	0.173	0.020							●										
	OFKT05T3-DM	0.207	0.500	0.156	0.173	0.020		○					●			●	●						
	OFKT05T3-LH	0.207	0.500	0.156	0.173	0.020																○	

● Recommended grade ○ Produce according to order

Chipbreaker selection for FMA04 milling inserts

Classification \ Function		For finishing	For semi-finishing
P		-DF	-DM
M			
K			
AL		-LH	



Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting parameters			
			V(SFPM)	f(IPT)		
				-DF	-DM	
P	Low-carbon steel, Soft steel	≤180	YBM253	900(700-1100)	0.008(0.004-0.012)	0.01(0.004-0.016)
			YBG202	900(650-1200)	0.008(0.004-0.012)	0.01(0.004-0.016)
			YBG302 YB9320	750(550-1200)	0.008(0.004-0.012)	0.01(0.004-0.016)
	High-carbon steel, Alloy steel	180-280	YBM253	800(650-1100)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBG202	800(600-1100)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBG302 YB9320	700(500-1100)	0.008(0.004-0.012)	0.01(0.004-0.016)
	Alloy tool steel	280-350	YBM253	700(600-1000)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBG202	700(550-1100)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBG302 YB9320	600(400-1000)	0.008(0.004-0.012)	0.01(0.004-0.016)
M	Stainless steel	≤270	YBG202	450(300-800)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBM253	490(390-820)	0.006(0.004-0.012)	0.008(0.004-0.016)
			YBG302 YB9320	500(400-800)	0.006(0.004-0.012)	0.008(0.004-0.016)
K	Cast iron	180-250	YBG105	700(400-1000)	0.008(0.004-0.012)	0.01(0.004-0.016)
N					-LH	
	Aluminium alloy	-	YD101	1000-	0.006(0.002-0.012)	



FMA04 Series

P M K N S

Coarse pitch and close pitch available.

Positive axial angle and radial angle pocket, with large rake angle insert design, which achieve low cutting force and good chip control.

Kr:45°

Chipbreaker for Aluminum



LH chipbreaker

Large rake angle design with sharp cutting edge;
Polished rake face, precision ground the periphery.

Chipbreakers for universal purpose

GL chipbreaker

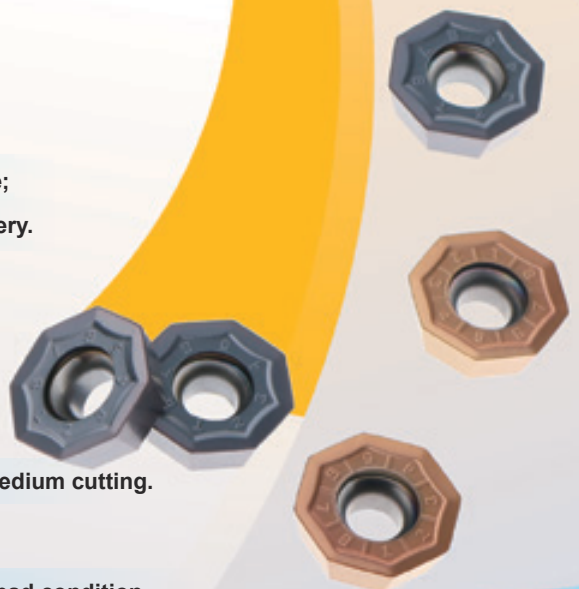
Focus on cutting edge sharpness, suitable for light and medium cutting.

GH chipbreaker

Focus on strength, suitable for heavy cutting and bad condition.

GM chipbreaker

Focus on both sharpness and strength, suitable for medium cutting.



Face milling tools

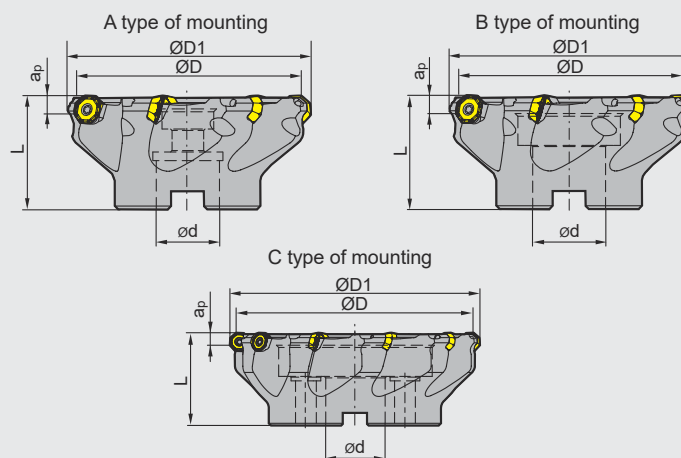
Kr:45°



FMA04 P M K N S



Screw clamping



Specification of tools

Type		Dimensions(inch)						Mounting type
		ØD	ØD1	ød	L	apmax	Z (Number of teeth)	
FMA04 Coarse pitch	-2.00"-A0.75"-OD06-04C	2.000	2.394	0.750	1.750	0.157	4	A
	-2.50"-A0.75"-OD06-05C	2.500	2.894	0.750	1.750	0.157	5	A
	-3.00"-A1.00"-OD06-06C	3.000	3.394	1.000	2.000	0.157	6	A
	-4.00"-A1.25"-OD06-07C	4.000	4.394	1.250	2.000	0.157	7	A
	-5.00"-B1.50"-OD06-08	5.000	5.394	1.500	2.500	0.157	8	B
	-6.00"-B2.00"-OD06-10	6.000	6.394	2.000	2.500	0.157	10	B
Close pitch	-2.00"-A0.75"-OD06-05C	2.000	2.394	0.750	1.750	0.157	5	A
	-2.50"-A0.75"-OD06-06C	2.500	2.894	0.750	1.750	0.157	6	A
	-3.00"-A1.00"-OD06-07C	3.000	3.394	1.000	2.000	0.157	7	A
	-4.00"-A1.25"-OD06-09C	4.000	4.394	1.250	2.000	0.157	9	A
	-5.00"-B1.50"-OD06-10	5.000	5.394	1.500	2.500	0.157	10	B
	-6.00"-B2.00"-OD06-12	6.000	6.394	2.000	2.500	0.157	12	B

