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FM45-100-Z07-A32R-XN09-C

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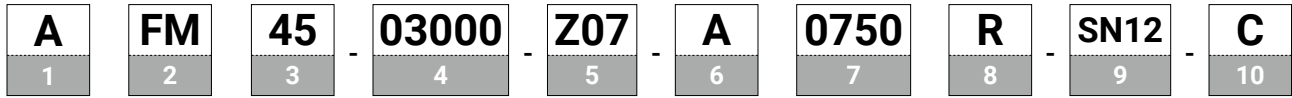
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THE EXPERTS OF DIFFICULT MACHINING

CUTTING TOOL CATALOG

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Milling Cutter Denomination System



1. A--ACHTECK

2. Machining method	
Face milling	FM
Shoulder milling	SM
Profile milling	PM
High feed milling	HM
Side & face milling	DM
Thread milling	TM
Chamfer milling	CM

3. Approach angle (Kr)	
Figure	Angle
90	90°
88	88°
75	75°
60	60°
45	45°
42	42°
•	•
•	•
•	•
15	15
00	Round insert

4. Cutter dia.	
01000	1.000in
03000	3.000in
•	•
•	•
10000	10.000in

5. Number of teeth	
Z02	2 teeth
•	•
Z05	5 teeth
•	•
Z30	30 teeth

6. Connection	
A	Arbor
W	Weldon shank
C	Cylinder shank
N	Whistle notch shank
M	Screw clamped with modular head

7. Coupling Size
0750--Connection diameter 0.750in

8. Direction of tool	
R	Right
L	Left
N	Neutral

9. Insert info
SN12--SN12 series insert

10. Others	
C	Internal coolant
No mark	No coolant

Porcupine Cutter Denomination

A	PE	90	02500	Z04	A	1000	R	LN13	L2205	F	C
1	2	3	4	5	6	7	8	9	10	11	12

1. A--ACHTECK

2. Cutting method	
Porcupine cutter	PE
Shoulder milling cutter	SM
Profile milling cutter	PM
High feed milling cutter	HM
Side and face Milling cutter	DM
Thread milling cutter	TM
Chamfer milling cutter	CM
Face milling cutter	FM

3. Approach angle (Kr)	
Figure	Angle
90	90°
88	88°
75	75°
60	60°
45	45°
42	42°
•	•
•	•
•	•

4. Cutter dia.	
01000	1.000in
02500	2.500in
03000	3.000in
•	•
10000	10.000in

5. Number of teeth	
Z02	2 teeth
Z04	4 teeth
Z05	5 teeth
•	•
Z30	30 teeth

6. Coupling	
A	Arbor
W	Weldon shank
C	Cylinder shank
N	Whistle notch shank
M	Screw clamped with modular head

7. Coupling size	
1000--Connection diameter 1.000in	

8. Direction of tool	
R	Right
L	Left
N	Neutral

9. Insert information	
LN13--LN13 series insert	

10. Max. cutting depth	
L1181	1.181in
L1772	1.772in
L2205	2.205in

11. Tool type	
F	Full teeth
H	Half teeth

10. Others	
C	With internal coolant
No indication	Without internal coolant

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








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THE EXPERTS OF DIFFICULT MACHINING



Milling Cutters










Overview of Milling Products

Product family			AFM42-OD06	AFM40-ON05	AFM45-SN12	AFM75-SN12
Page			P196	P198	P200	P202
Approach angle			42°	40°	45°	75°
Max.ap (in)			0.177	0.138	0.256	0.315
Diameter range (in)			Ø 2.000-6.000	Ø 2.000-6.000	Ø 2.000-6.000	Ø 2.000-10.000
Insert type			OD..0605..	ON..0504..	SN..1206..	SN..1206..
Application	Face milling		●	●	●	●
	Square Shoulder milling					
	Slot milling					
	Ramping		●			
	Helical interpolate milling		●			
	Plunging					
	Profile milling					
	Chamfer milling					
	Pocket milling		●			

Remark: ● Recommended application

Milling cutters

Overview of Milling Products

Product family			AFM88-SN12	AFM45-XN07	AFM45-XN09	AFM45-XN09(W)
Page			P204	P206	P208	P209
Approach angle			88°	45°	45°	45°
Max.ap (in)			0.394	0.173	0.236	0.236
Diameter range (in)			Ø2.000-6.000	Ø2.000-4.000	Ø2.500-8.000	Ø 3.000-8.000
Insert type			SN..1206..	XN..0705..	XN..0906..	XN..0906..
Application	Face milling		●	●	●	●
	Square Shoulder milling					
	Slot milling					
	Ramping					
	Helical interpolate milling					
	Plunging					
	Profile milling					
	Chamfer milling					
	Pocket milling					

Remark: ● Recommended application










Overview of Milling Products

Product family			ASM90-LN09	ASM90-LN13	ASM90-WN08-N	ASM90-AP17
Page			P211	P214	P216	P219
Approach angle			90°	90°	90°	90°
Max.ap (in)			0.314	0.472	0.275	0.630
Diameter range (in)			Ø 1.000-3.000	Ø 2.000-4.000	Ø 1.500-6.000	Ø 1.000-2.500
Insert type			LNHU 0904..	LNHU 1306..	WNMU 0806..	APKT 1705..
Application	Face milling		●	●	●	●
	Square Shoulder milling		●	●	●	●
	Slot milling		●	●	●	●
	Ramping					●
	Helical interpolate milling					●
	Plunging					
	Profile milling					
	Chamfer milling					
	Pocket milling					●

Remark: ● Recommended application










Milling cutters

Overview of Milling Products

Product family			ASM90-TD15	ASM90-AO12	APE90-LN13	AHM20-LN06
Page			P221	P223	P225	P228
Approach angle			90°	90°	90°	20°
Max.ap (in)			0.433	0.433	1.339-2.520	0.026
Diameter range (in)			Ø 1.250-8.000	Ø 0.750-3.000	Ø 1.500-3.000	Ø 0.625-2.000
Insert type			TD.T 1505..	AOMT 1204..	LNHU 1306..	LN..0604..
Application	Face milling		●	●	●	●
	Square Shoulder milling		●	●	●	
	Slot milling		●	●		●
	Ramping		●	●		●
	Helical interpolate milling		●	●		●
	Plunging					●
	Profile milling					
	Chamfer milling					
	Pocket milling		●	●		●

Remark: ● Recommended application

Overview of Milling Products

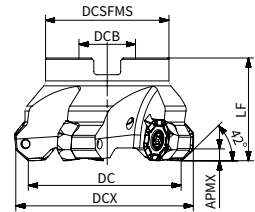
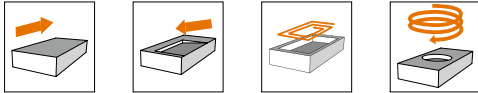
Product family			AHM25-LN10	APM00-RO10	APM00-RO12
Page			P230	P232	P234
Approach angle			25°	-	-
Max.ap (in)			0.047	0.197	0.236
Diameter range (in)			Ø 1.000-5.000	Ø 1.000-2.000	Ø 1.250-3.000
Insert type			LN..1005..	RO..10T3..	RO..1204..
Application	Face milling		●	●	●
	Square Shoulder milling				
	Slot milling		●		
	Ramping		●	●	●
	Helical interpolate milling		●	●	●
	Plunging		●		
	Profile milling			●	●
	Chamfer milling				
	Pocket milling		●	●	●

Remark: ● Recommended application

Milling cutters

AFM42-OD06

42 °Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM42-02000-Z04-A0750R-OD06-C	2.000	2.409	0.750	1.654	1.575	0.177		4	OD..0605..
AFM42-02500-Z05-A1000R-OD06-C	2.500	2.909	1.000	2.165	1.969	0.177		5	
AFM42-03000-Z05-A1000R-OD06-C	3.000	3.409	1.000	2.165	1.969	0.177		5	
AFM42-03000-Z06-A1000R-OD06-C	3.000	3.409	1.000	2.165	1.969	0.177		6	
AFM42-04000-Z06-A1500R-OD06-C	4.000	4.409	1.500	3.740	2.480	0.177		6	
AFM42-04000-Z07-A1500R-OD06-C	4.000	4.409	1.500	3.740	2.480	0.177		7	
AFM42-05000-Z07-A1500R-OD06-C	5.000	5.409	1.500	3.740	2.480	0.177		7	
AFM42-05000-Z08-A1500R-OD06-C	5.000	5.409	1.500	3.740	2.480	0.177		8	
AFM42-06000-Z10-A2000R-OD06	6.000	6.409	2.000	4.724	2.480	0.177		10	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM42-050-Z04-A16R-OD06-C	50	60.4	16	40	40	4.5		4	OD..0605..
AFM42-063-Z05-A22R-OD06-C	63	73.4	22	48	40	4.5		5	
AFM42-080-Z05-A27R-OD06-C	80	90.4	27	62	50	4.5		5	
AFM42-080-Z06-A27R-OD06-C	80	90.4	27	62	50	4.5		6	
AFM42-100-Z06-A32R-OD06-C	100	110.4	32	80	50	4.5		6	
AFM42-100-Z07-A32R-OD06-C	100	110.4	32	80	50	4.5		7	
AFM42-125-Z07-A40R-OD06-C	125	135.4	40	87	63	4.5		7	
AFM42-125-Z08-A40R-OD06-C	125	135.4	40	87	63	4.5		8	
AFM42-160-Z10-A40R-OD06	160	170.4	40	107	63	4.5		10	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
ø2.000-6.000			44 in lbs
	SP04512043	DT-TP20	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
ODET 0605APFN-FM2	0.031	0.063							●
ODMT 060508EN-MM3	0.031	-	●	●	●		●	●	
ODMT 060512EN-MM3	0.047	-	●						
ODHT 0605APEN-MM3	-	0.063	●	●			●	●	
ODEW 0605APSR-HR2	-	0.063					●	●	
ODMW 060512EN-HR2	0.047	-					●	●	

●: Stock available

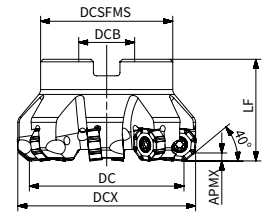
Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	OD..0605..							
				ap	Geometry			fz			
		HR2	MM3		FM2						
				(in)							
		min	max	min	max	min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.008	0.177	0.006	0.016	0.005	0.014	-	-
		<137,785	<280								
	Alloyed steel	101,526-137,785	200-280			0.005	0.014	0.004	0.012	-	-
		137,785-174,044	280-355								
	174,044-203,052	355-415									
M	Duplex stainless steel	112,839	230								
	Austenitic stainless steel	97,900	200			-	-	0.003	0.011	-	-
	Precipitation-hardening stainless steel	146,923	300								
K	Grey cast iron	101,526	220								
	Nodular cast iron	127,633	260			0.006	0.016	0.005	0.014	-	-
	Malleable cast iron	116,030	250								
N	Aluminum	37,709	75							0.004	0.014
	Aluminum alloy	64,831	130	-	-	-	-				
S	Fe-based alloy	136,770	280								
	Co-based alloy	156,060	320								
	Ni-based alloy	170,709	350								
	Ti-alloy	183,037	370								
H	Hardened steel	-	50-60HRC								
	Chilled cast iron	-	55HRC	0.004	0.010	-	-	-	-		

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

AFM40-ON05

40° Approaching angle face milling cutter




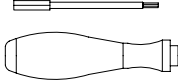
Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM40-02000-Z04-A0750R-ON05-N-C	2.000	2.346	0.750	1.654	1.575	0.137		4	ON..0504..
AFM40-02000-Z06-A0750R-ON05-N-C	2.000	2.346	0.750	1.654	1.575	0.137		6	
AFM40-02500-Z05-A1000R-ON05-N-C	2.500	2.846	1.000	2.165	1.969	0.137		5	
AFM40-02500-Z06-A1000R-ON05-N-C	2.500	2.846	1.000	2.165	1.969	0.137		6	
AFM40-02500-Z08-A1000R-ON05-N-C	2.500	2.846	1.000	2.165	1.969	0.137		8	
AFM40-03000-Z06-A1000R-ON05-N-C	3.000	3.346	1.000	2.165	1.969	0.137		6	
AFM40-03000-Z08-A1000R-ON05-N-C	3.000	3.346	1.000	2.165	1.969	0.137		8	
AFM40-03000-Z09-A1000R-ON05-N-C	3.000	3.346	1.000	2.165	1.969	0.137		9	
AFM40-04000-Z07-A1500R-ON05-N-C	4.000	4.346	1.500	3.740	2.480	0.137		7	
AFM40-04000-Z09-A1500R-ON05-N-C	4.000	4.346	1.500	3.740	2.480	0.137		9	
AFM40-04000-Z11-A1500R-ON05-N-C	4.000	4.346	1.500	3.740	2.480	0.137		11	
AFM40-05000-Z07-A1500R-ON05-N-C	5.000	5.346	1.500	3.740	2.480	0.137		7	
AFM40-05000-Z09-A1500R-ON05-N-C	5.000	5.346	1.500	3.740	2.480	0.137		9	
AFM40-05000-Z14-A1500R-ON05-N-C	5.000	5.346	1.500	3.740	2.480	0.137		14	
AFM40-06000-Z10-A2000R-ON05-N	6.000	6.346	2.000	4.724	2.480	0.137		10	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM40-050-Z04-A22R-ON05-N-C	50	58.8	22	47	40	3.5		4	ON..0504..
AFM40-050-Z06-A22R-ON05-N-C	50	58.8	22	47	40	3.5		6	
AFM40-063-Z05-A22R-ON05-N-C	63	71.8	22	52	40	3.5		5	
AFM40-063-Z06-A22R-ON05-N-C	63	71.8	22	52	40	3.5		6	
AFM40-063-Z08-A22R-ON05-N-C	63	71.8	22	52	40	3.5		8	
AFM40-080-Z06-A27R-ON05-N-C	80	88.8	27	62	50	3.5		6	
AFM40-080-Z08-A27R-ON05-N-C	80	88.8	27	62	50	3.5		8	
AFM40-080-Z09-A27R-ON05-N-C	80	88.8	27	62	50	3.5		9	
AFM40-100-Z07-A32R-ON05-N-C	100	108.8	32	77	50	3.5		7	
AFM40-100-Z09-A32R-ON05-N-C	100	108.8	32	77	50	3.5		9	
AFM40-100-Z11-A32R-ON05-N-C	100	108.8	32	77	50	3.5		11	
AFM40-125-Z07-A40R-ON05-N-C	125	133.8	40	90	63	3.5		7	
AFM40-125-Z09-A40R-ON05-N-C	125	133.8	40	90	63	3.5		9	
AFM40-125-Z14-A40R-ON05-N-C	125	133.8	40	90	63	3.5		14	
AFM40-160-Z10-A40R-ON05-N	160	168.8	40	107	63	3.5		10	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 2.000-6.000			35 in lbs
	SP040090	DT-TP15	

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
ONHU 050408-MM3	0.031	-	●						
ONMU 050408-MM4	0.031	-	●	●			●	●	
ONHU 0504ZNR-MM3	0.031	0.055	●						

●: Stock available

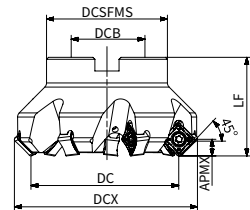
Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	ON..0504..					
				ap		Geometry		fz	
						MM3	MM4		
				(in)					
				min	max	min	max	min	max
P	Unalloyed steel	<87,022	<180	0.008	0.138	0.004	0.010	0.006	0.014
		<137,785	<280						
	Alloyed steel	101,526-137,785	200-280						
		137,785-174,044	280-355						
		174,044-203,052	355-415						
M	Duplex stainless steel	112,839	230						
	Austenitic stainless steel	97,900	200						
	Precipitation-hardening stainless steel	146,923	300						
K	Grey cast iron	101,526	220						
	Nodular cast iron	127,633	260						
	Malleable cast iron	116,030	250						
N	Aluminum	37,709	75			-	-	-	-
	Aluminum alloy	64,831	130						
S	Fe-based alloy	136,770	280						
	Co-based alloy	156,060	320						
	Ni-based alloy	170,709	350						
	Ti-alloy	183,037	370						
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

AFM45-SN12

45° Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-02000-Z04-A0750R-SN12-C	2.000	2.548	0.750	1.654	1.575	0.255		4	SN..1206ANN.. SN..1206..
AFM45-02000-Z06-A0750R-SN12-C	2.000	2.548	0.750	1.654	1.575	0.255		6	
AFM45-02500-Z06-A1000R-SN12-C	2.500	3.048	1.000	2.165	1.969	0.255		6	
AFM45-03000-Z05-A1000R-SN12-C	3.000	3.548	1.000	2.165	1.969	0.255		5	
AFM45-03000-Z07-A1000R-SN12-C	3.000	3.548	1.000	2.165	1.969	0.255		7	
AFM45-04000-Z06-A1500R-SN12-C	4.000	4.548	1.500	3.740	2.480	0.255		6	
AFM45-04000-Z08-A1500R-SN12-C	4.000	4.548	1.500	3.740	2.480	0.255		8	
AFM45-05000-Z08-A1500R-SN12-C	5.000	5.548	1.500	3.740	2.480	0.255		8	
AFM45-05000-Z10-A1500R-SN12-C	5.000	5.548	1.500	3.740	2.480	0.255		10	
AFM45-06000-Z10-A2000R-SN12	6.000	6.548	2.000	4.724	2.480	0.255		10	
AFM45-06000-Z12-A2000R-SN12	6.000	6.548	2.000	4.724	2.480	0.255		12	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-050-Z04-A22R-SN12-N-C	50	63.9	22	47	40	6.5		4	SN..1206ANN.. SN..1206..
AFM45-050-Z06-A22R-SN12-N-C	50	63.9	22	47	40	6.5		6	
AFM45-063-Z04-A22R-SN12-N-C	63	76.9	22	52	40	6.5		4	
AFM45-063-Z06-A22R-SN12-N-C	63	76.9	22	52	40	6.5		6	
AFM45-063-Z08-A22R-SN12-N-C	63	76.9	22	52	40	6.5		8	
AFM45-080-Z04-A27R-SN12-N-C	80	93.9	27	62	50	6.5		4	
AFM45-080-Z05-A27R-SN12-N-C	80	93.9	27	62	50	6.5		5	
AFM45-080-Z07-A27R-SN12-N-C	80	93.9	27	62	50	6.5		7	
AFM45-100-Z06-A32R-SN12-N-C	100	113.9	32	77	50	6.5		6	
AFM45-100-Z08-A32R-SN12-N-C	100	113.9	32	77	50	6.5		8	
AFM45-125-Z07-A40R-SN12-N-C	125	138.9	40	90	63	6.5		7	
AFM45-125-Z08-A40R-SN12-N-C	125	138.9	40	90	63	6.5		8	
AFM45-125-Z10-A40R-SN12-N-C	125	138.9	40	90	63	6.5		10	
AFM45-160-Z10-A40R-SN12-N	160	173.9	40	107	63	6.5		10	
AFM45-200-Z14-A60R-SN12-N	200	213.9	60	130	63	6.5		14	
AFM45-250-Z16-A60R-SN12-N	250	263.9	60	180	63	6.5		16	
AFM45-315-Z14-A60R-SN12-M	315	328.5	60	220	63	6.5		14	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
ø 2.000-6.000			31 in lbs
	SP050120	DT-TP20	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP25TU	AP35TU	AC301P	AP403M	AC301K	AP25TK	AW100K
SNGX 1206ANN-MM3	0.016	0.071	●	●	●		●	●	
SNGX 1206ANN-MM4	0.016	0.071	●	●	●	●	●	●	
SNGX 1206ANN-MR6	0.016	0.071	●	●	●		●	●	
SNGX 1206ANN-RR2	0.020	0.071	●	●	●		●	●	
SNGX 120608-MM4	0.031	-	●	●	●		●	●	
SNGX 120612-MM4	0.047	-	●	●	●		●	●	
SNMX 1206ANN-MM3	0.016	0.071	●	●	●		●	●	
SNMX 1206ANN-MM4	0.016	0.071	●	●	●	●	●	●	
SNMX 1206ANN-MR6	0.016	0.071	●	●	●		●	●	
SNMX 120608-MM4	0.031	-	●	●	●		●	●	
SNMX 120612-MM3	0.047	-	●	●	●		●	●	
SNMX 120612-MM4	0.047	-	●	●	●		●	●	
SNMX 120612R-MM4	0.047	-	●	●	●	●	●	●	
SNMX 120612-MR6	0.047	-	●	●	●		●	●	
SNMX 120612-RR2	0.047	-	●	●	●		●	●	
SNMX 120620-MM4	0.079	-	●	●	●		●	●	
SNMX 120620-RR2	0.079	-	●	●	●		●	●	
SNHX 1206ANN-FM2	0.020	0.071							●
SNHX 1206ANN-W	0.047	0.264	●				●		