Spare parts

Adaptable tool holders	Insert screw	Wrench	Sketch of installation
Ø2", Ø2.5"	I60M5×13	WT20IP	
Ø3", Ø4", Ø5"		WT20IS	
Ø6		WT20IT	

	Good working conditions	General working conditions	Reverse working conditions
P Steel	😊😊	😞😞😞😞😞😞	😊😊
M Stainless steel	😞😞	😞😞😞😞😞	😞😞😊
K Cast iron		😞😞😞😞	😞
N Ferrite materials			😊😊
S Heat-resistant steel		😊😞😞😞😞😞	😞😞

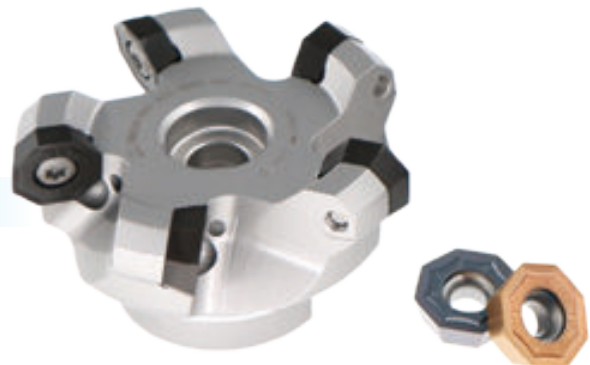
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● Recommended grade ○ Produce according to order

Recommended cutting parameters

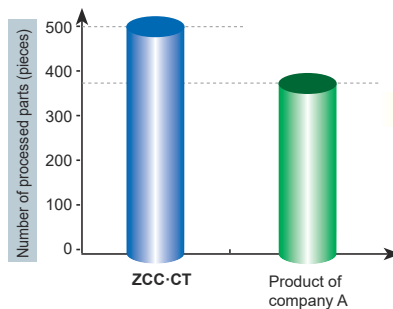
Workpiece material		Hardness HB	Insert grade	Cutting parameters			
				V(SFPM)	f(IPT)		
					-GL	-GM	-GH
P	Low-carbon steel, Soft steel	≤180	YBM253	900(700-1100)	0.006 (0.004-0.008)	0.01 (0.006-0.014)	0.012 (0.006-0.016)
			YBG205H	900(650-1200)			
			YB9320	900(650-1200)			
	High-carbon steel, Alloy steel	180-280	YBM253	800(650-1100)	0.006 (0.004-0.008)	0.006 (0.004-0.012)	0.01 (0.006-0.016)
			YBG205H	800(650-1100)			
			YB9320	800(650-1100)			
	Alloy tool steel	280-350	YBM253	700(600-1000)	0.006 (0.004-0.008)	0.006 (0.004-0.012)	0.01 (0.006-0.016)
			YBG205H	700(550-1000)			
			YB9320	700(550-1000)			
M	Stainless steel	≤270	YBM253	750(600-1000)	0.006 (0.004-0.008)	0.006 (0.004-0.012)	0.01 (0.006-0.016)
			YBG205H	490(400-820)			
			YB9320	490(400-820)			
K	Cast iron	180-250	YBD152	650(490-820)	0.006 (0.004-0.008)	0.006 (0.004-0.012)	0.012 (0.006-0.016)
S	High-temperature alloy	≤400	YBS303	330(200-400)	--	0.006 (0.004-0.01)	--
N					-LH		
	Al alloy steel	--	YD101	1000-	0.006 (0.002-0.012)		
			YD201				

Case for FMA04



Case1

Workpiece material: 45# steel
Insert: ODHT060508-GM/YB9320
Cutting parameters: $V_c=656$ SFPM,
 $a_p=0.08$ in,
 $f=0.008$ IPT



Cutter body: FMA04-3.00"-A1.00"-OD06-06C

The tool life of ZCC-CT's product is longer than competitor A under same cutting parameters.

Case2

Workpiece material: Inconel
Insert: ODHT060508-GM/YBS303
Cutting parameters: $V_c=492$ SFPM,
 $a_p=0.02$ in,
 $f=0.006$ IPT

Under the same working conditions, ZCC-CT product has stable cutting, better machined surface quality and dimensional accuracy.

FMA11 Kr:45° Series Face Mills

With outstanding economy and high performance

Cutter body with PVD coating for superior corrosion and heat resistance resulting in longer service life.

4×2=8edge

Comprehensive upgrading of -GM geometry, good chip breaking performance, large rake angle, reduced cutting force.

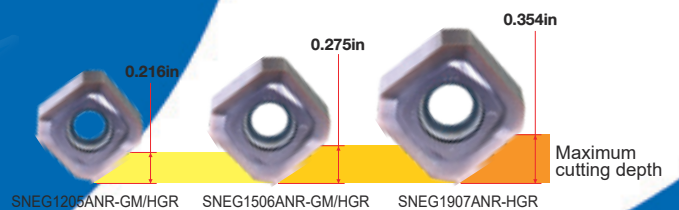
New -HGR geometry, high edge strength, excellent breakage resistance.

Insert with wiper, smoother surface roughness.

Complete range of insert specifications and geometries, for different cutting depths and different machining demands.

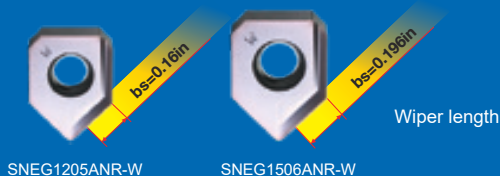
Double negative structure, excellent impact resistance.

Optimized design of pitch and chip pocket, for unobstructed chip flow and higher cutting efficiency.



-W special geometry for wiper inserts, large arc design, improved workpiece quality.

Extra long wiper, more suitable for semi-finishing and finishing with large diameter cutters.