●: Stock available

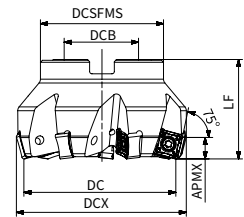
Materials				Cutting depth and feed													
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	SN.. 1206..													
				ap	Geometry					fz							
					MM3	MM4	MR6	RR2	FM2								
				(in)													
min	max	min	max	min	max	min	max	min	max	min	max	min	max				
P	Unalloyed steel	<87,022	<180	0.008	0.256	0.006	0.014	0.007	0.015	0.007	0.016	0.007	0.018	-	-		
		<137,785	<280														
	Alloyed steel	101,526-137,785	200-280			0.005	0.013	0.006	0.014	0.006	0.015	0.006	0.015	-	-		
		137,785-174,044	280-355														
	174,044-203,052	355-415															
M	Duplex stainless steel	112,839	230														
	Austenitic stainless steel	97,900	200			0.005	0.012	0.005	0.013	-	-	-	-	-	-	-	-
	Precipitation-hardening stainless steel	146,923	300														
K	Grey cast iron	101,526	220														
	Nodular cast iron	127,633	260			0.006	0.014	0.007	0.015	0.007	0.016	0.007	0.018	-	-		
	Malleable cast iron	116,030	250														
N	Aluminum	37,709	75														
	Aluminum alloy	64,831	130	-	-	-	-	-	-	-	-	-	0.006	0.014			
S	Fe-based alloy	136,770	280														
	Co-based alloy	156,060	320														
	Ni-based alloy	170,709	350	0.004	0.010	0.005	0.011	-	-	-	-	-	-	-	-		
	Ti-alloy	183,037	370														
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

AFM75-SN12

75° Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM75-02000-Z04-A0750R-SN12-C	2.000	2.252	0.750	1.654	1.575	0.315		4	SN..1206ENN.. SN..1206..
AFM75-02500-Z06-A1000R-SN12-C	2.500	2.752	1.000	2.165	1.969	0.315		6	
AFM75-03000-Z07-A1000R-SN12-C	3.000	3.252	1.000	2.165	1.969	0.315		7	
AFM75-04000-Z08-A1500R-SN12-C	4.000	4.252	1.500	3.740	2.480	0.315		8	
AFM75-05000-Z08-A1500R-SN12-C	5.000	5.252	1.500	3.740	2.480	0.315		8	
AFM75-05000-Z10-A1500R-SN12-C	5.000	5.252	1.500	3.740	2.480	0.315		10	
AFM75-06000-Z10-A2000R-SN12	6.000	6.252	2000	4.724	2.480	0.315		10	
AFM75-08000-Z14-A2500R-SN12	8.000	8.252	2.500	5.118	2.480	0.315		14	
AFM75-10000-Z16-A2500R-SN12	10.000	10.252	2.500	6.299	2.480	0.315		16	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM75-050-Z04-A22R-SN12-N-C	50	56.4	22	42	40	8		4	SN..1206ENN.. SN..1206..
AFM75-063-Z06-A22R-SN12-N-C	63	69.4	22	52	40	8		6	
AFM75-080-Z07-A27R-SN12-N-C	80	86.4	27	62	50	8		7	
AFM75-100-Z08-A32R-SN12-N-C	100	106.4	32	67	50	8		8	
AFM75-125-Z08-A40R-SN12-N-C	125	131.4	40	90	63	8		8	
AFM75-125-Z10-A40R-SN12-N-C	125	131.4	40	90	63	8		10	
AFM75-160-Z10-A40R-SN12-N	160	166.4	40	107	63	8		10	
AFM75-200-Z14-A60R-SN12-N	200	206.4	60	130	63	8		14	
AFM75-250-Z16-A60R-SN12-N	250	256.4	60	180	63	8		16	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 2.000-10.000			31 in lbs
	SP050120	DT-TP20	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
SNGX 1206ENN-MM3	0.031	0.047	●	●	●		●	●	
SNGX 1206ENN-MM4	0.031	0.047	●	●	●		●	●	
SNGX 1206ENN-MR6	0.031	0.047	●	●	●		●	●	
SNGX 120608-MM4	0.031	-	●	●	●		●	●	
SNGX 120612-MM4	0.047	-	●						
SNMX 1206ENN-MM4	0.031	0.047			●			●	
SNMX 120608-MM4	0.031	-	●	●	●		●	●	
SNMX 120612-MM3	0.047	-	●	●	●		●	●	
SNMX 120612-MM4	0.047	-	●	●	●		●	●	
SNMX 120612R-MM4	0.047	-	●	●	●	●	●	●	
SNMX 120612-MR6	0.047	-	●	●	●		●	●	
SNMX 120612-RR2	0.047	-	●	●	●		●	●	
SNMX 120620-MM4	0.079	-	●	●	●		●	●	
SNMX 120620-RR2	0.079	-	●	●	●		●	●	
SNHX 1206ENN-W	0.024	0.189	●				●		

●: Stock available

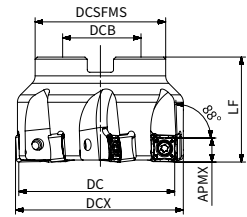
Materials				Cutting depth and feed										
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	SN..1206..										
				ap	Geometry				fz					
					MM3		MM4		MR6		RR2			
					(in)									
min	max	min	max	min	max	min	max	min	max					
P	Unalloyed steel	<87,022	<180	0.008	0.315	0.005	0.013	0.007	0.014	0.006	0.015	0.007	0.016	
		<137,785	<280											
	Alloyed steel	101,526-137,785	200-280			0.004	0.012	0.005	0.013	0.004	0.014	0.006	0.014	
		137,785-174,044	280-355											
	174,044-203,052	355-415												
M	Duplex stainless steel	112,839	230											
	Austenitic stainless steel	97,900	200			0.004	0.011	0.004	0.012	-	-	-	-	
	Precipitation-hardening stainless steel	146,923	300											
K	Grey cast iron	101,526	220											
	Nodular cast iron	127,633	260											
	Malleable cast iron	116,030	250											
N	Aluminum	37,709	75											
	Aluminum alloy	64,831	130											
S	Fe-based alloy	136,770	280											
	Co-based alloy	156,060	320											
	Ni-based alloy	170,709	350	0.004	0.009	0.004	0.010	-	-	-				
	Ti-alloy	183,037	370											
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

AFM88-SN12

88° Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM88-02000-Z04-A0750R-SN12-C	2.000	2.031	0.750	1.654	1.575	0.393		4	SN..1206ZNN.. SN..1206..
AFM88-02500-Z06-A1000R-SN12-C	2.500	2.531	1.000	2.165	1.969	0.393		6	
AFM88-03000-Z07-A1000R-SN12-C	3.000	3.031	1.000	2.165	1.969	0.393		7	
AFM88-04000-Z08-A1500R-SN12-C	4.000	4.037	1.500	3.740	2.480	0.393		8	
AFM88-04000-Z11-A1500R-SN12-C	4.000	4.037	1.500	3.740	2.480	0.393		11	
AFM88-05000-Z10-A1500R-SN12-C	5.000	5.037	1.500	3.740	2.480	0.393		10	
AFM88-05000-Z13-A1500R-SN12	5.000	5.037	1.500	3.740	2.480	0.393		13	
AFM88-06000-Z12-A2000R-SN12	6.000	6.030	2.000	4.724	2.480	0.393		12	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM88-050-Z04-A22R-SN12-N-C	50	51.2	22	42	40	10		4	SN..1206ZNN.. SN..1206..
AFM88-063-Z04-A22R-SN12-N-C	63	64.2	22	52	40	10		4	
AFM88-063-Z06-A22R-SN12-N-C	63	64.2	22	62	40	10		6	
AFM88-080-Z04-A27R-SN12-N-C	80	81.2	27	62	50	10		4	
AFM88-080-Z07-A27R-SN12-N-C	80	81.2	27	62	50	10		7	
AFM88-100-Z08-A32R-SN12-N-C	100	101.2	32	77	50	10		8	
AFM88-100-Z11-A32R-SN12-N-C	100	101.2	32	77	50	10		11	
AFM88-125-Z10-A40R-SN12-N-C	125	126.2	40	90	63	10		10	
AFM88-125-Z13-A40R-SN12-N-C	125	126.2	40	90	63	10		13	
AFM88-160-Z12-A40R-SN12-N	160	161.2	40	108	63	10		12	
AFM88-200-Z14-A60R-SN12-N	200	201.2	60	130	63	10		14	
AFM88-250-Z12-A60R-SN12-M	250	250.9	60	180	63	10		12	
AFM88-315-Z14-A60R-SN12-M	315	315.9	60	220	63	10		14	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 2.000-6.000			31 in lbs
	SP050120	DT-TP20	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
SNGX 1206ZNN-MM3	0.031	0.047	●	●	●		●	●	
SNGX 1206ZNN-MM4	0.031	0.047	●	●	●	●	●	●	
SNGX 1206ZNN-MR6	0.031	0.047	●	●	●		●	●	
SNGX 120608-MM4	0.031	-	●	●	●		●	●	
SNGX 120612-MM4	0.047	-	●						
SNMX 120608-MM4	0.031	-	●	●	●		●	●	
SNMX 120612-MM3	0.047	-	●	●	●		●	●	
SNMX 120612-MM4	0.047	-	●	●	●		●	●	
SNMX 120612R-MM4	0.047	-	●	●	●	●	●	●	
SNMX 120612-MR6	0.047	-	●	●	●		●	●	
SNMX 120612-RR2	0.047	-	●	●	●		●	●	
SNMX 120620-MM4	0.079	-	●	●	●		●	●	
SNMX 120620-RR2	0.079	-	●	●	●		●	●	
SNHX 1206ZNN-FM2	0.031	0.047							●
SNHX 1206ZNN-W	0.039	0.173	●				●		

● : Stock available

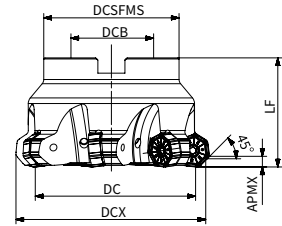
Materials				Cutting depth and feed												
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	SN.. 1206..												
				ap	Geometry					fz						
					MM3	MM4	MR6	RR2	FM2							
				(in)												
min	max	min	max	min	max	min	max	min	max	min	max	min	max			
P	Unalloyed steel	<87,022	<180	0.008	0.394	0.005	0.013	0.007	0.014	0.006	0.015	0.007	0.016	-	-	
		<137,785	<280													
	Alloyed steel	101,526-137,785	200-280			0.004	0.012	0.005	0.013	0.004	0.014	0.006	0.014	-	-	
		137,785-174,044	280-355													
174,044-203,052	355-415															
M	Duplex stainless steel	112,839	230													
	Austenitic stainless steel	97,900	200			0.004	0.011	0.004	0.012	-	-	-	-	-	-	
	Precipitation-hardening stainless steel	146,923	300													
K	Grey cast iron	101,526	220													
	Nodular cast iron	127,633	260			0.005	0.013	0.006	0.014	0.005	0.014	0.007	0.016	-	-	
	Malleable cast iron	116,030	250													
N	Aluminum	37,709	75													
	Aluminum alloy	64,831	130	-	-	-	-	-	-	-	-	0.005	0.013			
S	Fe-based alloy	136,770	280													
	Co-based alloy	156,060	320													
	Ni-based alloy	170,709	350	0.004	0.009	0.004	0.010	-	-	-	-	-	-			
	Ti-alloy	183,037	370													
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

AFM45-XN07

45° Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-02000-Z04-A0750R-XN07-C	2.000	2.380	0.750	1.654	1.575	0.173		4	XN..0705..
AFM45-02000-Z05-A0750R-XN07-C	2.000	2.380	0.750	1.654	1.575	0.173		5	
AFM45-03000-Z06-A1000R-XN07-C	3.000	3.380	1.000	2.165	1.969	0.173		6	
AFM45-03000-Z07-A1000R-XN07-C	3.000	3.380	1.000	2.165	1.969	0.173		7	
AFM45-04000-Z07-A1500R-XN07-C	4.000	4.380	1.500	3.740	2.480	0.173		7	
AFM45-04000-Z08-A1500R-XN07-C	4.000	4.380	1.500	3.740	2.480	0.173		8	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-040-Z03-A16R-XN07-C	40	49.7	16	35	40	4.4		3	XN..0705..
AFM45-050-Z04-A22R-XN07-C	50	59.7	22	42	40	4.4		4	
AFM45-050-Z05-A22R-XN07-C	50	59.7	22	42	40	4.4		5	
AFM45-063-Z05-A22R-XN07-C	63	72.7	22	48	40	4.4		5	
AFM45-063-Z06-A22R-XN07-C	63	72.7	22	48	40	4.4		6	
AFM45-080-Z06-A27R-XN07-C	80	89.7	27	62	50	4.4		6	
AFM45-080-Z07-A27R-XN07-C	80	89.7	27	62	50	4.4		7	
AFM45-100-Z07-A32R-XN07-C	100	109.7	32	77	50	4.4		7	
AFM45-100-Z08-A32R-XN07-C	100	109.7	32	77	50	4.4		8	
AFM45-125-Z08-A40R-XN07-C	125	134.7	40	87	63	4.4		8	
AFM45-125-Z10-A40R-XN07-C	125	134.7	40	87	63	4.4		10	
AFM45-160-Z09-A40R-XN07	160	169.7	40	107	63	4.4		9	
AFM45-160-Z12-A40R-XN07	160	169.7	40	107	63	4.4		12	
AFM45-200-Z14-A60R-XN07	200	209.3	60	130	63	4.4		14	
AFM45-250-Z14-A60R-XN07-S	250	259.6	60	180	63	4.4		14	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 2.000-4.000			27 in lbs
	SP035120H	DT-TP15	

Product code	Dimension (in)		P			M	K		N
	corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
XNGU 0705ANN-MM3	0.031	0.043	●	●			●		
XNGU 0705ANN-MM4	0.031	0.043	●				●		
XNMU 0705ANN-MM4	0.031	0.043	●	●	●		●	●	
XNMU 0705ANN-MR6	0.031	0.043	●	●			●	●	
XNMU 070508-MM4	0.031	-	●	●		●	●	●	
XNGX 0705ANN-W	0.039	0.220	●				●		

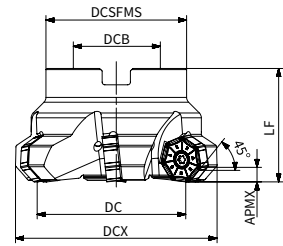
●: Stock available

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	XN.. 0705..									
				ap	Geometry			fz					
			MM3			MM4			MR6				
				(in)									
				min	max	min	max	min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.008	0.173	0.006	0.014	7.000	0.015	0.007	0.016		
		<137,785	<280										
	Alloyed steel	101,526-137,785	200-280										
		137,785-174,044	280-355										
M	Duplex stainless steel	112,839	230			0.005	0.012	0.005	0.013	-	-	-	-
	Austenitic stainless steel	97,900	200										
	Precipitation-hardening stainless steel	146,923	300										
K	Grey cast iron	101,526	220			0.006	0.014	0.007	0.015	0.007	0.016	-	-
	Nodular cast iron	127,633	260										
	Malleable cast iron	116,030	250										
N	Aluminum	37,709	75			-	-	-	-	-	-	-	-
	Aluminum alloy	64,831	130										
S	Fe-based alloy	136,770	280	0.004	0.010	0.005	0.011	-	-	-	-		
	Co-based alloy	156,060	320										
	Ni-based alloy	170,709	350										
	Ti-alloy	183,037	370										
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

AFM45-XN09

45° Approaching angle face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-02500-Z05-A1000R-XN09-C	2.500	2.980	1.000	2.165	1.969	0.236		5	XN..0906..
AFM45-03000-Z06-A1000R-XN09-C	3.000	3.480	1.000	2.165	1.969	0.236		6	
AFM45-04000-Z07-A1500R-XN09-C	4.000	4.480	1.500	3.740	2.480	0.236		7	
AFM45-04000-Z08-A1500R-XN09-C	4.000	4.480	1.500	3.740	2.480	0.236		8	
AFM45-05000-Z08-A1500R-XN09-C	5.000	5.480	1.500	3.740	2.480	0.236		8	
AFM45-05000-Z10-A1500R-XN09-C	5.000	5.480	1.500	3.740	2.480	0.236		10	
AFM45-06000-Z09-A2000R-XN09	6.000	6.480	2.000	4.724	2.480	0.236		9	
AFM45-06000-Z11-A2000R-XN09	6.000	6.480	2.000	4.724	2.480	0.236		11	
AFM45-08000-Z12-A2500R-XN09	8.000	8.480	2.500	5.118	2.480	0.236		12	

Metric

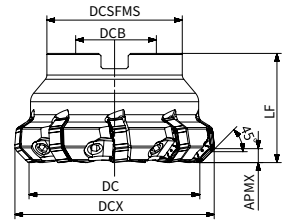
Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-063-Z05-A22R-XN09-C	63	75.2	22	48	40	6		5	XN..0906..
AFM45-080-Z06-A27R-XN09-C	80	92.2	27	62	50	6		6	
AFM45-100-Z07-A32R-XN09-C	100	112.2	32	80	50	6		7	
AFM45-100-Z08-A32R-XN09-C	100	112.2	32	80	50	6		8	
AFM45-125-Z08-A40R-XN09-C	125	137.2	40	87	63	6		8	
AFM45-125-Z10-A40R-XN09-C	125	137.2	40	87	63	6		10	
AFM45-160-Z09-A40R-XN09	160	172.2	40	107	63	6		9	
AFM45-160-Z11-A40R-XN09	160	172.2	40	107	63	6		11	
AFM45-200-Z12-A60R-XN09	200	212.2	60	130	63	6		12	
AFM45-250-Z12-A60R-XN09-S	250	262.8	60	180	63	6		12	
AFM45-315-Z14-A60R-XN09-S	315	328.2	60	240	63	6		14	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
ø 2.500-8.000			44 in lbs
	SP050130	DT-TP20	

AFM45-XN09-W

45° Wedge clamping face milling cutter



Inch

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-03000-Z09-A1000R-XN09-W	3.000	3.502	1.000	2.165	1.969	0.236		9	XN..0906..
AFM45-04000-Z12-A1500R-XN09-W	4.000	4.502	1.500	3.740	2.480	0.236		12	
AFM45-05000-Z16-A1500R-XN09-W	5.000	5.502	1.500	3.740	2.480	0.236		16	
AFM45-05000-Z16-A1500L-XN09-W	5.000	5.502	1.500	3.740	2.480	0.236		16	
AFM45-06000-Z20-A2000R-XN09-W	6.000	6.502	2.000	4.724	2.480	0.236		20	
AFM45-06000-Z20-A2000L-XN09-W	6.000	6.502	2.000	4.724	2.480	0.236		20	
AFM45-08000-Z26-A2500R-XN09-W	8.000	8.502	2.500	5.118	2.480	0.236		26	
AFM45-08000-Z26-A2500L-XN09-W	8.000	8.502	2.500	5.118	2.480	0.236		26	

Metric

Product code	DC	DCX	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
AFM45-080-Z09-A27R-XN09-W	80	92.7	27	62	50	6		9	XN..0906..
AFM45-100-Z12-A32R-XN09-W	100	112.7	32	80	50	6		12	
AFM45-125-Z16-A40R-XN09-W	125	137.7	40	87	63	6		16	
AFM45-125-Z16-A40L-XN09-W	125	137.7	40	87	63	6		16	
AFM45-160-Z20-A40R-XN09-W	160	172.7	40	107	63	6		20	
AFM45-160-Z20-A40L-XN09-W	160	172.7	40	107	63	6		20	
AFM45-200-Z26-A60R-XN09-W	200	212.7	60	130	63	6		26	
AFM45-200-Z26-A60L-XN09-W	200	212.7	60	130	63	6		26	
AFM45-250-Z30-A60R-XN09-W	250	262.7	60	170	63	6		30	
AFM45-315-Z39-A60R-XN09-W	315	327.7	60	250	63	6		39	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts			
Cutter diameter	Wedge	Screw	Wrench	Touque
∅ 3.000-8.000				62 in lbs
	AWG-8H	WD080320F	AWH4	

Product code	Dimension (in)		P			M	K		N
	Corner radius	Wiper length	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
XNGU 0906ANN-MM3	0.031	0.055	●	●	●		●		
XNGU 0906ANN-MM4	0.031	0.055	●	●	●		●		
XNMU 0906ANN-MR6	0.031	0.055	●				●	●	
XNMF 0906ANN-MR6	0.031	0.055					●	●	
XNMU 090612-MM4	0.047	-	●	●		●	●	●	
XNGX 0906ANN-W	0.039	0.295	●				●		

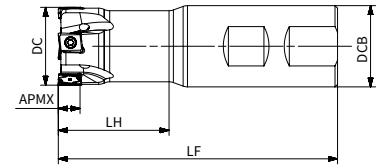
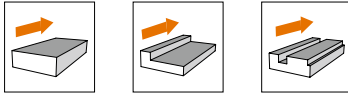
●: Stock available

Materials				Cutting depth and feed								
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	XN..0906..								
				ap	Geometry			fz				
			MM3			MM4			MR6			
				(in)								
				min	max	min	max	min	max	min	max	
P	Unalloyed steel	<87,022	<180	0.008	0.236	0.006	0.014	0.007	0.015	0.007	0.016	
		<137,785	<280									
	Alloyed steel	101,526-137,785	200-280			0.005	0.013	0.015	0.014	0.006	0.015	
		137,785-174,044	280-355									
	174,044-203,052	355-415										
M	Duplex stainless steel	112,839	230									
	Austenitic stainless steel	97,900	200			0.005	0.012	0.005	0.013	-	-	
	Precipitation-hardening stainless steel	146,923	300									
K	Grey cast iron	101,526	220									
	Nodular cast iron	127,633	260			0.006	0.014	0.007	0.015	0.007	0.016	
	Malleable cast iron	116,030	250									
N	Aluminum	37,709	75									
	Aluminum alloy	64,831	130	-	-	-	-	-	-			
S	Fe-based alloy	136,770	280									
	Co-based alloy	156,060	320	0.004	0.010	0.005	0.011	-	-			
	Ni-based alloy	170,709	350									
	Ti-alloy	183,037	370									
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

ASM90-LN09

Square shoulder milling cutter



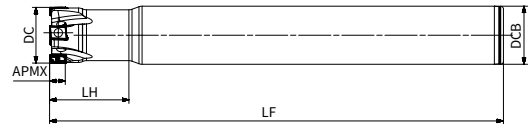
Inch

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-01000-Z03-W1000R-LN09-C	1.000	1.000	4.000	1.719	0.314		3	LNHU 0904..
ASM90-01000-Z04-W1000R-LN09-C	1.000	1.000	4.000	1.719	0.314		4	
ASM90-01250-Z04-W1250R-LN09-C	1.250	1.250	4.000	1.719	0.314		4	
ASM90-01250-Z05-W1250R-LN09-C	1.250	1.250	4.000	1.719	0.314		5	
ASM90-01500-Z04-W1500R-LN09-C	1.500	1.250	4.000	1.200	0.314		4	
ASM90-01500-Z06-W1500R-LN09-C	1.500	1.250	4.000	1.200	0.314		6	

Metric

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-025-Z03-W25R-LN09-C	25	25	100	39	8		3	LNHU 0904..
ASM90-025-Z04-W25R-LN09-C	25	25	100	39	8		4	
ASM90-032-Z04-W32R-LN09-C	32	32	110	44	8		4	
ASM90-032-Z05-W32R-LN09-C	32	32	110	44	8		5	
ASM90-040-Z04-W32R-LN09-C	40	32	110	25	8		4	
ASM90-040-Z06-W32R-LN09-C	40	32	110	25	8		6	

Milling cutters



Inch

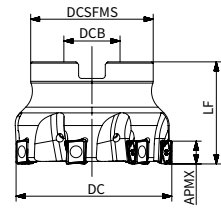
Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-00750-Z02-C0750R-LN09-L4500	0.750	0.750	4.500	1.220	0.314		2	LNHU 0904..
ASM90-00750-Z03-C0750R-LN09-L4500	0.750	0.750	4.500	1.220	0.314		3	
ASM90-01000-Z03-C1000R-LN09-L8000-C	1.000	1.000	8.000	1.574	0.314		3	
ASM90-01000-Z04-C1000R-LN09-L8000-C	1.000	1.000	8.000	1.574	0.314		4	
ASM90-01250-Z04-C1250R-LN09-L10000-C	1.250	1.250	10.000	1.968	0.314		4	
ASM90-01250-Z05-C1250R-LN09-L10000-C	1.250	1.250	10.000	1.968	0.314		5	

Metric

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-020-Z02-C20R-LN09-L110	20	20	110	30	8		2	LNHU 0904..
ASM90-020-Z03-C20R-LN09-L110	20	20	110	30	8		3	
ASM90-021-Z02-C20R-LN09-L200	21	20	200	30	8		2	
ASM90-025-Z03-C25R-LN09-L200-C	25	25	200	34	8		3	
ASM90-025-Z04-C25R-LN09-L200-C	25	25	200	34	8		4	
ASM90-026-Z03-C25R-LN09-L200-C	26	25	200	34	8		3	
ASM90-028-Z03-C25R-LN09-L110-C	28	25	110	34	8		3	
ASM90-032-Z04-C32R-LN09-L250-C	32	32	250	45	8		4	
ASM90-032-Z05-C32R-LN09-L250-C	32	32	250	45	8		5	
ASM90-033-Z04-C32R-LN09-L250-C	33	32	250	45	8		4	

ASM90-LN09

Square shoulder milling cutter



Inch

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-01500-Z04-A0750R-LN09-C	1.500	0.750	1.575	1.378	0.314		4	LNHU 0904..
ASM90-01500-Z06-A0750R-LN09-C	1.500	0.750	1.575	1.378	0.314		6	
ASM90-02000-Z05-A0750R-LN09-C	2.000	0.750	1.575	1.654	0.314		5	
ASM90-02000-Z07-A0750R-LN09-C	2.000	0.750	1.575	1.654	0.314		7	
ASM90-02500-Z07-A1000R-LN09-C	2.500	1.000	1.969	2.165	0.314		7	
ASM90-02500-Z10-A1000R-LN09-C	2.500	1.000	1.969	2.165	0.314		10	
ASM90-03000-Z09-A1000R-LN09-C	3.000	1.000	1.969	2.165	0.314		9	
ASM90-03000-Z13-A1000R-LN09-C	3.000	1.000	1.969	2.165	0.314		13	

Metric

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-040-Z04-A16R-LN09-C	40	16	40	35	8		4	LNHU 0904..
ASM90-040-Z06-A16R-LN09-C	40	16	40	35	8		6	
ASM90-050-Z05-A22R-LN09-C	50	22	40	42	8		5	
ASM90-050-Z07-A22R-LN09-C	50	22	40	42	8		7	
ASM90-063-Z07-A22R-LN09-C	63	22	40	48	8		7	
ASM90-063-Z10-A22R-LN09-C	63	22	40	48	8		10	
ASM90-080-Z09-A27R-LN09-C	80	27	50	62	8		9	
ASM90-080-Z13-A27R-LN09-C	80	27	50	62	8		13	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 0.750-3.000			16 in lbs
	SP030083	DT-TP09	

Product code	Dimension (in)		P		M		K		N
	Corner radius	Wiper length	AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AW100K
LNHU 090404ER-FM2	0.016	0.073							●
LNHU 090404ER-MM3	0.016	0.073		●		●			
LNHU 090404ER-MR2	0.016	0.073	●	●		●	●	●	
LNHU 090408ER-MR2	0.031	0.051	●	●		●	●	●	
LNHU 090412ER-MR2	0.047	0.039	●			●	●		
LNHU 090416ER-MR2	0.063	0.026	●			●	●		
LNHU 090420ER-MR2	0.079	0.026	●			●	●		
LNHU 0904PDER-W	0.016	0.142	●				●		

●: Stock available

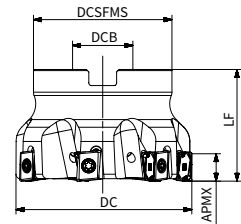
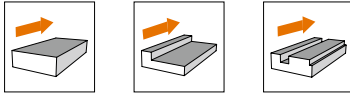
Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	LNHU 0904..							
				ap	Geometry			fz			
					MR2	MM4	FM2				
				(in)							
min	max	min	max	min	max	min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.008	0.314	0.003	0.011	0.003	0.010	-	-
		<137,785	<280								
	Alloyed steel	101,526-137,785	200-280			0.002	0.009	0.002	0.008	-	-
		137,785-174,044	280-355								
M	Duplex stainless steel	112,839	230								
	Austenitic stainless steel	97,900	200			0.002	0.009	0.002	0.008	-	-
	Precipitation-hardening stainless steel	146,923	300								
K	Grey cast iron	101,526	220								
	Nodular cast iron	127,633	260			0.003	0.012	0.003	0.011	-	-
	Malleable cast iron	116,030	250								
N	Aluminum	37,709	75							0.002	0.010
	Aluminum alloy	64,831	130								
S	Fe-based alloy	136,770	280								
	Co-based alloy	156,060	320								
	Ni-based alloy	170,709	350			0.003	0.006	-	-		
	Ti-alloy	183,037	370								
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

ASM90-LN13

Square shoulder milling cutter




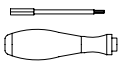


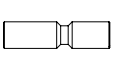
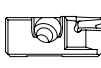

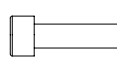
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Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-02000-Z05-A0750R-LN13-C	2.000	0.750	1.575	1.654	0.472		5	LNHU 1306..
ASM90-02000-Z06-A0750R-LN13-C	2.000	0.750	1.575	1.654	0.472		6	
ASM90-03000-Z07-A1000R-LN13-C	3.000	1.000	1.969	2.165	0.472		7	
ASM90-03000-Z10-A1000R-LN13-C	3.000	1.000	1.969	2.165	0.472		10	
ASM90-04000-Z09-A1500R-LN13-C	4.000	1.500	2.480	3.740	0.472		9	
ASM90-04000-Z13-A1500R-LN13	4.000	1.500	2.480	3.740	0.472		13	

Metric

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-040-Z04-A16R-LN13-C	40	16	40	35	12		4	LNHU 1306..
ASM90-040-Z05-A16R-LN13-C	40	16	40	35	12		5	
ASM90-050-Z05-A22R-LN13-C	50	22	40	42	12		5	
ASM90-050-Z06-A22R-LN13-C	50	22	40	42	12		6	
ASM90-063-Z04-A22R-LN13-C	63	22	40	48	12		4	
ASM90-063-Z06-A22R-LN13-C	63	22	40	48	12		6	
ASM90-063-Z08-A22R-LN13-C	63	22	40	48	12		8	
ASM90-080-Z05-A27R-LN13-C	80	27	50	62	12		5	
ASM90-080-Z07-A27R-LN13-C	80	27	50	62	12		7	
ASM90-080-Z10-A27R-LN13-C	80	27	50	62	12		10	
ASM90-100-Z07-A32R-LN13-C	100	32	50	80	12		7	
ASM90-100-Z09-A32R-LN13-C	100	32	50	80	12		9	
ASM90-100-Z13-A32R-LN13-C	100	32	50	80	12		13	
ASM90-125-Z09-A40R-LN13-C	125	40	63	87	12		9	
ASM90-125-Z11-A40R-LN13-C	125	40	63	87	12		11	
ASM90-125-Z16-A40R-LN13-C	125	40	63	87	12		16	
ASM90-160-Z09-A40R-LN13	160	40	63	107	12		9	
ASM90-160-Z13-A40R-LN13	160	40	63	107	12		13	
ASM90-200-Z12-A60R-LN13	200	60	63	140	12		12	
ASM90-250-Z12-A60R-LN13-M	250	60	63	180	12		12	
ASM90-315-Z14-A60R-LN13-M	315	60	63	220	12		14	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts								Torque
Cutter diameter	Screw	Wrench	Wedge	Wedge wrench	Wedge screw	Cartridge	Cartridge wrench	Cartridge screw	
Ø 2.000-4.000									3.5Nm
	SP040115	DT-TP15	AWG-6H-6	LT-H3	AWCH624	C-LN1342-62-90	LT-H5	ACH622	

Product code	Dimension (in)		P		M		K		N
	Corner radius	Wiper length	AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AW100K
LNHU 130608ER-FM2	0.031	0.106		●					●
LNHU 130608ER-MM3	0.031	0.106		●		●			
LNHU 130608ER-MR2	0.031	0.106	●	●	●	●	●	●	
LNHU 130612ER-MR2	0.047	0.091	●	●	●	●	●		
LNHU 130616ER-MR2	0.063	0.075	●	●	●	●	●	●	
LNHU 130620ER-MR2	0.079	0.059	●	●	●	●			
LNHU 130624ER-MR2	0.094	0.039		●	●	●			
LNHU 130631ER-MR2	0.122	0.016		●	●	●	●		
LNHU 1306PDR-W	0.031	0.220	●				●		

●: Stock available

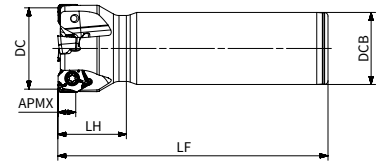
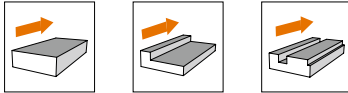
Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	LNHU..1306..											
				ap	Geometry										
					MM3		MR2								
					fz										
(in)						min	max	min	max	min	max				
P	Unalloyed steel	<87,022	<180	0.012	0.472	0.004	0.012	0.005	0.014						
		<137,785	<280												
	Alloyed steel	101,526-137,785	200-280							0.003	0.010	0.004	0.012		
		137,785-174,044	280-355												
		174,044-203,052	355-415												
M	Duplex stainless steel	112,839	230							0.002	0.008	0.003	0.010		
	Austenitic stainless steel	97,900	200												
	Precipitation-hardening stainless steel	146,923	300												
K	Grey cast iron	101,526	220							-	-	0.005	0.014		
	Nodular cast iron	127,633	260												
	Malleable cast iron	116,030	250												
N	Aluminum	37,709	75							-	-	-	-		
	Aluminum alloy	64,831	130												
S	Fe-based alloy	136,770	280	0.002	0.007	0.003	0.009								
	Co-based alloy	156,060	320												
	Ni-based alloy	170,709	350												
	Ti-alloy	183,037	370												
H	Hardened steel	-	50-60HRC	-	-	0.003	0.008								
	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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling cutters

ASM90-WN08-N

Square shoulder milling cutter



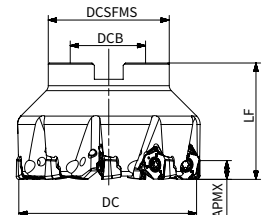
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Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-01500-Z03-W1250R-WN08-N-C	1.500	1.250	4.500	1.378	0.275		3	WNMU 0806..
ASM90-01500-Z04-W1250R-WN08-N-C	1.500	1.250	4.500	1.378	0.275		4	

Metric

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-040-Z03-W32R-WN08-N-C	40	32	120	30	7		3	WNMU 0806..
ASM90-040-Z04-W32R-WN08-N-C	40	32	120	30	7		4	

Inch



Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-02000-Z04-A0750R-WN08-N-C	2.000	0.750	1.575	1.654	0.275		4	WNMU 0806..
ASM90-02000-Z05-A0750R-WN08-N-C	2.000	0.750	1.575	1.654	0.275		5	
ASM90-02500-Z04-A1000R-WN08-N-C	2.500	1.000	1.969	2.165	0.275		4	
ASM90-02500-Z06-A1000R-WN08-N-C	2.500	1.000	1.969	2.165	0.275		6	
ASM90-02500-Z07-A1000R-WN08-N-C	2.500	1.000	1.969	2.165	0.275		7	
ASM90-03000-Z05-A1000R-WN08-N-C	3.000	1.000	1.969	2.165	0.275		5	
ASM90-03000-Z07-A1000R-WN08-N-C	3.000	1.000	1.969	2.165	0.275		7	
ASM90-03000-Z09-A1000R-WN08-N-C	3.000	1.000	1.969	2.165	0.275		9	
ASM90-04000-Z06-A1500R-WN08-N-C	4.000	1.500	2.480	3.740	0.275		6	
ASM90-04000-Z08-A1500R-WN08-N-C	4.000	1.500	2.480	3.740	0.275		8	
ASM90-04000-Z11-A1500R-WN08-N	4.000	1.500	2.480	3.740	0.275		11	
ASM90-05000-Z07-A1500R-WN08-N-C	5.000	1.500	2.480	3.740	0.275		7	
ASM90-05000-Z11-A1500R-WN08-N-C	5.000	1.500	2.480	3.740	0.275		11	
ASM90-05000-Z13-A1500R-WN08-N	5.000	1.500	2.480	3.740	0.275		13	
ASM90-06000-Z08-A2000R-WN08-N	6.000	2.000	2.480	4.724	0.275		8	
ASM90-06000-Z12-A2000R-WN08-N	6.000	2.000	2.480	4.724	0.275		12	

Metric

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-050-Z04-A22R-WN08-N-C	50	22	40	42	7		4	WNMU 0806..
ASM90-050-Z05-A22R-WN08-N-C	50	22	40	42	7		5	
ASM90-063-Z04-A22R-WN08-N-C	63	22	40	48	7		4	
ASM90-063-Z06-A22R-WN08-N-C	63	22	40	48	7		6	
ASM90-063-Z07-A22R-WN08-N-C	63	22	40	48	7		7	
ASM90-080-Z05-A27R-WN08-N-C	80	27	50	62	7		5	
ASM90-080-Z07-A27R-WN08-N-C	80	27	50	62	7		7	
ASM90-080-Z09-A27R-WN08-N-C	80	27	50	62	7		9	
ASM90-100-Z06-A32R-WN08-N-C	100	32	50	80	7		6	
ASM90-100-Z08-A32R-WN08-N-C	100	32	50	80	7		8	
ASM90-100-Z11-A32R-WN08-N-C	100	32	50	80	7		11	
ASM90-125-Z07-A40R-WN08-N-C	125	40	63	87	7		7	
ASM90-125-Z11-A40R-WN08-N-C	125	40	63	87	7		11	
ASM90-125-Z13-A40R-WN08-N-C	125	40	63	87	7		13	
ASM90-160-Z08-A40R-WN08-N	160	40	63	107	7		8	
ASM90-160-Z12-A40R-WN08-N	160	40	63	107	7		12	
ASM90-200-Z14-A60R-WN08-N	200	60	63	140	7		14	
ASM90-250-Z16-A60R-WN08-N	250	60	63	180	7		16	

Note: With internal coolant
 Without internal coolant

Milling cutters

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
Ø 1.500-6.000			3.5Nm
	SP040112	DT-TP15	

Product code	Dimension (in)		P	M		K	
	Corner radius	Wiper length	AP251U	AP351M	AP403M	AC301K	AP251K
WNMU 080608R-MR2	0.031	0.091	●	●	●	●	●
WNMU 080608R-MM4	0.031	0.091	●	●	●	●	●
WNMU 080608R-MM3	0.031	0.091	●	●	●	●	●
WNMU 080612R-MR2	0.047	0.047	●	●		●	●
WNMU 080612R-MM4	0.047	0.046	●	●	●		●
WNMU 080616R-MR2	0.063	0.032	●		●		
WNMU 080616R-MM4	0.063	0.031	●		●		

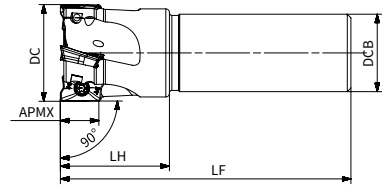
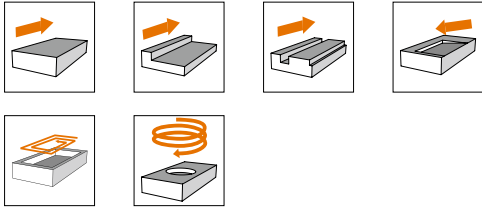
●: Stock available