Face milling tools

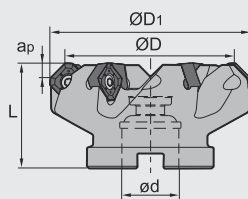
Kr:45°



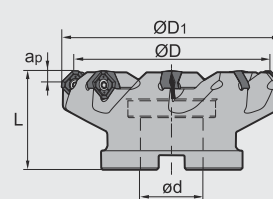
FMA11 **P** **M** **K** **S**



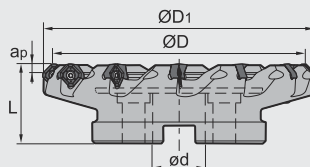
A type of mounting



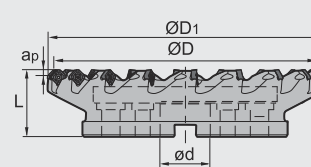
B type of mounting



C type of mounting



D type of mounting



Specification of tools

Type		Dimensions (inch)						Mounting type
		ØD	ØD ₁	ød	L	ap _{max}	Z (Number of teeth)	
FMA11 Coarse pitch	-2.00"-A0.75"-SN12-04C	2.000	2.453	0.750	1.750	0.216	4	A
	-2.50"-A0.75"-SN12-05C	2.500	2.953	0.750	1.750	0.216	5	A
	-3.00"-A1.00"-SN12-06C	3.000	3.453	1.000	2.000	0.216	6	A
	-4.00"-B1.50"-SN12-07	4.000	4.453	1.500	2.500	0.216	7	B
	-5.00"-B1.50"-SN12-08	5.000	5.453	1.500	2.500	0.216	8	B
	-6.00"-B2.00"-SN12-10	6.000	6.453	2.000	2.500	0.216	10	B
	-2.00"-A0.75"-SN15-04C	2.000	2.602	0.750	1.750	0.275	4	A
	-2.50"-A0.75"-SN15-05C	2.500	3.102	0.750	1.750	0.275	5	A
	-3.00"-A1.00"-SN15-06C	3.000	3.602	1.000	2.000	0.275	6	A
	-4.00"-B1.50"-SN15-07	4.000	4.602	1.500	2.500	0.275	7	B
	-5.00"-B1.50"-SN15-08	5.000	5.602	1.500	2.500	0.275	8	B
	-6.00"-B2.00"-SN15-10	6.000	6.602	2.000	2.500	0.275	10	B
	-8.00"-C2.50"-SN15-12	8.000	8.602	2.500	2.500	0.275	12	C
	-10.00"-C2.50"-SN15-14	10.000	10.602	2.500	2.500	0.275	14	C
	-12.00"-D2.50"-SN15-18	12.000	12.602	2.500	2.500	0.275	18	D
	-5.00"-B1.50"-SN19-07	5.000	5.720	1.500	2.500	0.354	7	B
	-6.00"-B2.00"-SN19-09	6.000	6.720	2.000	2.500	0.354	9	B
	-8.00"-C2.50"-SN19-11	8.000	8.720	2.500	2.500	0.354	11	C
	-10.00"-C2.50"-SN19-13	10.000	10.720	2.500	2.500	0.354	13	C
	-12.00"-D2.50"-SN19-16	12.000	12.720	2.500	2.500	0.354	16	D

Face milling tools

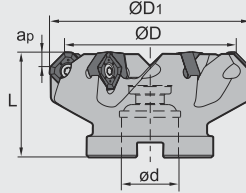
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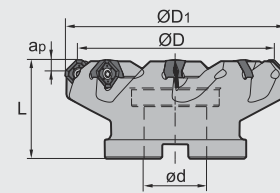
FMA11 P M K S



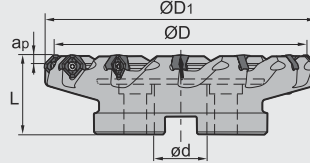
A type of mounting



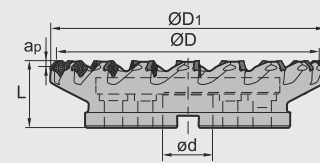
B type of mounting



C type of mounting



D type of mounting



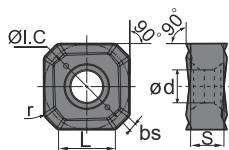
Specification of tools

Type		Dimensions (inch)						Mounting type
		ØD	ØD ₁	ød	L	ap _{max}	Z (Number of teeth)	
FMA11 Close pitch	-2.50"-A0.75"-SN12-06C	2.500	2.953	0.750	1.750	0.216	6	A
	-3.00"-A1.00"-SN12-07C	3.000	3.453	1.000	2.000	0.216	7	A
	-4.00"-B1.50"-SN12-09	4.000	4.453	1.500	2.500	0.216	9	B
	-5.00"-B1.50"-SN12-10	5.000	5.453	1.500	2.500	0.216	10	B
	-6.00"-B2.00"-SN12-12	6.000	6.453	2.000	2.500	0.216	12	B
	-2.50"-A0.75"-SN15-06C	2.500	3.102	0.750	1.750	0.275	6	A
	-3.00"-A1.00"-SN15-07C	3.000	3.602	1.000	2.000	0.275	7	A
	-4.00"-B1.50"-SN15-09	4.000	4.602	1.500	2.500	0.275	9	B
	-5.00"-B1.50"-SN15-10	5.000	5.602	1.500	2.500	0.275	10	B
	-6.00"-B2.00"-SN15-12	6.000	6.602	2.000	2.500	0.275	12	B
	-8.00"-C2.50"-SN15-15	8.000	8.602	2.500	2.500	0.275	15	C
	-10.00"-C2.50"-SN15-18	10.000	10.602	2.500	2.500	0.275	18	C
	-12.00"-D2.50"-SN15-22	12.000	12.602	2.500	2.500	0.275	22	D
	-5.00"-B1.50"-SN19-09	5.000	5.720	1.500	2.500	0.354	9	B
	-6.00"-B2.00"-SN19-11	6.000	6.720	2.000	2.500	0.354	11	B
	-8.00"-C2.50"-SN19-14	8.000	8.720	2.500	2.500	0.354	14	C
	-10.00"-C2.50"-SN19-17	10.000	10.720	2.500	2.500	0.354	17	C
	-12.00"-D2.50"-SN19-20	12.000	12.720	2.500	2.500	0.354	20	D