Materials				Cutting depth and feed							
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	WNMU 0806..							
				ap	MM3		MM4		MR2		
					(in)						
		min	max	min	max	min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.023	0.275	0.005	0.010	0.005	0.011	0.005	0.012
		<137,785	<280								
	Alloyed steel	101,526-137,785	200-280			0.004	0.008	0.004	0.010	0.004	0.011
		137,785-174,044	280-355								
	174,044-203,052	355-415									
M	Duplex stainless steel	112,839	230								
	Austenitic stainless steel	97,900	200			0.08	0.007	0.003	0.007	-	-
	Precipitation-hardening stainless steel	146,923	300								
K	Grey cast iron	101,526	220								
	Nodular cast iron	127,633	260			0.003	0.008	0.004	0.011	0.006	0.012
	Malleable cast iron	116,030	250								
S	Fe-based alloy	136,770	280								
	Co-based alloy	156,060	320								
	Ni-based alloy	170,709	350	0.005	0.005	0.004	0.006	-	-		
	Ti-alloy	183,037	370								
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

ASM90-AP17

Square shoulder milling cutter



Inch

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-01000-Z02-C1000R-AP17-L4000-C	1.000	1.000	4.000	1.750	0.630		2	APKT 1705..
ASM90-01250-Z03-C1250R-AP17-L4500-C	1.250	1.250	4.500	2.250	0.630		3	
ASM90-01500-Z04-C1500R-AP17-L10000-C	1.500	1.500	10.000	2.250	0.630		4	

Metric

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-025-Z02-C25R-AP17-L100-C	25	25	100	39	16		2	APKT 1705..
ASM90-032-Z03-C32R-AP17-L110-C	32	32	110	40	16		3	
ASM90-032-Z03-C32R-AP17-L200-C	32	32	200	40	16		3	
ASM90-040-Z04-C32R-AP17-L120-C	40	32	120	45	16		4	

Inch

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-02000-Z05-A0750R-AP17-C	2.000	0.750	1.575	1.654	0.630		5	APKT 1705..
ASM90-02500-Z06-A1000R-AP17-C	2.500	1.000	1.969	2.165	0.630		6	

Metric

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-050-Z05-A22R-AP17-C	50	22	40	45	16		5	APKT 1705..
ASM90-063-Z06-A22R-AP17-C	63	22	40	55	16		6	
ASM90-080-Z06-A27R-AP17-C	80	27	50	62	16		6	
ASM90-100-Z08-A32R-AP17-C	100	32	50	78	16		8	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 1.000	SP040084	DT-TP15	4.0Nm
∅ 1.250-2.500	SP040100H		

Note: With internal coolant
 Without internal coolant

Milling cutters

Product code	Dimension (in)		P		M		K		S	N
	Corner radius	Wiper length	AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AP403S	AW100K
APKT 1705PDER-DT	0.031	0.085	●	●		●		●		●
APKT 170516R-DT	0.063	0.067	●					●		
APKT 170524R-DT	0.094	0.037	●		●	●		●		
APKT 170530R-DT	0.118	0.019	●		●	●		●		
APKT 170540R-DT	0.157	-	●		●	●				

●: Stock available

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	APKT..1705..					
				ap		DT			
						fz			
				(in)					
				min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.004	0.630	0.003	0.010		
		<137,785	<280						
	Alloyed steel	101,526-137,785	200-280					0.002	0.009
		137,785-174,044	280-355						
		174,044-203,052	355-415						
M	Duplex stainless steel	112839	230			0.002	0.008		
	Austenitic stainless steel	97900	200						
	Precipitation-hardening stainless steel	146923	300						
K	Grey cast iron	101,526	220	0.003	0.010				
	Nodular cast iron	127,633	260						
	Malleable cast iron	116,030	250						
N	Aluminum	37,709	75	0.002	0.012				
	Aluminum alloy	64,831	130						
S	Fe-based alloy	136,770	280	0.002	0.007				
	Co-based alloy	156,060	320						
	Ni-based alloy	170,709	350						
	Ti-alloy	183,037	370						
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

ASM90-TD15

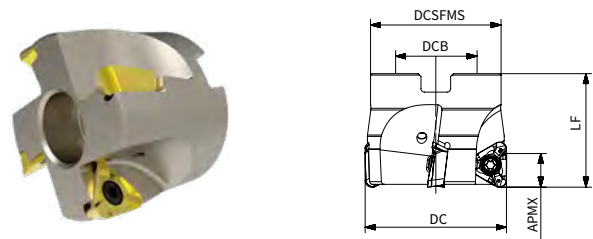
Square shoulder milling cutter



Inch

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-01250-Z02-C1250R-TD15-C	1.250	1.250	5.125	2.750	0.433		2	TD.T 1505..
ASM90-01250-Z02-C1250R-TD15-L8000-C	1.250	1.250	8.000	2.750	0.433		2	
ASM90-01500-Z03-C1250R-TD15-C	1.500	1.250	4.724	1.575	0.433		3	
ASM90-01500-Z03-C1250R-TD15-L8000-C	1.500	1.250	8.000	1.575	0.433		3	


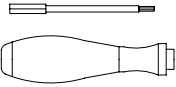
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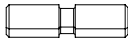




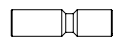




Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-01500-Z04-A0750R-TD15-C	1.500	0.750	1.575	1.378	0.433		4	TD.T 1505..
ASM90-02000-Z04-A0750R-TD15-C	2.000	0.750	1.575	1.654	0.433		4	
ASM90-02000-Z05-A0750R-TD15-C	2.000	0.750	1.575	1.654	0.433		5	
ASM90-02500-Z04-A1000R-TD15-C	2.500	1.000	1.969	2.165	0.433		4	
ASM90-02500-Z05-A1000R-TD15-C	2.500	1.000	1.969	2.165	0.433		5	
ASM90-02500-Z06-A1000R-TD15-C	2.500	1.000	1.969	2.165	0.433		6	
ASM90-03000-Z05-A1000R-TD15-C	3.000	1.000	1.969	2.165	0.433		5	
ASM90-03000-Z06-A1000R-TD15-C	3.000	1.000	1.969	2.165	0.433		6	
ASM90-03000-Z07-A1000R-TD15-C	3.000	1.000	1.969	2.165	0.433		7	
ASM90-04000-Z06-A1500R-TD15-C	4.000	1.500	2.480	3.740	0.433		6	
ASM90-04000-Z08-A1500R-TD15-C	4.000	1.500	2.480	3.740	0.433		8	
ASM90-05000-Z07-A1500R-TD15-C	5.000	1.500	2.480	3.740	0.433		7	
ASM90-05000-Z09-A1500R-TD15-C	5.000	1.500	2.480	3.740	0.433		9	
ASM90-06000-Z08-A2000R-TD15	6.000	2.000	2.480	4.724	0.433		8	
ASM90-06000-Z10-A2000R-TD15	6.000	2.000	2.480	4.724	0.433		10	
ASM90-08000-Z09-A2500R-TD15	8.000	2.500	2.480	5.118	0.433		9	
ASM90-08000-Z11-A2500R-TD15	8.000	2.500	2.480	5.118	0.433		11	

Note: With internal coolant
 Without internal coolant

Milling cutters

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 1.250-8.000			3.5Nm
	SP040100H	DT-TP15	
ASM90-01500-Z04-A0750R-TD15-C	WD080300	LT-H4	

Mounting bolt	Mounting bolt wrench	Cartridge screw	Cartridge screw wrench	Wedge	Wedge screw	Wedge screw wrench	Cartridge
							
WD080300	LT-H4	ACH622	LT-H5	AWG-6H-6	AWCH624	LT-H3	C-TD1540-62-90

Product code	Dimension (in)		P	M		K		N
	Corner radius	Wiper length	AP251U	AP351M	AP403M	AC301K	AP251K	AW100K
TDMT 150508R-MM4	0.031	0.059	●	●	●	●	●	
TDMT 150512R-MM4	0.047	0.039	●	●	●	●	●	
TDMT 150516R-MM4	0.063	0.037	●	●	●	●	●	
TDMT 150520R-MM4	0.079	0.028	●		●		●	
TDMT 150524R-MM4	0.094	0.023	●		●		●	
TDMT 150531R-MM4	0.122	0.016	●		●		●	
TDMT 150540R-MM4	0.157	0.016	●		●		●	
TDMT 150508R-MM3	0.031	0.059	●		●		●	
TDHT 150508R-MM4	0.031	0.059	●				●	

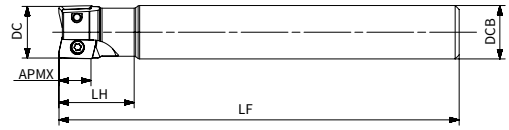
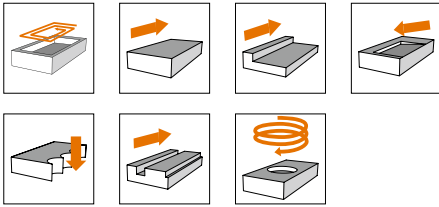
● : Stock available

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	TD.T 1505..					
				ap		fz			
				(in)					
		min	max	min	max				
P	Unalloyed steel	<87,022	<180	0.004	0.433	0.003	0.010		
		<137,785	<280						
	Alloyed steel	101,526-137,785	200-280			0.002	0.009		
		137,785-174,044	280-355						
		174,044-203,052	355-415						
M	Duplex stainless steel	112,839	230					0.002	0.008
	Austenitic stainless steel	97,900	200						
	Precipitation-hardening stainless steel	146,923	300						
K	Grey cast iron	101.526	220					0.003	0.010
	Nodular cast iron	127.633	260						
	Malleable cast iron	116.030	250						
N	Aluminum	37,709	75					0.002	0.012
	Aluminum alloy	64,831	130						
S	Fe-based alloy	136,77	280			0.002	0.007		
	Co-based alloy	156,060	320						
	Ni-based alloy	170,709	350						
	Ti-alloy	183,037	370						
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinker.

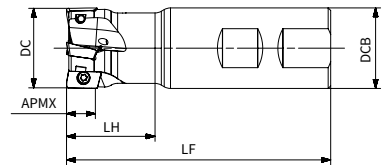
ASM90-A012

Square shoulder milling cutter



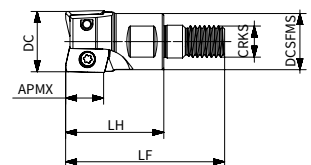
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Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-00750-Z02-C0750R-A012-L6000-C	0.750	0.750	6.000	1.102	0.433		2	AO.T 1204..
ASM90-01000-Z03-C1000R-A012-L6700-C	1.000	1.000	6.700	1.299	0.433		3	
ASM90-01250-Z04-C1250R-A012-L10000-C	1.250	1.250	10.000	1.378	0.433		4	



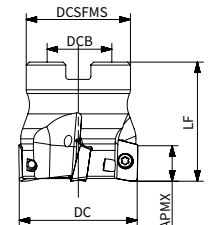
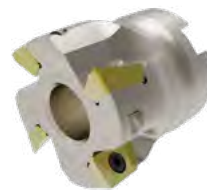
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Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
ASM90-00750-Z02-W0750R-A012-C	0.750	0.750	3.346	1.181	0.433		2	AO.T 1204..
ASM90-01000-Z03-W0750R-A012-C	1.000	0.750	3.740	1.378	0.433		3	
ASM90-01250-Z04-W1250R-A012-C	1.250	1.250	4.134	1.575	0.433		4	
ASM90-01500-Z04-W1250R-A012-C	1.500	1.500	4.724	1.772	0.433		4	



Inch

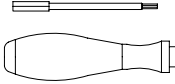
Product code	DC	LF	LH	CRKS	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-00750-Z02-M10R-A012-C	0.750	2.008	1.220	M10	0.709	0.433		2	AO.T 1204..
ASM90-01000-Z03-M12R-A012-C	1.000	2.323	1.457	M12	0.906	0.433		3	
ASM90-01250-Z04-M16R-A012-C	1.250	2.835	1.890	M16	1.142	0.433		4	



Inch

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Z	Inserts
ASM90-01500-Z04-A0750R-A012-C	1.500	0.750	1.575	1.378	0.433		4	AO.T 1204..
ASM90-02000-Z05-A0750R-A012-C	2.000	0.750	1.575	1.654	0.433		5	
ASM90-02000-Z07-A0750R-A012-C	2.000	0.750	1.575	1.654	0.433		7	
ASM90-02500-Z06-A1000R-A012-C	2.500	1.000	1.969	2.165	0.433		6	
ASM90-02500-Z08-A1000R-A012-C	2.500	1.000	1.969	2.165	0.433		8	
ASM90-03000-Z07-A1000R-A012-C	3.000	1.000	1.969	2.165	0.433		7	
ASM90-03000-Z10-A1000R-A012-C	3.000	1.000	1.969	2.165	0.433		10	

Note: With internal coolant
 Without internal coolant

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 0.750-1.250	SP035078		4.0Nm
∅ 1.500-3.000	SP035086	DT-TP10	

Product code	Dimension (in)		P	M		K	S	
	Corner radius	Wiper length	AP251U	AP351M	AP403M	AC301K	AP251K	AP403S
AOGU 120408ER-MM3	0.031	-	●	●	●			●
AOMT 120408ER-MM4	0.031	0.061	●	●	●		●	●
AOMT 120412ER-MM4	0.047	0.046		●	●			●
AOMT 120416ER-MM4	0.063	0.046		●	●			●
AOMT 120420ER-MM4	0.079	0.038	●	●	●			●
AOMT 120424ER-MM4	0.094	0.037	●	●	●			●
AOMT 120431ER-MM4	0.122	0.023		●	●			●
AOMT 120440ER-MM4	0.157	0.030		●	●			●

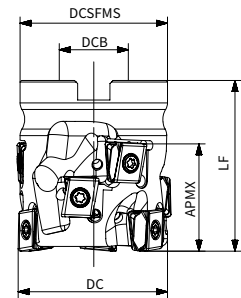
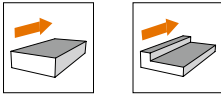
●: Stock available

Materials				Cutting depth and feed					
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	AO.T 1204..					
				ap		fz			
				(in)					
				min	max	min	max		
P	Unalloyed steel	<87,022	<180	0.004	0.433	0.003	0.010		
		<137,785	<280						
	Alloyed steel	101,526-137,785	200-280					0.002	0.009
		137,785-174,044	280-355						
		174,044-203,052	355-415						
M	Duplex stainless steel	112839	230			0.002	0.008		
	Austenitic stainless steel	97900	200						
	Precipitation-hardening stainless steel	146923	300						
K	Grey cast iron	101,526	220			0.003	0.010		
	Nodular cast iron	127,633	260						
	Malleable cast iron	116,030	250						
N	Aluminum	37,709	75	0.002	0.012				
	Aluminum alloy	64,831	130						
S	Fe-based alloy	136,770	280	0.002	0.007				
	Co-based alloy	156,060	320						
	Ni-based alloy	170,709	350						
	Ti-alloy	183,037	370						
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

APE90-LN13

Square shoulder porcupine milling cutter

**Inch**

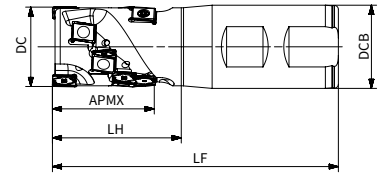
Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Clamping screw	Z	Row	Insert QTY	Inserts
APE90-01500-Z02-A0750R-LN13-L1339-F-C	1.500	0.750	2.165	1.535	1.339		SH100400	2	3	6	LNHU 1306..
APE90-01500-Z02-A0750R-LN13-L1772-F-C	1.500	0.750	2.559	1.535	1.772		SH100450	2	4	8	
APE90-02000-Z03-A0750R-LN13-L1339-F-C	2.000	0.750	2.165	1.870	1.339		SH100400	3	3	9	
APE90-02000-Z03-A0750R-LN13-L1772-F-C	2.000	0.750	2.559	1.870	1.772		SH100450	3	4	12	
APE90-02500-Z04-A1000R-LN13-L2205-F-C	2.500	1.000	3.150	2.343	2.205		SH120600	4	5	20	
APE90-02500-Z04-A1000R-LN13-L1772-F-C	2.500	1.000	2.756	2.343	1.772		SH120500	4	4	16	
APE90-03000-Z05-A1500R-LN13-L2205-F-C	3.000	1.500	3.346	2.976	2.205		SH160650	5	5	25	

Metric

Product code	DC	DCB	LF	DCSFMS	APMX	Internal coolant	Clamping screw	Z	Row	Insert QTY	Inserts
APE90-040-Z02-A16R-LN13-L34-F-C	40	16	55	39	34		SH100400	2	3	6	LNHU 1306..
APE90-040-Z02-A16R-LN13-L45-F-C	40	16	65	39	45		SH100450	2	4	8	
APE90-050-Z03-A22R-LN13-L34-F-C	50	22	55	47.5	34		SH100400	3	3	9	
APE90-050-Z03-A22R-LN13-L45-F-C	50	22	65	47.5	45		SH100450	3	4	12	
APE90-063-Z04-A27R-LN13-L56-F-C	63	27	80	59.5	56		SH120600	4	5	20	
APE90-063-Z04-A27R-LN13-L45-F-C	63	27	70	59.5	45		SH120500	4	4	16	
APE90-080-Z05-A32R-LN13-L56-F-C	80	32	85	75.6	56		SH160650	5	5	25	

APE90-LN13

Square shoulder porcupine milling cutter



Inch

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Row	Insert QTY	Inserts
APE90-01500-Z02-W1500R-LN13-L1339-F-C	1.500	1.500	4.724	2.126	1.339		2	3	6	LNHU 1306..
APE90-01500-Z02-W1500R-LN13-L1772-F-C	1.500	1.500	5.315	2.520	1.772		2	4	8	

Metric

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Row	Insert QTY	Inserts
APE90-040-Z02-W40R-LN13-L34-F-C	40	40	120	54	34		2	3	6	LNHU 1306..
APE90-040-Z02-W40R-LN13-L45-F-C	40	40	135	64	45		2	4	8	

Clamping screw	Product code	Screw type	Clamping torque
	SH080400	M8*40	41N-m
	SH080500	M8*50	41N-m
	SH100550	M10*55	81N-m
	SH100400	M10*40	81N-m
	SH100450	M10*45	81N-m
	SH120500	M12*50	142N-m
	SH120600	M12*60	142N-m
	SH160650	M16*65	350N-m

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 1.500-3.000			3.5Nm
	SP040115	DT-TP15	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P		M		K		N
	Corner radius	Wiper length	AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AW100K
LNHU 130608ER-FM2	0.031	0.106							●
LNHU 130608ER-MM3	0.031	0.106		●		●			
LNHU 130608ER-MR2	0.031	0.106	●	●	●	●	●	●	
LNHU 130612ER-MR2	0.047	0.091	●	●	●	●	●	●	
LNHU 130616ER-MR2	0.063	0.075	●	●	●	●		●	
LNHU 130620ER-MR2	0.079	0.059		●	●	●	●		
LNHU 130624ER-MR2	0.094	0.039		●	●	●	●		
LNHU 130631ER-MR2	0.122	0.016		●	●	●	●		
LNHU 1306PDR-W	0.031	0.220	●					●	

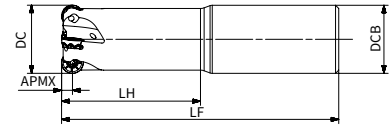
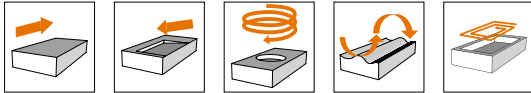
●: Stock available

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	LNHU..1306..									
				ap		MM3		MR2					
						fz							
				(in)									
min		max		min		max							
P	Unalloyed steel	<87,022	<180	0.012	0.472	0.004	0.012	0.005	0.014				
		<137,785	<280										
	Alloyed steel	101,526-137,785	200-280							0.003	0.010	0.004	0.012
		137,785-174,044	280-355										
M	Duplex stainless steel	112839	230			0.002	0.008	0.003	0.010				
	Austenitic stainless steel	97900	200										
	Precipitation-hardening stainless steel	146923	300										
K	Grey cast iron	101,526	220			-	-	0.005	0.014				
	Nodular cast iron	127,633	260										
	Malleable cast iron	116,030	250										
N	Aluminum	37,709	75			-	-	-	-				
	Aluminum alloy	64,831	130										
S	Fe-based alloy	136,770	280	0.002	0.007	0.003	0.009						
	Co-based alloy	156,060	320										
	Ni-based alloy	170,709	350										
	Ti-alloy	183,037	370										
H	Hardened steel	-	50-60HRC	-	-	0.003	0.008						
	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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

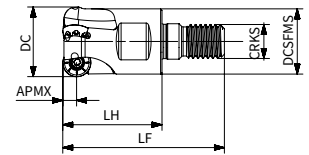
Milling cutters

APM00-RO10
Profile milling



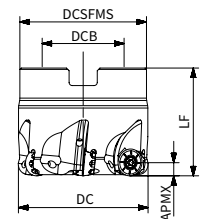
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Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
APM00-01000-Z03-C1000R-RO10-L5125-C	1.000	1.000	5.125	2.200	0.197		3	R0..10T3..
APM00-01250-Z04-C1250R-RO10-L5125-C	1.250	1.250	5.125	2.559	0.197		4	



Inch

Product code	DC	CRKS	DCSFMS	LF	LH	APMX	Internal coolant	Z	Inserts
APM00-01000-Z03-M12R-RO10-C	1.000	M12	0.906	2.244	1.378	0.197		3	R0..10T3..
APM00-01250-Z04-M16R-RO10-C	1.250	M16	1.142	2.520	1.575	0.197		4	



Inch

Product code	DC	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
APM00-01500-Z05-A0750R-RO10-C	1.500	0.750	1.378	1.575	0.197		5	R0..10T3..
APM00-02000-Z06-A0750R-RO10-C	2.000	0.750	1.654	1.575	0.197		6	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 1.000-2.000			18 in lbs
	SP030072H	DT-TP09	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		S
	IC	S	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AP403S
ROHT 10T3M8E-MM3	0.398	0.156				●			●
ROMT 10T3M4E-MR6	0.398	0.156				●			●

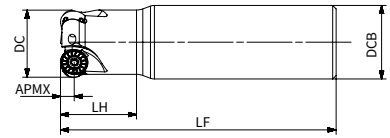
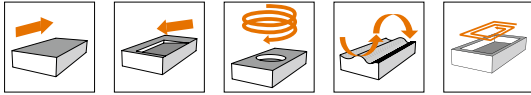
●: Stock available

Materials				Cutting depth and feed									
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	RO..10T3..									
				ap	MM3				MR6				
					fz		fz		fz		fz		
					0.1 < ap ≤ 1.2	1.2 < ap ≤ 5	0.1 < ap ≤ 1.2	1.2 < ap ≤ 5	0.1 < ap ≤ 1.2	1.2 < ap ≤ 5	0.1 < ap ≤ 1.2	1.2 < ap ≤ 5	
(in)													
min		max		min		max		min		max			
P	Unalloyed steel	<87,022	<180	0.031	0.197	0.006	0.022	0.004	0.012	0.006	0.024	0.004	0.013
		<137,785	<280			0.005	0.020	0.003	0.011	0.005	0.022	0.003	0.012
	Alloyed steel	101,526-137,785	200-280			0.004	0.018	0.003	0.010	0.004	0.020	0.003	0.110
		137,785-174,044	280-355			-	-	-	-	-	-	-	-
174,044-203,052	355-415	-	-			-	-	-	-	-	-		
M	Duplex stainless steel	112,839	230			-	-	-	-	-	-	-	-
	Austenitic stainless steel	97,900	200			-	-	-	-	-	-	-	
	Precipitation-hardening stainless steel	146,923	300			-	-	-	-	-	-	-	
K	Grey cast iron	101,526	220			-	-	-	-	-	-	-	
	Nodular cast iron	127,633	260			-	-	-	-	-	-	-	
	Malleable cast iron	116,030	250			-	-	-	-	-	-	-	
N	Aluminum	37,709	75			-	-	-	-	-	-	-	
	Aluminum alloy	64,831	130	-	-	-	-	-	-	-			
S	Fe-based alloy	136,770	280	0.004	0.016	0.003	0.010	-	-	-	-		
	Co-based alloy	156,060	320	-	-	-	-	-	-	-			
	Ni-based alloy	170,709	350	-	-	-	-	-	-	-			
	Ti-alloy	183,037	370	-	-	-	-	-	-	-			
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

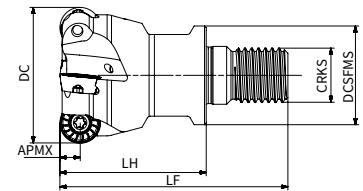
Milling cutters

APM00-RO12
Profile milling



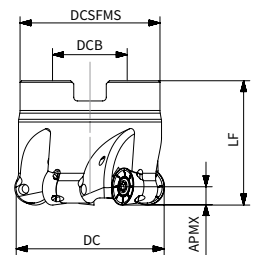
Inch

Product code	DC	DCB	LF	LH	APMX	Internal coolant	Z	Inserts
APM00-01250-Z03-C1250R-RO12-L6000-C	1.250	1.250	6.000	2.704	0.236		3	RO..1204..



Inch

Product code	DC	CRKS	DCSFMS	LF	LH	APMX	Internal coolant	Z	Inserts
APM00-01500-Z04-M16R-RO12-C	1.500	M16	1.142	2.756	1.811	0.236		4	RO..1204..



Inch

Product code	DC	DCB	DCSFMS	LF	APMX	Internal coolant	Z	Inserts
APM00-02000-Z05-A0750R-RO12-C	2.000	0.750	1.654	1.575	0.236		5	RO..1204..
APM00-02500-Z06-A1000R-RO12-C	2.500	1.000	2.165	1.969	0.236		6	
APM00-03000-Z07-A1000R-RO12-C	3.000	1.000	2.165	1.969	0.236		7	

Dimension (in)	Spare parts		
Cutter diameter	Screw	Wrench	Torque
∅ 1.250-3.000			36 in lbs
	SP040085H	DT-TP10	

Note: With internal coolant
 Without internal coolant

Product code	Dimension (in)		P			M	K		S
	IC	S	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AP403S
ROHT 1204M4E-MM3	0.472	0.187				●			●
ROHT 1204M6E-MM3	0.472	0.187				●			●
ROMT 1204M6E-MR6	0.472	0.187				●			●

●: Stock available

Materials				Cutting depth and feed											
ISO	Material classification	Tensile strength (lbs/in ²)	Hardness (HB)	RO..1204..											
				ap	MM3				MR6						
					fz										
					0.1 < ap ≤ 1.5		1.5 < ap ≤ 6		0.1 < ap ≤ 1.5		1.5 < ap ≤ 6				
				(in)											
min	max	min	max	min	max	min	max	min	max	min	max				
P	Unalloyed steel	<87,022	<180	0.031	0.236	0.007	0.024	0.005	0.013	0.007	0.026	0.005	0.014		
		<137,785	<280												
	Alloyed steel	101,526-137,785	200-280			0.006	0.022	0.004	0.012	0.006	0.024	0.004	0.013		
		137,785-174,044	280-355												
174,044-203,052	355-415														
M	Duplex stainless steel	112,839	230												
	Austenitic stainless steel	97,900	200			0.005	0.020	0.004	0.011	0.005	0.022	0.004	0.012		
	Precipitation-hardening stainless steel	146,923	300												
K	Grey cast iron	101,526	220					-	-	-	-	-	-	-	-
	Nodular cast iron	127,633	260												
	Malleable cast iron	116,030	250												
N	Aluminum	37,709	75					-	-	-	-	-	-	-	-
	Aluminum alloy	64,831	130												
S	Fe-based alloy	136,770	280												
	Co-based alloy	156,060	320												
	Ni-based alloy	170,709	350			0.005	0.018	0.004	0.011	-	-	-	-		
	Ti-alloy	183,037	370												
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, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.









Milling cutters

Milling Insert Denomination System

A
1

O
2








1- Shape/Code

A	H	M	O	R
				
S	T	Z	X	Special
				

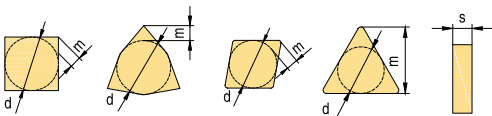
M
3

T
4

2- Clearance Angle

C	D	E	F
			
G	N	P	O
			Other clearance angle

3- Tolerance

















Class	Unit	In. Circle dimension d	Nose height m	Thickness s
A	in	± 0,0010	± 0,0002	± 0,0010
C	in	± 0,0010	± 0,0005	± 0,0010
E	in	± 0,0010	± 0,0010	± 0,0010
F	in	± 0,0005	± 0,0002	± 0,0010
G	in	± 0,0010	± 0,0010	± 0,0050
H	in	± 0,0005	± 0,0005	± 0,0250
J	in	*	± 0,0002	± 0,0010
K	in	*	± 0,0005	± 0,0010
L	in	*	± 0,0010	± 0,0010
M	in	*	*	± 0,0050
U	in	*	*	± 0,0050
N	in	*	*	± 0,0010

* For details refer to right and below tables

IC	Shape: C, E, H, M, O, P, S, T, R, W			
	d		m	
	J,K,L,M,N	U	M, N	U
3/16	± 0,0020	± 0,0030	± 0,0030	± 0,0050
7/32	± 0,0020	± 0,0030	± 0,0030	± 0,0050
0.236	± 0,0020	± 0,0030	± 0,0030	± 0,0050
1/4	± 0,0020	± 0,0030	± 0,0030	± 0,0050
5/16	± 0,0020	± 0,0030	± 0,0030	± 0,0050
0.315	± 0,0020	± 0,0030	± 0,0030	± 0,0050
3/8	± 0,0020	± 0,0030	± 0,0030	± 0,0050
0.394	± 0,0020	± 0,0030	± 0,0030	± 0,0050
0.472	± 0,0030	± 0,0050	± 0,0050	± 0,0080
1/2	± 0,0030	± 0,0050	± 0,0050	± 0,0080
5/8	± 0,0040	± 0,0070	± 0,0060	± 0,0110
0.630	± 0,0040	± 0,0070	± 0,0060	± 0,0110
3/4	± 0,0040	± 0,0070	± 0,0060	± 0,0110
0.787	± 0,0040	± 0,0070	± 0,0060	± 0,0110
0.984	± 0,0050	± 0,0100	± 0,0070	± 0,0150
1	± 0,0050	± 0,0100	± 0,0070	± 0,0150
1 1/4	± 0,0060	± 0,0100	± 0,0080	± 0,0150
1.260	± 0,0060	± 0,0100	± 0,0080	± 0,0150

M&N shape	D shape		V shape	
IC	d	m	d	m
7/32	± 0,0020	± 0,0043		
1/4	± 0,0020	± 0,0043	± 0,0020	± 0,0060
5/16	± 0,0020	± 0,0043	± 0,0020	± 0,0060
3/8	± 0,0020	± 0,0043	± 0,0020	± 0,0060
1/2	± 0,0030	± 0,0060	± 0,0030	± 0,0080
5/8	± 0,0040	± 0,0070	± 0,0040	± 0,0110
3/4	± 0,0040	± 0,0070	± 0,0040	± 0,0110

4- Clamping Type

A	B	C	F	G
				
H	J	M	N	Q
				
R	T	U	W	Z
				Special

12	04	08				
5	6	7				
5- Cutting edge length						
In. Circle dimension (mm)	H	M	O	R	S	T Z
0.125						05
0.157						06
0.196			05			
7/32						09
0.236			06			
1/4						11
5/16						13
0.315			08			
3/8			09	09	16	
0.394			10			
0.472			12			
1/2		04	12	12	22	
5/8			15	15	27	
0.630		06	16			
3/4			19	19	33	
0.787			20			
0.984			25	25		
1			25			
1 1/4			31			
1.260			32			

7-Corner radius and wiper edge																	
	<table border="0"> <tr><td>00 = sharp</td><td>24 = 0.093</td></tr> <tr><td>01 = 0.004</td><td>28 = 0.109</td></tr> <tr><td>02 = 0.008</td><td>32 = 0.125</td></tr> <tr><td>04 = 0.015</td><td>40 = 0.157</td></tr> <tr><td>08 = 0.031</td><td>48 = 0.188</td></tr> <tr><td>12 = 0.047</td><td>56 = 0.220</td></tr> <tr><td>16 = 0.062</td><td>64 = 0.251</td></tr> <tr><td>20 = 0.078</td><td>X = others</td></tr> </table>	00 = sharp	24 = 0.093	01 = 0.004	28 = 0.109	02 = 0.008	32 = 0.125	04 = 0.015	40 = 0.157	08 = 0.031	48 = 0.188	12 = 0.047	56 = 0.220	16 = 0.062	64 = 0.251	20 = 0.078	X = others
00 = sharp	24 = 0.093																
01 = 0.004	28 = 0.109																
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08 = 0.031	48 = 0.188																
12 = 0.047	56 = 0.220																
16 = 0.062	64 = 0.251																
20 = 0.078	X = others																
	Round insert:MO refers to metric dia. size																
<p>1 </p> <p>2 </p>	<p>2 Clearance angle of wiper edge</p> <p>(n)</p> <p>A = 3°</p> <p>B = 5°</p> <p>C = 7°</p> <p>D = 15°</p> <p>E = 20°</p> <p>F = 25°</p> <p>G = 30°</p> <p>N = 0°</p> <p>P = 11°</p> <p>Z = Others</p>																
<p>1 Approach angle(Entering angle)</p> <p>(kr)</p> <p>A = 45°</p> <p>D = 60°</p> <p>E = 75°</p> <p>F = 85°</p> <p>P = 90°</p> <p>Z = Others</p>																	

E	R	-	MM4
8	9	-	10
6- Insert thickness			
			01=1/16in
			T1=5/64in
			02=3/32in
			T2=0.109in
			03=1/8in
			T3=5/32in
			04=3/16in
			05=7/32in
			06=1/4in
			07=5/16in
			09=3/8in

8- Edge Preparation		
F	E	T
Sharp cutting edge	Honed cutting edge	Negative land
K	S	P
Double negative land	Negative land +honed	Double negative land +honed

9-Hand of Tool		
R	L	N
Right hand	Left hand	Neutral

10-Geometry Refers to Geometry Introduction

Marked: if it has corner radius, the information needs to put between thickness and wipers.

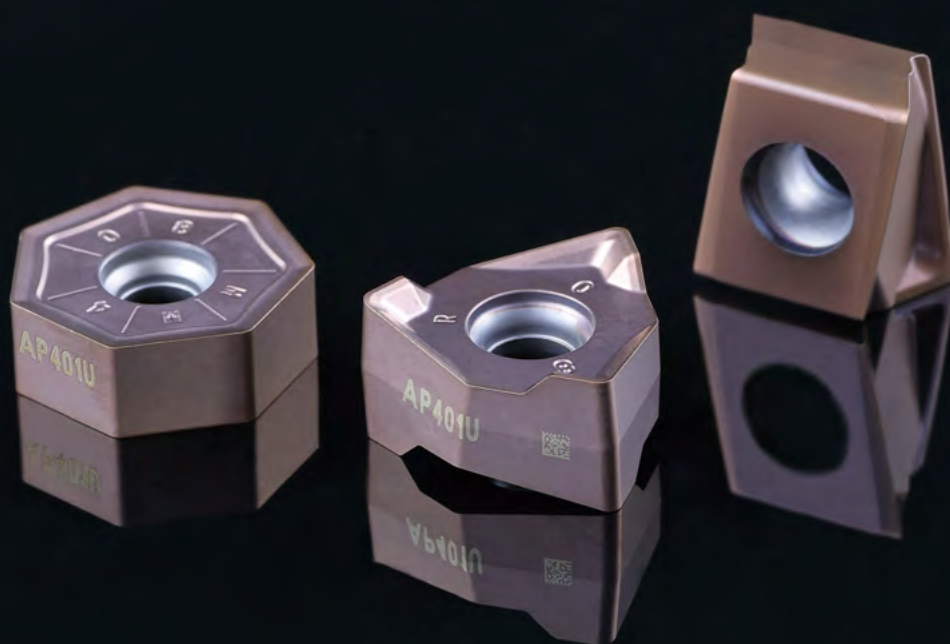
Example: APET 160408PDFR-FM2

Milling cutters

ACHTTECK

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THE EXPERTS OF DIFFICULT MACHINING



Milling Inserts

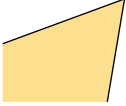






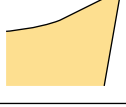

Geometry Application Guide

Materials				Milling geometry application table						
				FM2	MM3	MM4	MR2	MR6	RR2	HR2
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	Suitable for machining aluminium alloy	Light cutting	General purpose	Medium machining	Roughing	Heavy roughing	Roughing
P	Unalloyed steel	<600	<180	-	●	●	●	●	-	-
		<950	<280	-	●	●	●	●	-	-
	Alloyed steel	700-950	200-280	-	●	●	●	●	-	-
		950-1200	280-355	-	●	●	●	●	-	-
		1200-1400	355-415	-	●	●	●	●	-	-
M	Duplex stainless steel	778	230	-	●	●	●	-	-	-
	Austenitic stainless steel	675	200	-	●	●	●	-	-	-
	Precipitation-hardening stainless steel	1013	300	-	●	●	●	-	-	-
K	Grey cast iron	700	220	-	-	●	●	●	●	●
	Nodular cast iron	880	260	-	-	●	●	●	●	●
	Malleable cast iron	800	250	-	-	●	●	●	●	●
N	Aluminum	260	75	●	-	-	-	-	-	-
	Aluminum alloy	447	130	●	-	-	-	-	-	-
S	Fe-based alloy	943	280	-	●	●	●	-	-	-
	Co-based alloy	1076	320	-	●	●	●	-	-	-
	Ni-based alloy	1177	350	-	●	●	●	-	-	-
	Ti-alloy	1262	370	-	●	●	●	-	-	-
H	Hardened steel	-	50-60HRC	-	-	●	●	-	-	-
	Chilled cast iron	-	55HRC	-	-	●	●	-	-	-

- 1st choice
- ◐ 2nd choice
- Inapplicable

Milling cutters

Milling Geometry Introduction

Insert geometry	Edge shape	Application
FM2		<ul style="list-style-type: none"> ▪ Low cutting force, for weak machining condition ▪ Sharp geometry ▪ For aluminium material machining
MM3		<ul style="list-style-type: none"> ▪ Low cutting force, for weak machining condition ▪ Sharp geometry ▪ For steel, stainless-steel and heat resistant alloy machining.
MM4		<ul style="list-style-type: none"> ▪ For medium machining condition ▪ Universal geometry ▪ For machining most materials
MR2		<ul style="list-style-type: none"> ▪ For medium or better machining condition ▪ Universal geometry ▪ For machining most materials
MR6		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Roughing geometry ▪ For machining most materials
HR2		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Roughing geometry ▪ Mainly for cast iron machining
RR2		<ul style="list-style-type: none"> ▪ For stable machining condition ▪ Heavy roughing geometry ▪ Mainly for cast iron and steel machining
IT		<ul style="list-style-type: none"> ▪ Sharp geometry, for specified product
DT		<ul style="list-style-type: none"> ▪ Universal geometry, for specified product

Grade Application Guide

Milling grade ISO group															
Material Group	Materials	ISO	coated											Uncoated	ISO
			PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD	CVD	CVD		
P	unalloy steels / Alloyed steels	P01												P01	
		P05												P05	
		P10												P10	
		P15												P15	
		P20	AP251U											P20	
		P25										AC301P		P25	
		P30		AP351U	AP351M									P30	
		P35												P35	
		P40												P40	
		P45												P45	
P50												P50			
M	Stainless steels	M01											M01		
		M05											M05		
		M10											M10		
		M15	AP251U										M15		
		M20											M20		
		M25											M25		
		M30	AP251U			AP351M							M30		
		M35					AP403S	AP403M					M35		
		M40											M40		
		M45											M45		
M50											M50				
K	Cast iron	K01											K01		
		K05											K05		
		K10											K10		
		K15											K15		
		K20	AP251K	AP151H								AC301K	K20		
		K25											K25		
		K30											K30		
		K35											K35		
		K40											K40		
		K45											K45		
K50											K50				
N	Aluminum/ Aluminum alloys	N01											N01		
		N05											N05		
		N10											AW100K	N10	
		N15												N15	
		N20												N20	
		N25												N25	
		N30												N30	
S	Heat resistant alloys	S01											S01		
		S05											S05		
		S10											S10		
		S15											S15		
		S20											S20		
		S25											S25		
		S30			AP351M									S30	
		S35					AP403S	AP403M						S35	
		S40												S40	
		S45												S45	
S50												S50			
H	Hardened steels/ Chilled cast iron	H01											H01		
		H05											H05		
		H10	AP151H											H10	
		H15												H15	
		H20												H20	
		H25												H25	
		H30												H30	

Milling cutters

Grade Application Guide

Materials				Milling grade application										
				PVD coated						CVD coated		PVD coated		Uncoated
ISO	Material classification	Tensile strength (N/mm ²)	Hardness (HB)	AP251U	AP351U	AP351M	AP401U	AP403S	AP403M	AC301P	AC301K	AP251K	AP151H	AW100K
P	Unalloyed steel	<600	<180	●	●	●	●		●	●	●	-	-	-
		<950	<280	●	●	●	●		●	●	●	-	-	-
	Alloyed steel	700-950	200-280	●	●	●	●		●	●	●	-	-	-
		950-1200	280-355	●	●	●	●		●	●	●	-	-	-
		1200-1400	355-415	●	●	●	●		●	●	●	-	-	-
M	Duplex stainless steel	778	230	○	●	●	●	●	●	○	-	-	-	-
	Austenitic stainless steel	675	200	○	●	●	●	●	●	○	-	-	-	-
	Precipitation-hardening stainless steel	1013	300	○	●	●	●	●	●	○	-	-	-	-
K	Grey cast iron	700	220	-	-	-	-	-	-	-	●	●	●	-
	Nodular cast iron	880	260	-	-	-	-	-	-	-	●	●	●	-
	Malleable cast iron	800	250	-	-	-	-	-	-	-	●	●	●	-
N	Aluminum	260	75	-	-		-			-	-	-	-	●
	Aluminum alloy	447	130	-	-		-			-	-	-	-	●
S	Fe-based alloy	943	280	-	○	●	○	●	●	-	-	-	-	-
	Co-based alloy	1076	320	-	○	●	○	●	●	-	-	-	-	-
	Ni-based alloy	1177	350	-	○	●	○	●	●	-	-	-	-	-
	Ti-alloy	1262	370	-	○	●	○	●	●	-	-	-	-	○
H	Hardened steel	-	50-60HRC	-	-		-			-	-	-	●	-
	Chilled cast iron	-	55HRC	-	-		-			-	-	-	●	-

- 1st choice
- 2nd choice
- Inapplicable

Milling Grade Description

Grade for Normal Milling

P Steel, alloyed steel, unalloyed steel

Basic grade

AP251U P25(P15-P35)

PVD-coated grade, suitable for most applications. First choice for steel machining. It is recommended to be used in rough to finish machining of steel under stable working conditions, good for dry and wet machining with small cutting width, complex tool path and sticky materials.