Spare parts

Diameter ØD	Insert specification	Insert screw	Wrench		Sketch of installation
					
Ø2.00"~Ø6.00"	SNEG1205ANR-GM/HGR/W	I60M3.5×10	--	WT15IS	
Ø2.00"~Ø12.00"	SNEG1506ANR-GM/HGR/W	I60M5×13	WT20IT	--	
Ø5.00"~Ø12.00"	SNEG1907ANR-HGR	I43M6×16	WT25IT	--	

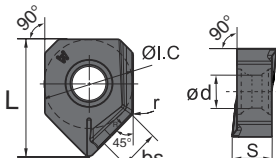
Selection of inserts

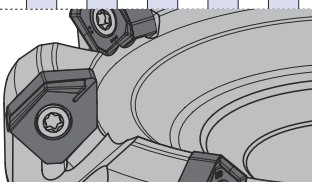


😊 Good working conditions 😐 General working conditions ☹️ Adverse working conditions

[illegible]

Insert shape	Type	Dimensions(inch)						Coated grade												Cermert		Cement carbide		
		L	ØI.C	S	bs	ød	r	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	SNEG1205ANR-GM	0.299	0.472	0.187	0.041	0.181	0.031	●	●	●	○			●		●		○	○					
	SNEG1506ANR-GM	0.370	0.591	0.218	0.051	0.217	0.035	●	●	●	○			●		●		○	○					
	SNEG1205ANR-HGR	0.299	0.472	0.187	0.041	0.181	0.031	●	●	●	○	○		●		●								
	SNEG1506ANR-HGR	0.370	0.591	0.218	0.051	0.217	0.035	●	●	●	○	○		●		●								
	SNEG1907ANR-HGR	0.476	0.748	0.276	0.066	0.283	0.039	●	●	●		○		●		●								
	SNEG1205ANR-W	0.626	0.472	0.187	0.16	0.181	0.236							●										
	SNEG1506ANR-W	0.783	0.591	0.218	0.196	0.217	0.035							●										





● Recommended grade ○ Produce according to order

Recommended cutting parameters

Workpiece material		Hardness HB	Grade		Cutting data		
					V(SFPM)	f(IPT)	a _{pmax} (inch)
P	Low carbon steel Soft steel	≤180	YBM253 YBG205	YBC302 YB9320	880 (720-1200)	0.008 (0.004-0.016)	0.216(SN12) 0.275(SN15) 0.354(SN19)
	High carbon steel Alloy steel	180-280	YBM253 YBG205	YBC302 YB9320	850 (650-1050)	0.008 (0.004-0.016)	
	Alloy tool steel	280-350	YBM253 YBG205	YBC302 YB9320	780 (590-1000)	0.008 (0.004-0.016)	
M	Stainless steel	≤270	YBG205	YB9320	720 (520-820)	0.007 (0.004-0.016)	
			YBM253		750 (590-980)	0.009 (0.005-0.013)	
K	Cast iron	180-250	YBD152		880 (490-980)	0.012 (0.004-0.02)	
			YBD252		650 (490-820)	0.016 (0.008-0.024)	
S	High-temperature alloy	≤400	YBS203	YBS303	300 (200-400)	0.006 (0.003-0.012)	

Case for FMA11

(Comparison of tool life)

Workpiece material: NAK80

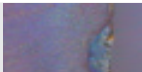
Operation: Face milling

Tool: FMA11-5.00"-B1.50"-SN12-08

Insert: SNEG1205ANR-HGR/YBG205

Cutting data: $V_c=650$ SFPM, $f_z=0.08$ IPT,

$A_p = 0.08 \text{ in.}$ $A_e = 2.0 \text{ in.}$

	Products of company A	-HGR / YBG205
Test Group 1		
Life	22 minutes Breakage	35 minutes, wear 0.0008in
Test Group 2		
Life	27 minutes Breakage	35 minutes, wear 0.0004 in



FMA 12 Series **Kr:45°**

High Performance Face Milling Cutters with 16 edges for outstanding economy



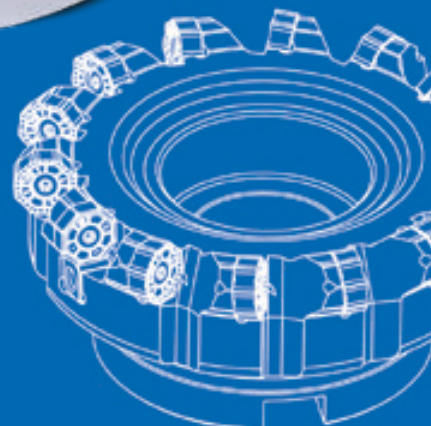
Adjustment screw of wiper insert

The wiper insert of the finishing cutter can be finely adjusted in the axial direction and is used in processing situations with high surface quality requirements.



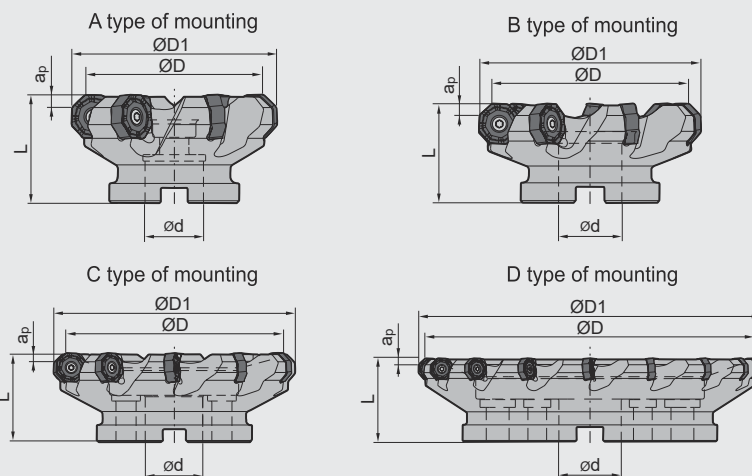
Unique 3-dimensional edge

The double negative structure of the cutter body, with the spiral insert cutting edge, realizes the positive axial rake angle, reduces the cutting force and is conducive to chip removal.