AC301P P35(P25-P40)

CVD coated grade is suitable for big cutting depth, medium to high speed milling of steel under bad machining conditions.

Supplemental grade

AP351M P35(P25-P45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high toughness is required.

AP351U P35(P30-P45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high-toughness is required.

M Stainless steel, austenite stainless steel, martensite stainless steel

Basic grade

AP351M M35(M25-M45)

PVD coated grade is used for milling stainless steel and steel at medium and low speed under bad machining conditions.

AP403M M35(M35-M50)

Ultra-thick PVD coated grade is the first choice for stainless steel milling. It is suitable for rough milling of stainless steel under bad machining conditions.

Supplemental grade

AP251U M25(M15-M35)

PVD coated grade is used in rough and finish milling of stainless steel under very stable machining conditions.

AP403S M15(M35-M50)

PVD coated grade, the substrate has both toughness and hot hardness characteristics, and is the first choice for titanium alloy machining, as well as the machining of heat resistant alloy under weak rigidity. It is applicable to the milling at low cutting speed and can get longer tool life.

AP351U M35(M30-M45)

PVD coated grade, medium hardness substrate, which is a supplement for AP251U in steel milling when high-toughness is requested. On the way to phase out.

K Cast iron, grey cast iron, nodular cast iron

Basic grade

AC301K K25(K10-K35)

CVD coated grade, suitable for semi-finish milling and rough milling of grey cast iron at medium and high cutting speed, Recommended for dry cutting conditions, can achieve longer tool life.

AP251K K25(K15-K40)

PVD coated grade is suitable for semi-finish and rough milling of grey cast iron and nodular cast iron at medium and low cutting speed, and has good tool life under dry and wet conditions.

Supplemental grade

AP151H K15(K10-K20)

PVD coated grade is suitable for finish milling of grey cast iron and nodular cast iron, which can get constant surface quality and longer tool life.

N Non-ferrous metals

Basic grade

AW100K N15 (N10-N20)

Uncoated grade, combined with sharp cutting edge, used in aluminum alloy milling.

S Heat resistant alloy

Basic grade

AP403S S15(S35-S50)

PVD coated grade, the substrate has both toughness and red hardness characteristics, and is the first choice for titanium alloy machining, as well as the machining of heat resistant alloy under weak rigidity. It is applicable to the milling at low cutting speed and can get longer tool life.

Supplemental grade

AP351M S35(S25-S45)

PVD coated grade is suitable for semi-finishing to light rough machining of heat resistant alloy and titanium alloys.

AP403M S35(S35-S50)

The super-thick PVD coated grade is suitable for low-speed milling of heat resistant alloy and titanium alloys when high toughness is requested, especially in case of large cutting width.

H Hard material, hardened steel

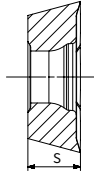
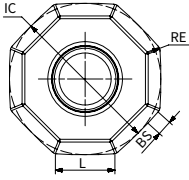
Basic grade

AP151H H15(H10-H20)

PVD coated grade, suitable for milling hardened steel, can be used in rough and finish milling, meeting the needs of most occasions.

OD..06

Positive octagonal milling inserts



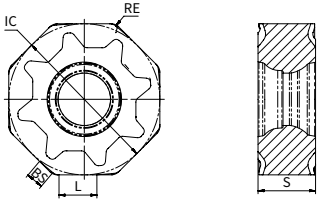
Inserts	Product code	Dimension (in)					Machining conditions							
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition							
							P			M	K		N	
							AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K	
	ODET 0605APFN-FM2	0.236	0.630	0.219	0.031	0.063								●
	ODMT 060508EN-MM3	0.236	0.630	0.219	0.031	-	●	●	●		●	●		
	ODMT 060512EN-MM3	0.236	0.630	0.219	0.047	-	●							
	ODHT 0605APEN-MM3	0.236	0.630	0.219	0.031	0.063	●	●			●	●		
	ODEW 0605APSR-HR2	0.236	0.630	0.219	-	0.063					●	●		
	ODMW 060512EN-HR2	0.236	0.630	0.219	0.047	-					●	●		



●: Stock available

Milling cutters

ON..05

Negative octagonal milling inserts

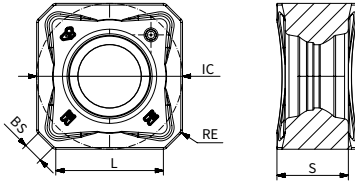


Inserts	Product code	Machining conditions					● Good condition ● General condition ✖ Bad condition						
		Dimension (in)					P			M	K		N
		L	IC	S	RE	BS	AP25TU	AP35TU	AC301P	AP403M	AC301K	AP251K	AW100K
	ONHU 050408-MM3	0.157	0.500	0.187	0.031	-	●						
	ONMU 050408-MM4	0.157	0.500	0.187	0.031	-	●	●			●	●	
	ONHU 0504ZNR-MM3	0.157	0.500	0.187	0.031	0.055	●						

●: Stock available

SN..12

Negative short wiper milling inserts(applicable to AFM45-SN12 milling cutter)



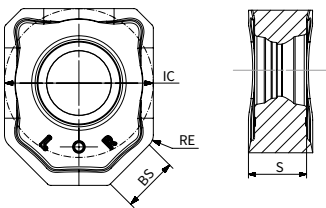
Inserts	Product code	Dimension (in)					Machining conditions								
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition								
							P			M	K		N		
							AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K		
	SNHX 1206ANN-FM2	0.366	0.500	0.246	0.020	0.071									●
	SNGX 1206ANN-MM3	0.370	0.500	0.246	0.016	0.071	●	●	●		●	●			
	SNGX 1206ANN-MM4	0.370	0.500	0.246	0.016	0.071	●	●	●	●	●	●			
	SNGX 1206ANN-MR6	0.370	0.500	0.246	0.016	0.071	●	●	●		●	●			
	SNGX 1206ANN-RR2	0.366	0.500	0.246	0.020	0.071	●	●	●		●	●			
	SNMX 1206ANN-MM3	0.370	0.500	0.246	0.016	0.071	●	●	●		●	●			
	SNMX 1206ANN-MM4	0.370	0.500	0.246	0.016	0.071	●	●	●	●	●	●			
	SNMX 1206ANN-MR6	0.370	0.500	0.246	0.016	0.071	●	●	●		●	●			

●: Stock available

Milling cutters

SNHX12

Negative long wiper milling inserts(applicable to AFM45-SN12 milling cutter)

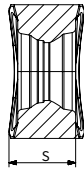
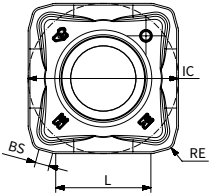


Inserts	Product code	Dimension (in)					Machining conditions								
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition								
							P			M	K		N		
							AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K		
	SNHX 1206ANN-W	-	0.500	0.246	0.047	0.263	●					●			

●: Stock available

SN..12

Negative short wiper milling inserts (applicable to AFM75-SN12 milling cutter)

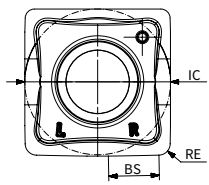


Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition						
							P			M	K		N
						AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K	
	SNGX 1206ENN-MM3	0.319	0.500	0.250	0.032	0.047	●	●	●		●	●	
	SNGX 1206ENN-MM4	0.319	0.500	0.250	0.032	0.047	●	●	●		●	●	
	SNGX 1206ENN-MR6	0.319	0.500	0.250	0.032	0.047	●	●	●		●	●	
	SNMX 1206ENN-MM4	0.319	0.500	0.250	0.032	0.047			●			●	

● : Stock available

SNHX12

Negative long wiper milling inserts (applicable to AFM75-SN12 milling cutter)

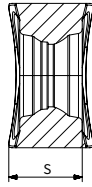
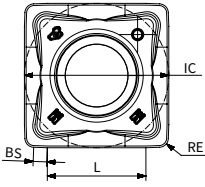


Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition						
							P			M	K		N
						AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K	
	SNHX 1206ENN-W	-	0.500	0.246	0.024	0.047	●				●		

● : Stock available

SN..12

Negative short wiper milling inserts (applicable to AFM88-SN12 milling cutter)

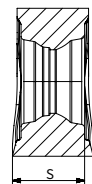
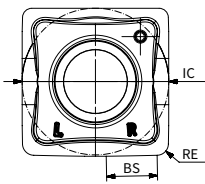


Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition						
							P			M	K		N
						AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K	
	SNHX 1206ZNN-FM2	0.343	0.500	0.254	0.031	0.047							●
	SNGX 1206ZNN-MM4	0.343	0.500	0.254	0.031	0.047	●	●	●	●	●	●	
	SNGX 1206ZNN-MR6	0.343	0.500	0.254	0.031	0.047	●	●	●		●	●	
	SNGX 1206ZNN-MM3	0.343	0.500	0.254	0.031	0.047	●	●	●		●	●	
	SNMX 1206ZNN-MM4	0.343	0.500	0.254	0.031	0.047	●			●		●	

●: Stock available

SNHX12

Negative long wiper milling inserts (applicable to AFM88-SN12 milling cutter)



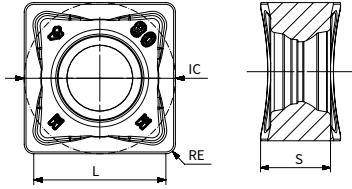
Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition						
							P			M	K		N
						AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K	
	SNHX 1206ZNN-W	-	0.500	0.246	0.039	0.173	●				●		

●: Stock available

Milling cutters

SN..12

Negative square milling inserts with corner radius

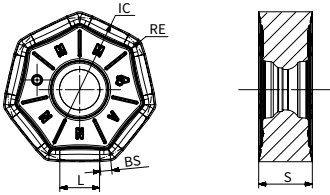


Inserts	Product code	Machining conditions					● Good condition ● General condition ✖ Bad condition						
		Dimension (in)					P		M	K		N	
		L	IC	S	RE	BS	AP25TU	AP35TU	AC301P	AP403M	AC301K	AP251K	AW100K
	SNGX 120608-MM4	0.437	0.500	0.252	0.031	-	●	●	●		●	●	
	SNGX 120612-MM4	0.406	0.500	0.252	0.047	-	●						
	SNMX 120608-MM4	0.437	0.500	0.252	0.031	-	●	●	●		●	●	
	SNMX 120612-MM3	0.406	0.500	0.252	0.047	-	●	●	●		●	●	
	SNMX 120612-MM4	0.406	0.500	0.252	0.047	-	●	●	●		●	●	
	SNMX 120612-MR6	0.406	0.500	0.252	0.047	-	●	●	●		●	●	
	SNMX 120612-RR2	0.406	0.500	0.252	0.047	-	●	●	●		●	●	
	SNMX 120620-MM4	0.343	0.500	0.252	0.079	-	●	●	●		●	●	
	SNMX 120620-RR2	0.343	0.500	0.252	0.079	-	●	●	●		●	●	
	SNMX 120612R-MM4	0.343	0.500	0.252	0.047	-	●	●	●	●	●	●	

●: Stock available

XN..07/09ANN

Negative heptagonal milling inserts with short wiper



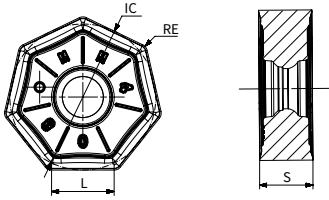
Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition			● General condition			
							● Bad condition	●	●	●	●	●	●
						P			M	K		N	
						AP25TU	AP35TU	AC301P	AP403M	AC301K	AP251K	AW100K	
	XNGU 0705ANN-MM3	0.276	0.571	0.197	0.031	0.043	●	●			●		
	XNGU 0705ANN-MM4	0.276	0.571	0.197	0.031	0.043	●				●		
	XNMU 0705ANN-MM4	0.276	0.571	0.197	0.031	0.043	●	●	●		●	●	
	XNMU 0705ANN-MR6	0.276	0.571	0.197	0.031	0.043	●	●			●	●	
	XNGU 0906ANN-MM3	0.362	0.748	0.231	0.031	0.055	●	●	●		●		
	XNGU 0906ANN-MM4	0.362	0.748	0.231	0.031	0.055	●	●	●		●		
	XNMU 0906ANN-MR6	0.362	0.748	0.231	0.031	0.055	●				●	●	


●: Stock available

Milling cutters

XN..07/09

Negative heptagonal milling inserts with corner radius

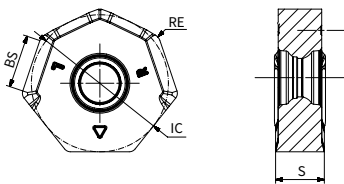



Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ✖ Bad condition			⚙ General condition			
							●	⚙	⚙	✖	●	●	●
							P			M	K		N
							AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
	XNMU 070508-MM4	0.276	0.571	0.197	0.031	-	●	●		●	●	●	
	XNMU 090612-MM4	0.362	0.748	0.231	0.047	-	●	●		●	●	●	

●: Stock available

XNGX 07/09ANN-W

Negative milling inserts with long wiper

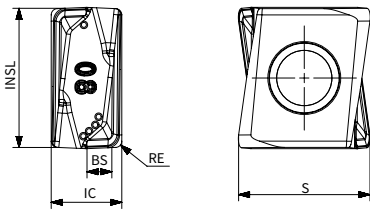


Inserts	Product code	Dimension (in)					Machining conditions						
		L	IC	S	RE	BS	● Good condition ✖ Bad condition			⚙ General condition			
							●	⚙	⚙	✖	●	●	●
							P			M	K		N
							AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AW100K
	XNGX 0705ANN-W	0.236	0.591	0.197	0.039	0.043	●				●		
	XNGX 0906ANN-W	0.295	0.750	0.231	0.039	0.055	●				●		

●: Stock available

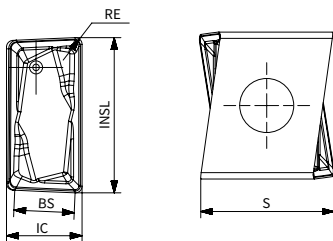
LNHU 0904..

Negative square shoulder milling inserts



Inserts	Product code	Dimension (in)					Machining conditions							
		INSL	IC	S	RE	BS	Good condition ●				General condition ◐			
							●	◐	◐	✖	●	◐	●	
							P	M	K	N				
							AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AP351K	AW100K
	LNHU 090404ER-FM2	0.354	0.177	0.335	0.016	0.073								●
	LNHU 090404ER-MM3	0.354	0.177	0.335	0.016	0.073		●		●				
	LNHU 090404ER-MR2	0.354	0.177	0.335	0.016	0.073	●	●		●	●	●		
	LNHU 090408ER-MR2	0.354	0.177	0.331	0.031	0.038	●	●	●	●	●	●		
	LNHU 090412ER-MR2	0.354	0.177	0.327	0.047	0.039	●			●	●			
	LNHU 090416ER-MR2	0.354	0.177	0.324	0.063	0.025	●			●	●			
	LNHU 090420ER-MR2	0.354	0.177	0.320	0.079	0.025	●			●	●			

● : Stock available



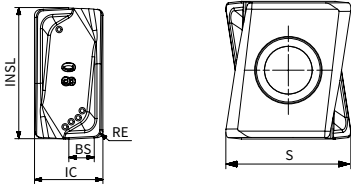
Inserts	Product code	Dimension (in)					Machining conditions							
		INSL	IC	S	RE	BS	Good condition ●				General condition ◐			
							●	◐	◐	✖	●	◐	●	
							P	M	K	N				
							AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AP351K	AW100K
	LNHU 0904PDER-W	0.364	0.177	0.330	0.015	0.141	●				●			●

● : Stock available

Milling cutters

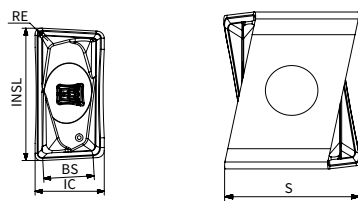
LNHU 1306..

Negative square shoulder milling inserts



Inserts	Product code	Dimension (in)					Machining conditions										
		INSL	IC	S	RE	BS	● Good condition ⬢ General condition ✖ Bad condition										
							P	M		K		N					
AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AP351K	AW100K										
	LNHU 130608ER-FM2	0.513	0.268	0.334	0.031	0.106											●
	LNHU 130608ER-MM3	0.513	0.268	0.467	0.031	0.106		●		●							
	LNHU 130608ER-MR2	0.513	0.268	0.467	0.031	0.106	●	●	●	●	●	●					
	LNHU 130612ER-MR2	0.513	0.268	0.462	0.047	0.051	●	●	●	●	●	●					
	LNHU 130616ER-MR2	0.513	0.268	0.457	0.063	0.075	●	●	●	●		●					
	LNHU 130620ER-MR2	0.513	0.268	0.454	0.079	0.059		●	●	●	●						
	LNHU 130624ER-MR2	0.513	0.268	0.449	0.094	0.039		●	●	●	●						
	LNHU 130631ER-MR2	0.513	0.268	0.442	0.122	0.016		●	●	●	●						

●: Stock available

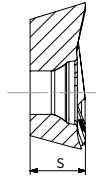
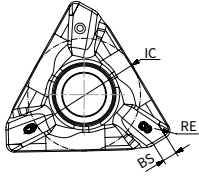


Inserts	Product code	Dimension (in)					Machining conditions										
		INSL	IC	S	RE	BS	● Good condition ⬢ General condition ✖ Bad condition										
							P	M		K		N					
AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AP351K	AW100K										
	LNHU 1306PDR-W	0.527	0.268	0.458	0.031	0.205	●						●				

●: Stock available

TDMT 1505..