Face milling tools

Kr:45°

FMA12


Specification of tools

Type		Dimensions (inch)						Mounting type
		ØD	ØD1	ød	L	apmax	Z (Number of teeth)	
FMA12 Coarse pitch	-2.00"-A0.75"-ON06-04C	2.000	2.394	0.750	1.750	0.157	4	A
	-2.50"-A1.00"-ON06-05C	2.500	2.894	1.000	1.750	0.157	5	A
	-3.00"-A1.00"-ON06-07C	3.000	3.394	1.000	2.000	0.157	7	A
	-4.00"-A1.25"-ON06-08C	4.000	4.394	1.250	2.000	0.157	8	A
	-5.00"-B1.50"-ON06-10	5.000	5.394	1.500	2.500	0.157	10	B
	-6.00"-C1.50"-ON06-12	6.000	6.394	1.500	2.500	0.157	12	C
	-2.50"-A1.00"-ON09-04C	2.500	3.012	1.000	1.750	0.216	4	A
	-3.00"-A1.00"-ON09-05C	3.000	3.512	1.000	2.000	0.216	5	A
	-4.00"-A1.25"-ON09-06C	4.000	4.512	1.250	2.000	0.216	6	A
	-5.00"-B1.50"-ON09-08	5.000	5.512	1.500	2.500	0.216	8	B
	-6.00"-B2.00"-ON09-10	6.000	6.512	2.000	2.500	0.216	10	B
	-8.00"-C2.50"-ON09-12	8.000	8.512	2.500	2.500	0.216	12	C
	-10.00"-C2.50"-ON09-16	10.000	10.512	2.500	2.500	0.216	16	C
	-12.00"-D2.50"-ON09-20	12.000	12.512	2.500	2.500	0.216	20	D

Note: ONHU08 inserts do not fit in any FMA12-**-ON09-* cutters.

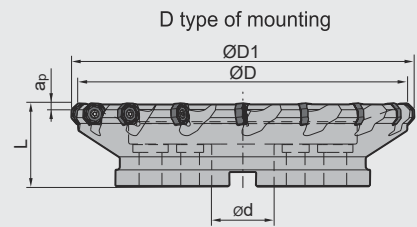
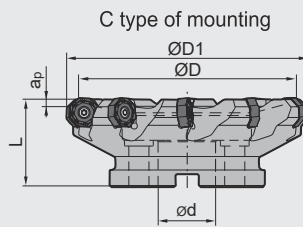
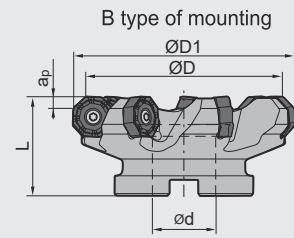
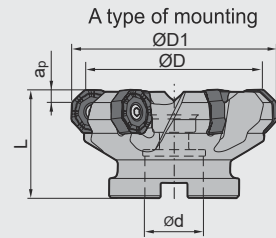
Spare parts

Diameter ØD	Insert specification	Insert screw	Wrench	Sketch of installation
				
Ø2.00"~Ø6.00"	ONMU06□□□□-GM/GH ONHU06□□□□ANN-GL/GM/GH	IRM4×10	WT15IS	
Ø2.50"~Ø12.00"	ONMU09□□□□-GM/GH ONHU09□□□□ANN-GL/GM/GH	IRM5×13	WT20IT	

Face milling tools

Kr:45°

FMA12



Specification of tools

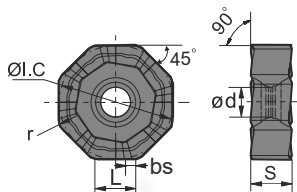
Type		Dimensions (inch)						Mounting type
		ØD	ØD1	ød	L	apmax	Z (Number of teeth)	
FMA12 Close pitch	-2.00"-A0.75"-ON06-05C	2.000	2.394	0.750	1.750	0.157	5	A
	-2.50"-A1.00"-ON06-07C	2.500	2.894	1.000	1.750	0.157	7	A
	-3.00"-A1.00"-ON06-09C	3.000	3.394	1.000	2.000	0.157	9	A
	-4.00"-A1.25"-ON06-11C	4.000	4.394	1.250	2.000	0.157	11	A
	-5.00"-B1.50"-ON06-14	5.000	5.394	1.500	2.500	0.157	14	B
	-6.00"-C1.50"-ON06-18	6.000	6.394	1.500	2.500	0.157	18	C
	-2.50"-A1.00"-ON09-06C	2.500	3.012	1.000	1.750	0.216	6	A
	-3.00"-A1.00"-ON09-07C	3.000	3.512	1.000	2.000	0.216	7	A
	-4.00"-A1.25"-ON09-10C	4.000	4.512	1.250	2.000	0.216	10	A
	-5.00"-B1.50"-ON09-12	5.000	5.512	1.500	2.500	0.216	12	B
	-6.00"-B2.00"-ON09-15	6.000	6.512	2.000	2.500	0.216	15	B
	-8.00"-C2.50"-ON09-18	8.000	8.512	2.500	2.500	0.216	18	C

Note: ONHU08 inserts do not fit in any FMA12-**-ON09-* cutters.

Spare parts

Diameter ØD	Insert specification	Insert screw	Wrench	Sketch of installation
				
Ø2.00"~Ø6.00"	ONMU06□□□□-GM/GH ONHU06□□□□ANN-GL/GM/GH	IRM4×10	WT15IS	
Ø2.50"~Ø12.00"	ONMU09□□□□-GM/GH ONHU09□□□□ANN-GL/GM/GH	IRM5×13	WT20IT	

Selection of inserts



😊 Good working conditions 😐 General working conditions 😞 Adverse working conditions

[illegible]

Insert shape	Type	Dimensions(inch)						Coated grade												Cermet		Cemented carbide		
		L	ØI.C	S	ød	r	bs	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YBS320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	ONHU060404ANN-GL	0.242	0.625	0.218	0.236	0.016	0.047		●	●					●		●			●				
	ONHU09T508ANN-GL	0.315	0.795	0.228	0.276	0.031	0.047		●	●	○				●		●			●				
	ONHU060408ANN-GM	0.242	0.625	0.218	0.236	0.031	0.039		●	●	○				●		●			●				
	ONMU060408-GM	0.242	0.625	0.218	0.236	0.031	-		●	●	○				●		●							
	ONHU09T508ANN-GM	0.315	0.795	0.228	0.276	0.031	0.047		●	●	○				●		●			●				
	ONMU09T512-GM	0.315	0.795	0.228	0.276	0.047	-		●	●	○				●		●							
	ONMU060408-GH	0.242	0.625	0.218	0.236	0.031	-		●	●	○				●		●			●				
	ONHU060408ANN-GH	0.242	0.625	0.218	0.236	0.031	0.039		●	●	○				●		●			●				
	ONHU09T508ANN-GH	0.315	0.795	0.228	0.276	0.031	0.047		●	●	○				●		●			●				
	ONMU09T512-GH	0.315	0.795	0.228	0.276	0.047	-		●	●					●		●							

● Recommended grade ○ Produce according to order

Recommended cutting parameters

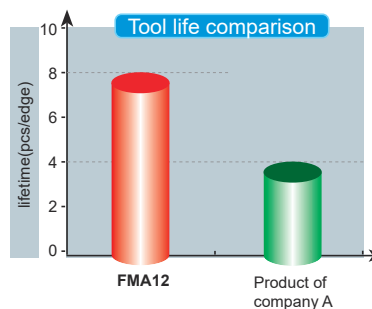
Workpiece material		Hardness HB	Grade		Cutting data						
					-GL		-GM		-GH		a _{pmax} (in)
					Cutting speed (S _{FPM})	f(IPT)	Cutting speed (S _{FPM})	f(IPT)	Cutting speed (S _{FPM})	f(IPT)	
P	Low carbon steel	≤180	YBM253 YB9320	YBG205	880(720-1100)	0.008(0.004-0.012)	880(720-1100)	0.008(0.004-0.016)	880(720-1100)	0.012(0.008-0.02)	0.157(ON06 0.216(ON09
	Alloy steel	180-350	YBM253 YB9320	YBG205	780(590-1050)	0.006(0.004-0.012)	780(590-1050)	0.008(0.004-0.016)	780(590-1050)	0.012(0.008-0.02)	
M	Stainless steel	≤270	YBM253 YB9320	YBG205	750 (590-1050) 520 (360-880)	0.006 (0.004-0.012)	520 (360-880)	0.006(0.004-0.012)	520 (360-880)	0.008(0.004-0.012)	
K	Cast iron	180-260	YBD152		880(590-1050)	0.008(0.004-0.012)	880(590-1050)	0.012(0.004-0.016)	880(590-1050)	0.016(0.008-0.02)	
S	Hard-to-cut material	≤400	YBS303		320(200-400)	0.006 (0.003-0.012)	320(200-400)	0.006(0.004-0.01)	320(200-400)	--	

Case for FMA12

Case (Cast iron machining)



Workpiece: Cylinder
Workpiece material: Gray cast iron (HB250)
Machining location: Milling 4 sides
Tool: FMA12-6.00"-B2.00"-ON09-10
Insert: ONHU09T508ANN-GM/YBD152
Cutting data: $V_c=500$ SFPM, $f_z=0.01$ IPT,
 $a_p=0.12$ in, $a_e=6$ in
System of cooling: External



Doubled tool life of FMA12 series compared to similar product of company A.

FMA 14

High efficiency and multiple cutting edge general milling cutter

- > 45° approach angle balanced design realizes low cutting resistance and high efficiency machining.
- > Brand new optimized chip breaker, suitable for steel and cast iron.
- > Greater anti-vibration capability ensures better surface quality.
- > Double sided pentagon, 10 cutting edges, both great stability and economy performance.



Spiral cutting-edge design ensures easier and faster cutting.

Optimized chip breaker ensures the nose strength and improves the capability of anti-breakage.

Multi series of chip breakers for different kinds of machining.

-GM: First choice for P material

Big nose radius design. Strengthened cutting edge design

-GL: Suitable for stable machining

Suitable for low cutting force and low machine power machining

-GH: High anti-breakage capability

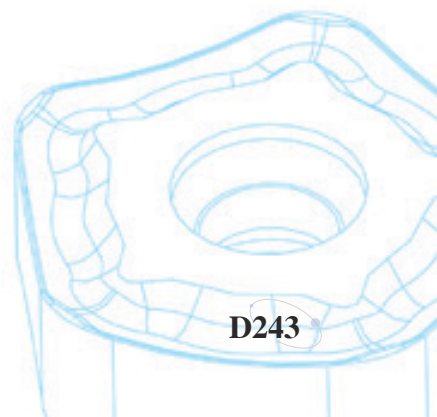
High inserts strength inhibits the breakage effectively

Pair with the brand-new grade YB9320 ensures longer cutting life and more stable machining.