Positive square shoulder triangle milling inserts



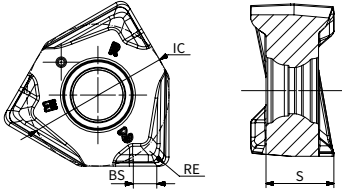
Inserts	Product code	Machining conditions										
		Dimension (in)				● Good condition ● General condition ✖ Bad condition						
		IC	S	RE	BS	P		M		K		N
				AP25TU	AP35TU	AP35TM	AP403M	AC301K	AP251K	AW100K		
	TDMT 150508R-MM4	0.449	0.220	0.031	0.059	●		●	●	●	●	
	TDMT 150512R-MM4	0.449	0.220	0.047	0.039	●		●	●	●	●	
	TDMT 150516R-MM4	0.449	0.220	0.063	0.037	●		●	●	●	●	
	TDMT 150520R-MM4	0.449	0.220	0.079	0.028	●			●		●	
	TDMT 150524R-MM4	0.449	0.220	0.094	0.023	●			●		●	
	TDMT 150531R-MM4	0.449	0.219	0.122	0.016	●			●		●	
	TDMT 150540R-MM4	0.449	0.219	0.157	0.016	●			●		●	
	TDMT 150508R-MM3	0.449	0.219	0.031	0.059	●			●		●	
	TDHT 150508R-MM4	0.449	0.220	0.031	0.059	●					●	


●: Stock available

Milling cutters

WNGU 0806..

Negative square shoulder milling inserts

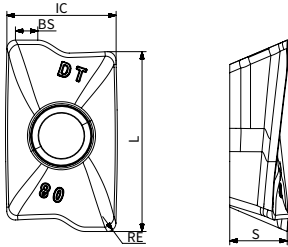


Inserts	Product code	Dimension (in)				Machining conditions				
		IC	S	RE	BS	● Good condition ⚙ General condition ✖ Bad condition				
						P	M		K	
					AP251U	AP401U	AP403M	AC301K	AP251K	
	WNMU 080608R-MR2	0.492	0.260	0.031	0.091	●	●	●	●	●
	WNMU 080608R-MM4	0.492	0.259	0.031	0.091	●	●	●	●	●
	WNMU 080608R-MM3	0.492	0.259	0.031	0.091	●	●	●	●	●
	WNMU 080612R-MR2	0.492	0.255	0.047	0.047	●	●		●	●
	WNMU 080612R-MM4	0.492	0.255	0.047	0.046	●	●	●		●
	WNMU 080616R-MR2	0.492	0.256	0.063	0.032	●		●		
	WNMU 080616R-MM4	0.492	0.256	0.063	0.031	●		●		

●: Stock available

APKT 1705..-DT..

Positive square shoulder milling inserts



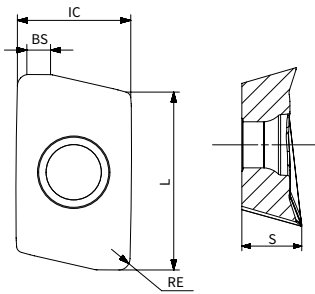
Inserts	Product code	Dimension (in)					Machining conditions							
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition							
							P		M		K		N	
						AP251U	AP351U	AP351M	AP403M	AC301K	AP251K	AW100K	AP403S	
	APKT 1705PER-DT	0.685	0.424	0.222	0.031	0.085	●	●		●		●	●	
	APKT 170516R-DT	0.685	0.423	0.222	0.063	0.068	●					●		
	APKT 170524R-DT	0.685	0.424	0.222	0.094	0.037	●		●	●		●		
	APKT 170530R-DT	0.685	0.424	0.222	0.118	0.058	●		●	●		●		
	APKT 170540R-DT	0.685	0.424	0.222	0.157	-	●		●	●				


● : Stock available

Milling cutters

AOMT 1204..-MM4..

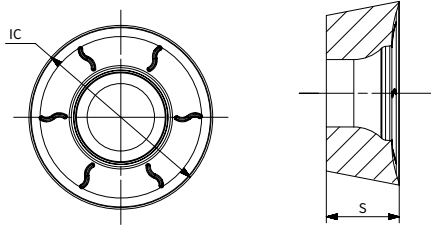
Positive square shoulder milling inserts





Inserts	Product code	Dimension (in)					Machining conditions					
		L	IC	S	RE	BS	● Good condition ● General condition ✖ Bad condition					
							P		M		K	S
							AP251U	AP351U	AP351M	AP403M	AP251K	AP403S
	AOMT 120408ER-MM4	0.504	0.321	0.200	0.031	0.061	●		●	●	●	●
	AOMT 120412ER-MM4	0.504	0.321	0.200	0.047	0.046			●	●		●
	AOMT 120416ER-MM4	0.504	0.321	0.200	0.063	0.047			●	●		●
	AOMT 120420ER-MM4	0.504	0.321	0.200	0.079	0.039	●		●	●		●
	AOMT 120424ER-MM4	0.504	0.321	0.200	0.094	0.035	●		●	●		●
	AOMT 120431ER-MM4	0.504	0.321	0.200	0.122	0.024			●	●		●
	AOMT 120440ER-MM4	0.504	0.321	0.200	0.157	0.031			●	●		●

●: Stock available

RO..T
Profile milling inserts



Inserts	Product code	Machining conditions		● Good condition ● General condition ✖ Bad condition							
				●	●	●	✖	●	●	✖	
		Dimension (in)		P			M	K		S	
IC	S	AP251U	AP351U	AC301P	AP403M	AC301K	AP251K	AP403S			
	ROHT 10T3M8E-MM3	0.394	0.156				●		●		
	ROHT 1204M4E-MM3	0.472	0.187				●		●		
	ROHT 1204M6E-MM3	0.472	0.187				●		●		
	ROMT 10T3M4E-MR6	0.394	0.156				●		●		
	ROMT 1204M6E-MR6	0.472	0.187				●		●		

●: Stock available

Milling cutters

Cutting Parameter Recommendation Table

Materials																		
ISO	Material classification	Brinell hardness (HB)	Tensile strength Rm (lbs/in ²)	AP251U			AC301P			AP351U			AP351M					
				PVD	CVD	PVD	PVD	CVD	PVD	PVD	PVD	CVD	PVD	PVD				
				P15-P35			P25-40			P30-P45			P20-P40					
				M15-M35			-			M25-M35			M20-M40					
				-			-			S25-S35			-					
				-			-			-			S20-S40					
				-			-			-			-					
				1/10	1/5	1/1	1/10	1/5	1/1	1/10	1/5	1/1	1/10	1/5	1/1			
P	Unalloyed steel	C ≤ 0.25%	Annealed	125	62000	1050	920	790	1250	980	850	920	790	660				
		0.25 < C ≤ 0.55%	Annealed	190	92700	950	790	660	1150	820	720	820	690	560				
		0.25 < C ≤ 0.55%	Heat-treated	210	103000	850	690	560	1020	720	620	750	590	460				
		C > 0.55%	Annealed	190	92700	950	790	660	1150	820	720	820	690	560				
		C > 0.55%	Heat-treated	300	147000	690	560	430	820	560	490	520	430	330				
	Low-alloyed steel	Free cutting steel (short-chip)	Annealed	220	108000	820	660	520	980	690	590	720	560	430				
			Annealed	175	85700	950	820	660	1120	980	820	890	750	590				
			Heat-treated	285	146900	820	690	520	950	820	660	750	620	460				
			Heat-treated	380	186000	750	620	460	820	690	520	690	560	390				
	High-alloyed steel and high-alloyed tool steel		Heat-treated	430	214200	620	490	360	690	560	430	560	430	300				
			Annealed	200	97900	720	620	520	790	690	590	660	560	460				
			Hardened and tempered	300	147000	560	460	360	620	520	430	490	430	300				
Stainless steel		Hardened and tempered	400	197000	490	390	300	520	430	330	430	330	230					
		Ferritic/martensitic, annealed	200	97900	620	520	430	660	560	460	520	460	360	590	490	390		
M	Stainless steel		Martensitic, heat-treated	330	162000	520	390	300	560	460	360	460	360	260	490	390	300	
			Austenitic, quench hardened	200	97900	590	490	390				560	460	360	560	490	390	
			Austenitic, precipitation hardened (PH)	300	147000	520	430	330				490	390	300	490	430	330	
K	Malleable cast iron		Austenitic/ferritic, duplex	230	113000	560	460	360				520	430	330	520	460	360	
			Ferritic	200	58000													
	Grey cast iron		Pearlitic	260	101000													
			Low tensile strength	180	29000													
	Nodular cast iron		High tensile strength/austenitic	245	50800													
			Ferritic	155	58000													
N	Wrought aluminium alloys		Pearlitic	265	101000													
			GGV(CGI)	230	58000													
	Cast aluminium alloys		Non-aging	30	-													
			Aged	100	49300													
			≤ 12% Si, non-aging	75	37700													
	Magnesium alloys		≤ 12% Si, aged	90	45000													
			> 12% Si, non-aging	130	65300													
	Copper and copper alloys		Unalloyed, electrolytic copper	100	49300													
			Brass, bronze, red brass	90	45000													
			Cu alloys, short-chipping	110	55100													
		High-tensile, Ampco alloy	300	146500														
S	Heat-resistant alloys	Fe-based	Annealed	200	98600							300	260	230	330	300	260	
			Hardened	280	136000								250	200	160	260	230	200
		Ni or Co based	Annealed	250	122000								260	180	150	230	200	160
			Hardened	350	171000								200	160	110	200	160	130
	Titanium alloys	Cast	320	156600								200	180	130	210	180	150	
		Pure titanium	200	98600								360	300	260	390	330	300	
		α and β alloys, hardened	375	182700								160	130	100	180	150	110	
	Tungsten alloys	β alloys	410	203000								160	130	100	180	150	110	
		300	146500								210	200	160	230	210	180		
Molybdenum alloys		300	146500								210	200	160	230	210	180		
H	Hardened steel		Hardened and tempered	50HRC														
			Hardened and tempered	55HRC														
			Hardened and tempered	60HRC														
	Chilled cast iron		Hardened and tempered	50HRC														

*The recommended cutting conditions always refer to general conditions. These cutting conditions should be adjusted according to the practical machine rigidity, tools, workpiece clamping and coolant. Average chip thickness (hm)=fz x sinkr.

Milling grade application range																																														
AP403M		AP401U		AP403S		AC301K		AP251K		AP151H		AW100K																																		
PVD		PVD		PVD		CVD		PVD		PVD		Uncoated																																		
P30-P45		P20-P40		-		-		-		-		-																																		
M30-M45		M20-M40		M30-M45		-		-		-		-																																		
-		-		-		K10-K35		K15-K40		K15-K40		-																																		
S30-S45		-		S30-S45		-		-		-		-																																		
-		-		-		-		-		-		N05-N15																																		
-		-		-		H15-H25		-		H15-H25		-																																		
Feed(mm/z)-according to the value of ae/Dc																																														
1/10		1/5		1/1		1/10		1/5		1/1		1/10		1/5		1/1		1/10		1/5		1/1																								
Cutting speed (ft/min)																																														
Blue																						560	460	360	520	460	360																			
																						460	360	260	460	360	260																			
Yellow																						520	460	360	520	460	360	620	520	460																
																						460	390	300	490	430	300	560	460	390																
																						490	430	330	490	430	330	520	430	360																
Red																															790	690	590	720	620	520	590	490	390							
																															720	620	520	660	560	460	520	430	330							
																															920	820	720	850	750	660	690	590	490							
																															790	690	590	690	620	520	590	490	390							
																															850	750	660	790	690	590	620	520	430							
																															620	520	430	560	460	360	490	390	300							
																															660	560	460	590	490	390	520	430	330							
Light Green																																								7220	7220	6560				
																																									5910	5910	5250			
																																									1970	1970	1640			
																																									1640	1640	1310			
																																									920	920	660			
																																									1310	1310	980			
																																									980	980	820			
Brown																																														
																						310	280	250				360	330	300																
																						260	210	180				300	260	230																
																						280	200	160				260	230	200																
																						210	180	110				250	210	160																
																						210	200	150				250	210	180																
																						390	310	280				390	330	300																
																						160	130	100				200	160	130																
																						160	130	100				200	160	130																
Light Blue																						230	200	160																210	180	150				
																																									200	160	130			
																																									200	160	130			

Milling cutters

ACHTTECK









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Solid End Mills








Solid Carbide End Mills

Series	Pictures	Category	Teeth	Helix angles	Application	Cutting edge tolerance (in)	Diameter (in)	Material	Information
M200-4ES		ECO line	Z=4	35°/38°		+0.00 -0.0028	0.125-1	Universal type	Used in carbon steel, tool steel, alloyed steel machining. 4 cutting edges can achieve better surface finishing. Differential helix and tooth distance eliminate vibration. The workpiece hardness is up to HRC45
M200-4RS		ECO line	Z=4	35°/38°		+0.00 -0.0028	0.125-1	Universal type	Used in carbon steel, tool steel, alloyed steel machining. The round corner can prevent edge breakage during high speed cutting. Differential helix and tooth distance eliminate vibration. With 4 cutting edge design. The workpiece hardness is up to HRC45
M200-2BS		ECO line	Z=2	30°		+0.00 -0.0028	0.125-1	Universal type	Used in carbon steel, tool steel, alloyed steel machining. For profile milling, good toughness. The workpiece hardness is up to HRC45
M245-2ES		ECO line	Z=2	45°		+0.00 -0.0028	0.125-1	Aluminium alloy	Design for vibration resistance. With special edge treatment. It can achieve better surface finish.

Icons Description

Icons	Description
	Slot milling and square shoulder milling
	Square shoulder rough milling
	Square shoulder finish milling
	High feed milling
	Dynamic milling cycloid milling
	Profile milling
	Chamfering and deburring

Icons	Description
	AlTiN Coating
	AlCrN Coating
	Uncoated
	30° Helix angle
	35° Helix angle
	35°/38° Helix angle
	45° Helix angle

Icons	Description
	Cylindrical shank
	Square
	Round corner
	Ball-nose
	Corner chamfer
	Chamfer
	Waved edge

Solid Carbide end Mill Denomination

M	1	00	-	2	E	S	-	060	002	N
1	2	3	-	4	5	6	-	7	8	9

1-Tool category M End mill	2-Generations 1	3-Series 00-09 Universal end mills HRC45 10-19 Universal end mills HRC55 20-29 High performance end mills 30-39 Dedicated for steel 40-49 Dedicated for aluminium alloy 50-59 Dedicated for stainless steel 60-69 Dedicated for difficult machining material 70-79 Dedicated for hardened material 80-99 others	4-Number of teeth 2,3,4,5,6.....	5-Tool type E Square B Ball nose R Round corner C Chamfer P With waved edges W Forming end mills T Taper end mill H High feed milling
--------------------------------------	---------------------------	---	--	--

6-Length
S Standard total length
L Long version
XL Super long version
XXL Extra long version
SN Short cutting edge
SP Long cutting edge

7-Tool diameter
0.125 in=1/8 in
0.188 in=3/16 in

8-Chamfer / nose radius size
R015=0.015 in

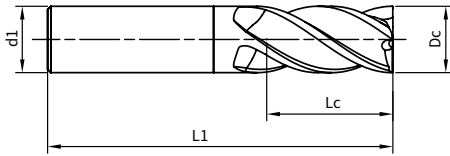
9-Structure type
N Straight necking
C Conical necking
P Special shank
Default: No necking

Solid Endmill

Solid Carbide End Mill M200

Eco line

Square shoulder mill with 4 cutting edges



Solid carbide end mill

Workpiece materials < HRC45

End Mill Tolerances			
Dc(in)	Tolerance(in)	d1	Tolerance
≤0.188	+0.00/-0.0008	all	h6
0.25-0.313	+0.00/-0.0011		
0.375-0.438	+0.00/-0.0019		
0.500-1.000	+0.00/-0.0028		



P	M	K	N	S	H	O
●●	●	●●				

●● 1st choice ● 2nd choice

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M200-4ES-0.125	1/8	0.125	3.175	1/8	0.125	0.500	2.250	4	●
M200-4ES-0.188	3/16	0.188	4.763	3/16	0.188	0.500	2.000	4	●
M200-4ES-0.250	1/4	0.250	6.350	1/4	0.250	0.750	2.500	4	●
M200-4ES-0.313	5/16	0.313	7.938	5/16	0.313	0.813	2.500	4	●
M200-4ES-0.375	3/8	0.375	9.525	3/8	0.375	1.125	3.000	4	●
M200-4ES-0.438	7/16	0.438	11.113	7/16	0.438	1.000	2.500	4	●
M200-4ES-0.500	1/2	0.500	12.700	1/2	0.500	1.000	3.000	4	●
M200-4ES-0.750	3/4	0.750	19.050	3/4	0.750	1.500	4.000	4	●
M200-4ES-1.000	1	1.000	25.400	1	1.000	2.000	4.000	4	●

Long version

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M200-4EL-0.313	5/16	0.313	7.938	5/16	0.313	1.125	3.000	4	●
M200-4EL-0.375	3/8	0.375	9.525	3/8	0.375	1.500	3.500	4	●
M200-4EL-0.500	1/2	0.500	12.700	1/2	0.500	2.000	4.000	4	●
M200-4EL-0.625	5/8	0.625	15.875	5/8	0.625	1.250	3.500	4	●

Marked: ● Stocked ○ Limited-stock

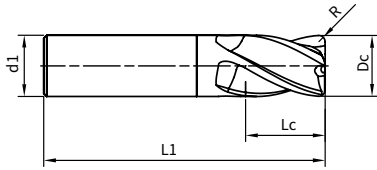
Solid Carbide End Mill M200

Eco line

Round corner mill with 4 cutting edges

Solid carbide end mill

Workpiece materials < HRC45



End Mill Tolerances			
Dc(in)	Tolerance(in)	d1	Tolerance
≤0.188	+0.00/-0.0008	all	h6
0.25-0.313	+0.00/-0.0011		
0.375-0.438	+0.00/-0.0019		
0.500-1.000	+0.00/-0.0028		



P	M	K	N	S	H	O
●●	●	●●				

●● 1st choice ● 2nd choice

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Re in Corner radius	Z	Stock
M200-4RS-0.125R015	1/8	0.125	3.175	1/8	0.125	0.500	2.250	0.015	4	●
M200-4RS-0.188R015	3/16	0.188	4.763	3/16	0.188	0.500	2.000	0.015	4	●
M200-4RS-0.250R015	1/4	0.250	6.350	1/4	0.250	0.750	2.500	0.015	4	●
M200-4RS-0.313R015	5/16	0.313	7.938	5/16	0.313	0.813	2.500	0.015	4	●
M200-4RS-0.375R015	3/8	0.375	9.525	3/8	0.375	1.125	3.000	0.015	4	●
M200-4RS-0.375R030	3/8	0.375	9.525	3/8	0.375	1.125	3.000	0.03	4	●
M200-4RS-0.438R015	7/16	0.438	11.113	7/16	0.438	1.000	2.500	0.015	4	●
M200-4RS-0.500R015	1/2	0.500	12.700	1/2	0.500	1.000	3.000	0.015	4	●
M200-4RS-0.500R030	1/2	0.500	12.700	1/2	0.500	1.000	3.000	0.03	4	●
M200-4RS-0.750R015	3/4	0.750	19.050	3/4	0.750	1.500	4.000	0.015	4	●
M200-4RS-0.750R030	3/4	0.750	19.050	3/4	0.750	1.500	4.000	0.03	4	●
M200-4RS-1.000R015	1	1.000	25.400	1	1.000	2.000	4.000	0.015	4	●
M200-4RS-1.000R030	1	1.000	25.400	1	1.000	2.000	4.000	0.03	4	●