-GH/-GM/-GL

5 × 2 = 10 cutting edges

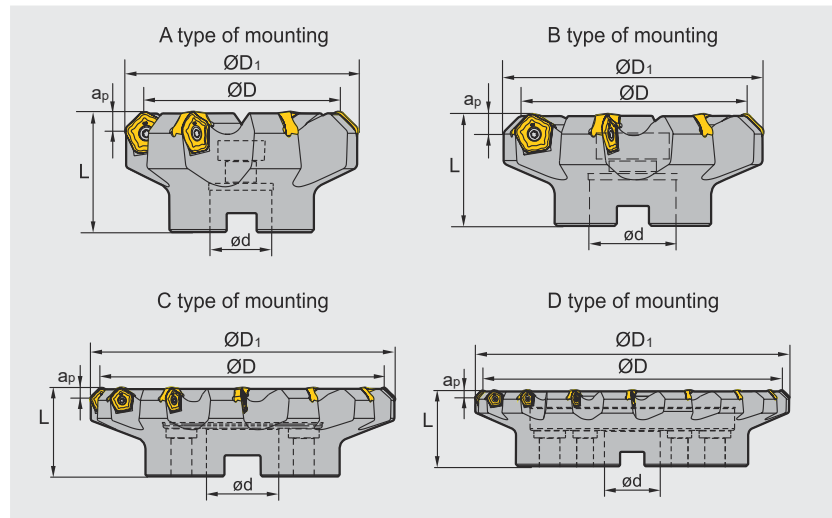


Face milling tools

Kr:45°



FMA14



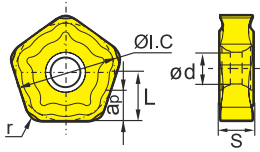
Specification of tools

Type		Dimensions (inch)						Mounting type
		ØD	ØD1	L	ød	apmax	Z (Number of teeth)	
FMA14 Coarse pitch	-2.00"-A0.75"-PN11-04	2.000	2.657	2.000	0.750	0.217	4	A
	-2.50"-A0.75"-PN11-05	2.500	3.157	2.000	0.750	0.217	5	A
	-3.00"-A1.00"-PN11-06	3.000	3.657	2.000	1.000	0.217	6	A
	-4.00"-B1.25"-PN11-07	4.000	4.657	2.000	1.250	0.217	7	B
	-5.00"-B1.50"-PN11-08	5.000	5.657	2.500	1.500	0.217	8	B
	-6.00"-B1.50"-PN11-10	6.000	6.657	2.500	1.500	0.217	10	B
	-8.00"-C2.50"-PN11-12	8.000	8.657	2.500	2.500	0.217	12	C
	-10.00"-C2.50"-PN11-14	10.000	10.657	2.500	2.500	0.217	14	C
Close pitch	-12.00"-D2.50"-PN11-16	12.000	12.657	3.000	2.500	0.217	16	D
	-2.00"-A0.75"-PN11-05	2.000	2.657	2.000	0.750	0.217	5	A
	-2.50"-A0.75"-PN11-06	2.500	3.157	2.000	0.750	0.217	6	A
	-3.00"-A1.00"-PN11-08	3.000	3.657	2.000	1.000	0.217	8	A
	-4.00"-B1.25"-PN11-10	4.000	4.657	2.000	1.250	0.217	10	B
	-5.00"-B1.50"-PN11-12	5.000	5.657	2.500	1.500	0.217	12	B
	-6.00"-B1.50"-PN11-14	6.000	6.657	2.500	1.500	0.217	14	B
	-8.00"-C2.50"-PN11-16	8.000	8.657	2.500	2.500	0.217	16	C
	-10.00"-C2.50"-PN11-18	10.000	10.657	2.500	2.500	0.217	18	C
	-12.00"-D2.50"-PN11-26	12.000	12.657	3.000	2.500	0.217	26	D

Spare parts

Insert specification	Insert screw	Wrench	Sketch of installation
PNEG11□□□□-GL/GM/GH	I60M4×10	WT15IS	

Selection of inserts



😊 Good working conditions 😐 General working conditions 😞 Adverse working conditions

[illegible][illegible]

- Inserts can be assembled in both left and right side.

● Recommended grade ○ Produce according to order

Recommended cutting parameters

Recommended cutting parameters										
ISO	Workpiece material	Hardness HB	Grade	Cutting data						a _p max (in)
				-GM		-GL		-GH		
				V(SFPM)	F _z (IPT)	V(SFPM)	F _z (IPT)	V(SFPM)	F _z (IPT)	
P	Low carbon steel	≤HB180	YB9320 YBG205 YBM253	320~820	0.006~0.02	320~820	0.004~0.016	320~750	0.008~0.025	0.217
	High carbon steel	180~280	YB9320 YBG205 YBM253	320~750	0.006~0.02	320~750	0.004~0.016	320~750	0.008~0.025	
	Alloy steel	180~280	YB9320 YBG205 YBM253	320~720	0.006~0.016	320~720	0.004~0.012	320~720	0.008~0.02	
	Tool steel	280~350	YB9320 YBG205 YBM253	320~720	0.006~0.02	320~720	0.004~0.012	320~720	0.008~0.02	
M	Stainless steel	≤270	YB9320 YBG205 YBM253	290~590	0.004~0.012	290~590	0.004~0.016	290~590	0.008~0.024	0.217
K	Cast iron, Ductile iron High-nickel cast iron	180~250	YB9320 YBG205	320~780	0.006~0.016	320~850	0.004~0.012	320~780	0.008~0.02	

Case for FMA14

Workpiece material: 42CrMo

Tool: FMA14-5.00"-B1.50"-PN11-08

Insert: PNEG110530-GM/YB9320

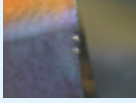
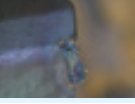
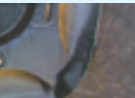
Cutting data: $V_c=450$ SFPM, $f_z=0.016$ IPT,

$$a_p = 0.079 \text{ in}, a_e = 2.835 \text{ in}$$

Machine tool: 3-axis machining center

Cutting method: Dry cut

Wear comparison

Wear comparison		
	PNEG110530-GM	Similar product from Company A
Machining time	135min	65min
Wear on the rear face		
Wear on the rake face		

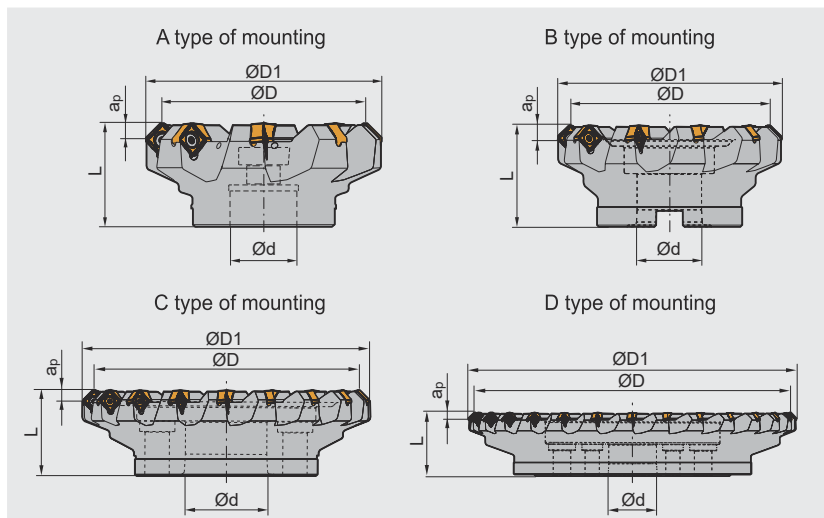
Results: Under the same processing conditions, our FMA14 has obviously better tool life than the similar product from Company A. It has better performance on the anti-breakage and wear resistance.

Face milling tools

Kr:45°



FMA17 P M K N S



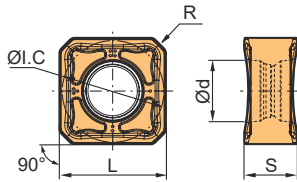
Specification of tools

Type		Dimensions (inch)						Mounting type
		ØD	ØD1	Ød	L	apmax	Z (Number of teeth)	
FMA17 Coarse pitch	-2.00"-A0.75"-SN12-04C	2.000	2.591	0.750	1.750	0.256	4	A
	-2.50"-A0.75"-SN12-06C	2.500	3.091	0.750	1.750	0.256	6	A
	-3.00"-A1.00"-SN12-07C	3.000	3.591	1.000	2.000	0.256	7	A
	-4.00"-A1.25"-SN12-08C	4.000	4.591	1.250	2.000	0.256	8	A
	-5.00"-B1.50"-SN12-10	5.000	5.591	1.500	2.500	0.256	10	B
	-6.00"-B2.00"-SN12-12	6.000	6.591	2.000	2.500	0.256	12	B
	-8.00"-C2.50"-SN12-14	8.000	8.591	2.500	2.500	0.256	14	C
	-10.00"-C2.50"-SN12-20	10.000	10.591	2.500	2.500	0.256	20	C
Close pitch	-12.00"-D2.50"-SN12-22	12.000	12.591	2.500	2.500	0.256	22	D
	-2.00"-A0.75"-SN12-06C	2.000	2.591	0.750	1.750	0.256	6	A
	-2.50"-A0.75"-SN12-08C	2.500	3.091	0.750	1.750	0.256	8	A
	-3.00"-A1.00"-SN12-09C	3.000	3.591	1.000	2.000	0.256	9	A
	-4.00"-A1.25"-SN12-12C	4.000	4.591	1.250	2.000	0.256	12	A
	-5.00"-B1.50"-SN12-16	5.000	5.591	1.500	2.500	0.256	16	B
	-6.00"-B2.00"-SN12-18	6.000	6.591	2.000	2.500	0.256	18	B
	-8.00"-C2.50"-SN12-24	8.000	8.591	2.500	2.500	0.256	24	C

Spare parts

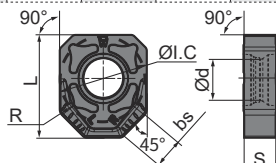
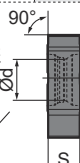
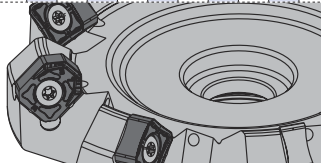
Diameter ØD	Insert specification	Insert screw	Wrench	Sketch of installation
				
Ø2.00"~Ø2.50"	SNGX1205□□□□-GL/GM/GH/ LH/W	IRM4×10	WT15IP	
Ø3.00"~Ø6.00"			WT15IS	
Ø8.00"~Ø12.00"			WT15IT	

Selection of inserts



😊 Good working conditions 😐 General working conditions 😞 Adverse working conditions

[illegible]

Insert shape	Type	Dimensions(inch)						Coated grade												Cermet		Cemented carbide					
		L	ØI.C	S	bs	ød	R	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201			
	SNGX1205ANN-GL	0.500	0.500	0.256	-	0.232	0.031		●	●	○					●	●										
	SNMX120512-GL	0.500	0.500	0.256	-	0.232	0.047		●	●							●										
	SNGX1205ANN-GM	0.500	0.500	0.256	-	0.232	0.031		●	●	○					●	●			●							
	SNMX1205ANN-GM	0.500	0.500	0.256	-	0.232	0.031		●	●	○						●			●							
	SNMX120512-GM	0.500	0.500	0.256	-	0.232	0.047		●	●							●	●			●						
	SNGX1205ANN-GH	0.500	0.500	0.256	-	0.232	0.031		●	●	○					●	●										
	SNMX120512-GH	0.500	0.500	0.256	-	0.232	0.047		●	●						●	●										
	SNGX1205ANN-LH	0.500	0.500	0.256	-	0.232	0.031																		●		
	SNGX1205ANN-W	0.591	0.500	0.189	0.170	0.232	0.047						●														
																											

- Inserts can be assembled in both left and right side.

● Recommended grade ○ Produce according to order

Recommended cutting parameters

ISO	Workpiece material	Hardness HB	Grade	Cutting data					
				V _c (SFPM)	f _z (IPT)				
					-GM	-GL	-GH	-LH	
P	Low-carbon steel, Soft steel	≤180	YBM253 YBG205H YB9320	880(720-1150)	0.006(0.004-0.012)	0.008(0.004-0.016)	0.012(0.008-0.02)	--	
	High-carbon steel, Alloy steel	180-280	YBM253 YBG205H YB9320	850(720-1050)	0.006(0.004-0.012)	0.008(0.004-0.016)	0.012(0.008-0.02)	--	
	Alloy tool steel	280-350	YBM253 YBG205H YB9320	780(590-980)	0.006(0.004-0.012)	0.008(0.004-0.016)	0.012(0.008-0.02)	--	
M	Stainless steel	≤270	YBM253 YBG205H YB9320	520(360-880)	0.004(0.003-0.008)	0.006(0.004-0.012)	0.008(0.004-0.012)	--	
K	Cast iron, Ductile iron, High nickel cast iron	180-250	YBD152	880(490-980)	0.008(0.004-0.012)	0.012(0.004-0.016)	0.016(0.008-0.02)	--	
S	High-temperature alloy	≤400	YBS303	330(200-400)	--	0.006(0.004-0.01)	--	--	
N	Aluminium alloy	--	YD201	980-				0.006 (0.002-0.016)	

Case for FMA17

Workpiece: gear box housing

The material: HT250(HB220)

Tool: FMA17-6.00"-B2.00"-SN12-12

Insert: SNGX1205ANN-GM/YBD152

Cutting parameters: $V_c=550$ SFPM, $f_z=0.006$ IP, $a_p=0.079$ in, $a_e=3.937$ in

Type of cooling: external cooling

Number of machined workpiece(pcs/edge)