Long version

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Re in Corner radius	Z	Stock
M200-4RL-0.313R015	5/16	0.313	7.938	5/16	0.313	1.125	3.000	0.015	4	●
M200-4RL-0.375R015	3/8	0.375	9.525	3/8	0.375	1.500	3.500	0.015	4	●
M200-4RL-0.375R030	3/8	0.375	9.525	3/8	0.375	1.500	3.500	0.03	4	●
M200-4RL-0.500R015	1/2	0.500	12.700	1/2	0.500	2.000	4.000	0.015	4	●
M200-4RL-0.500R030	1/2	0.500	12.700	1/2	0.500	2.000	4.000	0.03	4	●
M200-4RL-0.625R015	5/8	0.625	15.875	5/8	0.625	1.250	3.500	0.015	4	●
M200-4RL-0.625R030	5/8	0.625	15.875	5/8	0.625	1.250	3.500	0.03	4	●

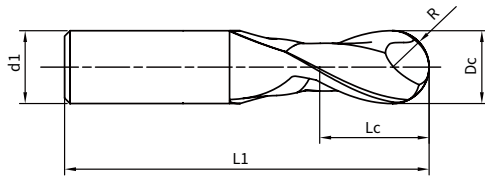
Solid Endmill

Marked: ● Stocked ○ Limited-stock

Solid Carbide End Mill M200

Eco line

Ball-nose mill with 2 cutting edges



Solid carbide end mill
Workpiece materials < HRC45

End Mill Tolerances			
Dc(in)	Tolerance(in)	d1	Tolerance
all	+0.00/-0.0008	all	h6

P	M	K	N	S	H	O
●●	●	●●				

●● 1st choice ● 2nd choice

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M200-2BS-0.125	1/8	0.125	3.175	1/8	0.125	0.500	2.250	2	●
M200-2BS-0.188	3/16	0.188	4.763	3/16	0.188	0.500	2.000	2	●
M200-2BS-0.250	1/4	0.250	6.350	1/4	0.250	0.750	2.500	2	●
M200-2BS-0.313	5/16	0.313	7.938	5/16	0.313	0.813	2.500	2	●
M200-2BS-0.375	3/8	0.375	9.525	3/8	0.375	1.125	3.000	2	●
M200-2BS-0.438	7/16	0.438	11.113	7/16	0.438	1.000	2.500	2	●
M200-2BS-0.500	1/2	0.500	12.700	1/2	0.500	1.000	3.000	2	●
M200-2BS-0.750	3/4	0.750	19.050	3/4	0.750	1.500	4.000	2	●
M200-2BS-1.000	1	1.000	25.400	1	1.000	2.000	4.000	2	●

Long version

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M200-2BL-0.313	5/16	0.313	7.938	5/16	0.313	1.125	3.000	2	●
M200-2BL-0.375	3/8	0.375	9.525	3/8	0.375	1.500	3.500	2	●
M200-2BL-0.500	1/2	0.500	12.700	1/2	0.500	2.000	4.000	2	●
M200-2BL-0.625	5/8	0.625	15.875	5/8	0.625	1.250	3.500	2	●

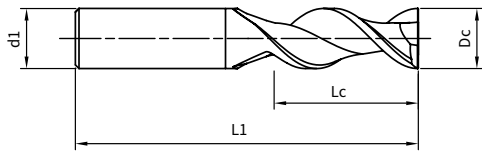
Marked: ● Stocked ○ Limited-stock

Solid Carbide End Mill M245

Solid carbide mill

Eco line

Square shoulder mill with 2 cutting edges dedicated for aluminum alloy



End Mill Tolerances			
Dc(in)	Tolerance(in)	d1	Tolerance
≤0.188	+0.00/-0.0008	all	h6
0.25-0.313	+0.00/-0.0011		
0.375-0.438	+0.00/-0.0019		
0.500-1.000	+0.00/-0.0028		



P	M	K	N	S	H	O
			●●			

●● 1st choice ● 2nd choice

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M245-2ES-0.125	1/8	0.125	3.175	1/8	0.125	0.500	2.250	2	●
M245-2ES-0.188	3/16	0.188	4.763	3/16	0.188	0.500	2.000	2	●
M245-2ES-0.250	1/4	0.250	6.350	1/4	0.250	0.750	2.500	2	●
M245-2ES-0.313	5/16	0.313	7.938	5/16	0.313	0.813	2.500	2	●
M245-2ES-0.375	3/8	0.375	9.525	3/8	0.375	1.125	3.000	2	●
M245-2ES-0.438	7/16	0.438	11.113	7/16	0.438	1.000	2.500	2	●
M245-2ES-0.500	1/2	0.500	12.700	1/2	0.500	1.000	3.000	2	●
M245-2ES-0.625	5/8	0.625	15.875	5/8	0.625	1.250	3.500	2	●
M245-2ES-0.750	3/4	0.750	19.050	3/4	0.750	1.500	4.000	2	●
M245-2ES-1.000	1	1.000	25.400	1	1.000	2.000	4.000	2	●

Long version

Product code	Dc in No	Dc in	Dc mm	d1 in No	d1 in	Lc in	L1 in	Z	Stock
M245-2EL-0.313	5/16	0.313	7.938	5/16	0.313	1.125	3.000	2	●
M245-2EL-0.375	3/8	0.375	9.525	3/8	0.375	1.500	3.500	2	●
M245-2EL-0.500	1/2	0.500	12.700	1/2	0.500	2.000	4.000	2	●

Solid Endmill

Marked: ● Stocked ○ Limited-stock

Solid Carbide End Mill Eco Line Cutting Parameters

Materials							
ISO	Material classification			Brinell hardness (HB)	Tensile strength Rm(lbs/in ²)	Cutting speed Vc(SFM)	
P	Unalloyed steel	C≤0.25%	Annealed	125	62000	150~260	
		0.25<C≤0.55%	Annealed	190	92700	150~260	
		0.25<C≤0.55%	Heat-treated	210	103000	150~260	
		C>0.55%	Annealed	190	92700	150~260	
		C>0.55%	Heat-treated	300	147000	130~200	
		Free cutting steel (short-chip)	Annealed	220	108000	150~210	
	Low-alloyed steel	Annealed			175	85700	150~250
		Heat-treated			300	146900	130~200
		Heat-treated			380	186000	130~200
		Heat-treated			430	214200	100~130
	High-alloyed steel and high-alloyed tool steel	Annealed			200	97900	150~250
		Hardened and tempered			300	147000	130~200
		Hardened and tempered			400	197000	130~200
	Stainless steel	Ferritic/martensitic, annealed			200	97900	110~130
Martensitic, heat-treated			330	162000	100~110		
M	Stainless steel	Austenitic, quench hardened		200	97900	100~110	
		Austenitic, precipitation hardened (PH)		300	147000	100	
		Austenitic/ferritic, duplex		230	113000	100~110	
K	Malleable cast iron	Ferritic		200	58000	180~200	
		Pearlitic		260	101000	180~200	
	Grey cast iron	Low tensile strength		180	29000	180~200	
		High tensile strength/austenitic		245	50800	180~200	
	Nodular cast iron	Ferritic		155	58000	180~200	
		Pearlitic		265	101000	150~180	
GGV(CGI)				230	58000	180~200	
N	Wrought aluminium alloys	Non-aging		30	-		
		Aged		100	49300		
	Cast aluminium alloys	≤ 12% Si, non-aging		75	37700		
		≤ 12% Si, aged		90	45000		
		> 12% Si, non-aging		130	65300		
	Magnesium alloys				70	36300	
	Copper and copper alloys	Unalloyed, electrolytic copper		100	49300		
		Brass, bronze, red brass		90	45000		
Cu alloys, short-chipping		110	55100				
High-tensile, Ampco alloy		300	146500				
S	Heat-resistant alloys	Fe-based	Annealed	200	98600		
			Hardened	280	136000		
		Ni or Co based	Annealed	250	122000		
			Hardened	350	171000		
			Cast	320	156600		
	Titanium alloys	Pure titanium		200	98600		
		α and β alloys, hardened		375	182700		
		β alloys		410	203000		
Tungsten alloys				300	146500		
Molybdenum alloys				300	146500		
H	Hardened steel	Hardened and tempered		50HRC	-		
		Hardened and tempered		55HRC	-		
		Hardened and tempered		60HRC	-		
	Chilled cast iron		Hardened and tempered		50HRC	-	

The cutting data are average recommended values. For special applications, adjustment is needed.

Solid Carbide End Mill Eco Line Cutting Parameters

Materials							
ISO	Material classification			Brinell hardness (HB)	Tensile strength Rm(lbs/in ²)	Cutting speed Vc(SFM)	
P	Unalloyed steel	C≤0.25%	Annealed	125	62000	260~330	
		0.25 < C ≤ 0.55%	Annealed	190	92700	250~300	
		0.25 < C ≤ 0.55%	Heat-treated	210	103000	250~300	
		C > 0.55%	Annealed	190	92700	250~300	
		C > 0.55%	Heat-treated	300	147000	200~230	
		Free cutting steel (short-chip)	Annealed	220	108000	250~300	
	Low-alloyed steel	Annealed		175	85700	250~300	
		Heat-treated		300	146900	200~230	
		Heat-treated		380	186000	200~230	
		Heat-treated		430	214200	180~200	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	97900	250~280	
		Hardened and tempered		300	147000	200~230	
		Hardened and tempered		400	197000	180~200	
	Stainless steel	Ferritic/martensitic, annealed		200	97900	160~230	
Martensitic, heat-treated		330	162000	130~160			
M	Stainless steel	Austenitic, quench hardened		200	97900	130~160	
		Austenitic, precipitation hardened (PH)		300	147000	130	
		Austenitic/ferritic, duplex		230	113000	130~160	
K	Malleable cast iron	Ferritic		200	58000	230~260	
		Pearlitic		260	101000	230~260	
	Grey cast iron	Low tensile strength		180	29000	230~260	
		High tensile strength/austenitic		245	50800	230~260	
	Nodular cast iron	Ferritic		155	58000	230~260	
		Pearlitic		265	101000	220~250	
		GGV(CGI)		230	58000	230~260	
N	Wrought aluminium alloys	Non-aging		30	-		
		Aged		100	49300		
	Cast aluminium alloys	≤ 12% Si, non-aging		75	37700		
		≤ 12% Si, aged		90	45000		
		> 12% Si, non-aging		130	65300		
	Magnesium alloys				70	36300	
	Copper and copper alloys	Unalloyed, electrolytic copper		100	49300		
		Brass, bronze, red brass		90	45000		
Cu alloys, short-chipping		110	55100				
High-tensile, Ampco alloy		300	146500				
S	Heat-resistant alloys	Fe-based	Annealed	200	98600		
			Hardened	280	136000		
		Ni or Co based	Annealed	250	122000		
			Hardened	350	171000		
			Cast	320	156600		
	Titanium alloys	Pure titanium		200	98600		
		α and β alloys, hardened		375	182700		
		β alloys		410	203000		
	Tungsten alloys				300	146500	
	Molybdenum alloys				300	146500	
H	Hardened steel	Hardened and tempered		50HRC	-		
		Hardened and tempered		55HRC	-		
		Hardened and tempered		60HRC	-		
	Chilled cast iron		Hardened and tempered		50HRC	-	

The cutting data are average recommended values. For special applications, adjustment is needed.

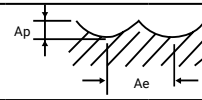
Solid Carbide End Mill Eco Line Cutting Parameters

Materials							
ISO	Material classification			Brinell hardness (HB)	Tensile strength Rm((lbs/in ²))	Cutting speed Vc(SFM)	
P	Unalloyed steel	C≤0.25%	Annealed	125	62000	300~330	
		0.25<C≤0.55%	Annealed	190	92700	300~330	
		0.25<C≤0.55%	Heat-treated	210	103000	300~330	
		C>0.55%	Annealed	190	92700	300~330	
		C>0.55%	Heat-treated	300	147000	260~300	
		Free cutting steel (short-chip)	Annealed	220	108000	300~330	
	Low-alloyed steel	Annealed		175	85700	300~330	
		Heat-treated		300	146900	260~300	
		Heat-treated		380	186000	260~300	
		Heat-treated		430	214200	260~300	
	High-alloyed steel and high-alloyed tool steel	Annealed		200	97900	300~330	
		Hardened and tempered		300	147000	260~300	
		Hardened and tempered		400	197000	260~300	
	Stainless steel	Ferritic/martensitic, annealed		200	97900	300~330	
Martensitic, heat-treated		330	162000	260~300			
M	Stainless steel	Austenitic, quench hardened		200	97900	300~330	
		Austenitic, precipitation hardened (PH)		300	147000	260~300	
		Austenitic/ferritic, duplex		230	113000	260~300	
K	Malleable cast iron	Ferritic		200	58000	300~330	
		Pearlitic		260	101000	300~330	
	Grey cast iron	Low tensile strength		180	29000	300~330	
		High tensile strength/austenitic		245	50800	300~330	
	Nodular cast iron	Ferritic		155	58000	300~330	
		Pearlitic		265	101000	300~330	
		GGV(CGI)		230	58000	300~330	
N	Wrought aluminium alloys	Non-aging		30	-		
		Aged		100	49300		
	Cast aluminium alloys	≤ 12% Si, non-aging		75	37700		
		≤ 12% Si, aged		90	45000		
		> 12% Si, non-aging		130	65300		
	Magnesium alloys				70	36300	
	Copper and copper alloys	Unalloyed, electrolytic copper		100	49300		
		Brass, bronze, red brass		90	45000		
Cu alloys, short-chipping		110	55100				
High-tensile, Ampco alloy		300	146500				
S	Heat-resistant alloys	Fe-based	Annealed	200	98600		
			Hardened	280	136000		
		Ni or Co based	Annealed	250	122000		
			Hardened	350	171000		
			Cast	320	156600		
	Titanium alloys	Pure titanium		200	98600		
		α and β alloys, hardened		375	182700		
		β alloys		410	203000		
Tungsten alloys				300	146500		
Molybdenum alloys				300	146500		
H	Hardened steel	Hardened and tempered		50HRC	-		
		Hardened and tempered		55HRC	-		
		Hardened and tempered		60HRC	-		
	Chilled cast iron		Hardened and tempered		50HRC	-	

The cutting data are average recommended values. For special applications, adjustment is needed.

M200-2BS

Profile (Finishing)



	fz [in/Tooth]								
	Mill diameter [in]								
	0.125	0.188	0.250	0.313	0.375	0.438	0.500	0.750	1.000
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003	0.004
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.002	0.002	0.002	0.003	0.003	0.003
	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002
	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002
	0.001	0.001	0.001	0.001	0.001	0.002	0.002	0.002	0.002
	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.006
	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.006
	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.006
	0.001	0.002	0.003	0.003	0.004	0.005	0.005	0.006	0.006
	0.001	0.001	0.002	0.002	0.003	0.004	0.004	0.005	0.006
	0.001	0.001	0.002	0.002	0.003	0.003	0.003	0.004	0.005
	0.001	0.001	0.002	0.002	0.003	0.004	0.004	0.005	0.006

Solid Endmill

Solid Carbide End Mill Eco Line Cutting Parameters

Materials								
ISO	Material classification			Brinell hardness (HB)	Tensile strength Rm(lbs/in ²)	Cutting speed Vc(SFM)		
P	Unalloyed steel	C≤0.25%	Annealed	125	62000			
		0.25 < C ≤ 0.55%	Annealed	190	92700			
		0.25 < C ≤ 0.55%	Heat-treated	210	103000			
		C > 0.55%	Annealed	190	92700			
		C > 0.55%	Heat-treated	300	147000			
		Free cutting steel (short-chip)	Annealed	220	108000			
	Low-alloyed steel	Annealed			175	85700		
		Heat-treated			300	146900		
		Heat-treated			380	186000		
		Heat-treated			430	214200		
	High-alloyed steel and high-alloyed tool steel	Annealed			200	97900		
		Hardened and tempered			300	147000		
		Hardened and tempered			400	197000		
	Stainless steel	Ferritic/martensitic, annealed			200	97900		
Martensitic, heat-treated			330	162000				
M	Stainless steel	Austenitic, quench hardened		200	97900			
		Austenitic, precipitation hardened (PH)		300	147000			
		Austenitic/ferritic, duplex		230	113000			
K	Malleable cast iron	Ferritic		200	58000			
		Pearlitic		260	101000			
	Grey cast iron	Low tensile strength		180	29000			
		High tensile strength/austenitic		245	50800			
	Nodular cast iron	Ferritic		155	58000			
		Pearlitic		265	101000			
GGV(CGI)				230	58000			
N	Wrought aluminium alloys	Non-aging		30	-	490~660		
		Aged		100	49300	390~490		
	Cast aluminium alloys	≤ 12% Si, non-aging		75	37700	490~660		
		≤ 12% Si, aged		90	45000	430~490		
		> 12% Si, non-aging		130	65300	390~430		
	Magnesium alloys			70	36300	490~660		
	Copper and copper alloys	Unalloyed, electrolytic copper		100	49300	390~490		
		Brass, bronze, red brass		90	45000	390~490		
Cu alloys, short-chipping		110	55100	390~490				
High-tensile, Ampco alloy		300	146500					
S	Heat-resistant alloys	Fe-based	Annealed	200	98600			
			Hardened	280	136000			
		Ni or Co based	Annealed	250	122000			
			Hardened	350	171000			
			Cast	320	156600			
	Titanium alloys	Pure titanium		200	98600			
		α and β alloys, hardened		375	182700			
		β alloys		410	203000			
Tungsten alloys			300	146500				
Molybdenum alloys			300	146500				
H	Hardened steel	Hardened and tempered		50HRC	-			
		Hardened and tempered		55HRC	-			
		Hardened and tempered		60HRC	-			
	Chilled cast iron	Hardened and tempered		50HRC	-			

The cutting data are average recommended values. For special applications, adjustment is needed.

Solid Carbide End Mill Eco Line Cutting Parameters

Materials							
ISO	Material classification			Brinell hardness (HB)	Tensile strength Rm(lbs/in ²)	Cutting speed Vc(SFM)	
P	Unalloyed steel	C≤0.25%	Annealed	125	62000		
		0.25 < C ≤ 0.55%	Annealed	190	92700		
		0.25 < C ≤ 0.55%	Heat-treated	210	103000		
		C > 0.55%	Annealed	190	92700		
		C > 0.55%	Heat-treated	300	147000		
		Free cutting steel (short-chip)	Annealed	220	108000		
	Low-alloyed steel	Annealed		175	85700		
		Heat-treated		300	146900		
		Heat-treated		380	186000		
		Heat-treated		430	214200		
	High-alloyed steel and high-alloyed tool steel	Annealed		200	97900		
		Hardened and tempered		300	147000		
		Hardened and tempered		400	197000		
	Stainless steel	Ferritic/martensitic, annealed		200	97900		
Martensitic, heat-treated		330	162000				
M	Stainless steel	Austenitic, quench hardened		200	97900		
		Austenitic, precipitation hardened (PH)		300	147000		
		Austenitic/ferritic, duplex		230	113000		
K	Malleable cast iron	Ferritic		200	58000		
		Pearlitic		260	101000		
	Grey cast iron	Low tensile strength		180	29000		
		High tensile strength/austenitic		245	50800		
	Nodular cast iron	Ferritic		155	58000		
		Pearlitic		265	101000		
		GGV(CGI)		230	58000		
N	Wrought aluminium alloys	Non-aging		30	-	490~660	
		Aged		100	49300	390~490	
	Cast aluminium alloys	≤ 12% Si, non-aging		75	37700	490~660	
		≤ 12% Si, aged		90	45000	430~490	
		> 12% Si, non-aging		130	65300	390~430	
	Magnesium alloys				70	36300	490~660
	Copper and copper alloys	Unalloyed, electrolytic copper		100	49300	390~490	
		Brass, bronze, red brass		90	45000	390~490	
Cu alloys, short-chipping		110	55100	390~490			
High-tensile, Ampco alloy		300	146500				
S	Heat-resistant alloys	Fe-based	Annealed	200	98600		
			Hardened	280	136000		
		Ni or Co based	Annealed	250	122000		
			Hardened	350	171000		
			Cast	320	156600		
	Titanium alloys	Pure titanium		200	98600		
		α and β alloys, hardened		375	182700		
		β alloys		410	203000		
	Tungsten alloys				300	146500	
	Molybdenum alloys				300	146500	
H	Hardened steel	Hardened and tempered		50HRC	-		
		Hardened and tempered		55HRC	-		
		Hardened and tempered		60HRC	-		
	Chilled cast iron		Hardened and tempered		50HRC	-	

The cutting data are average recommended values. For special applications, adjustment is needed.

