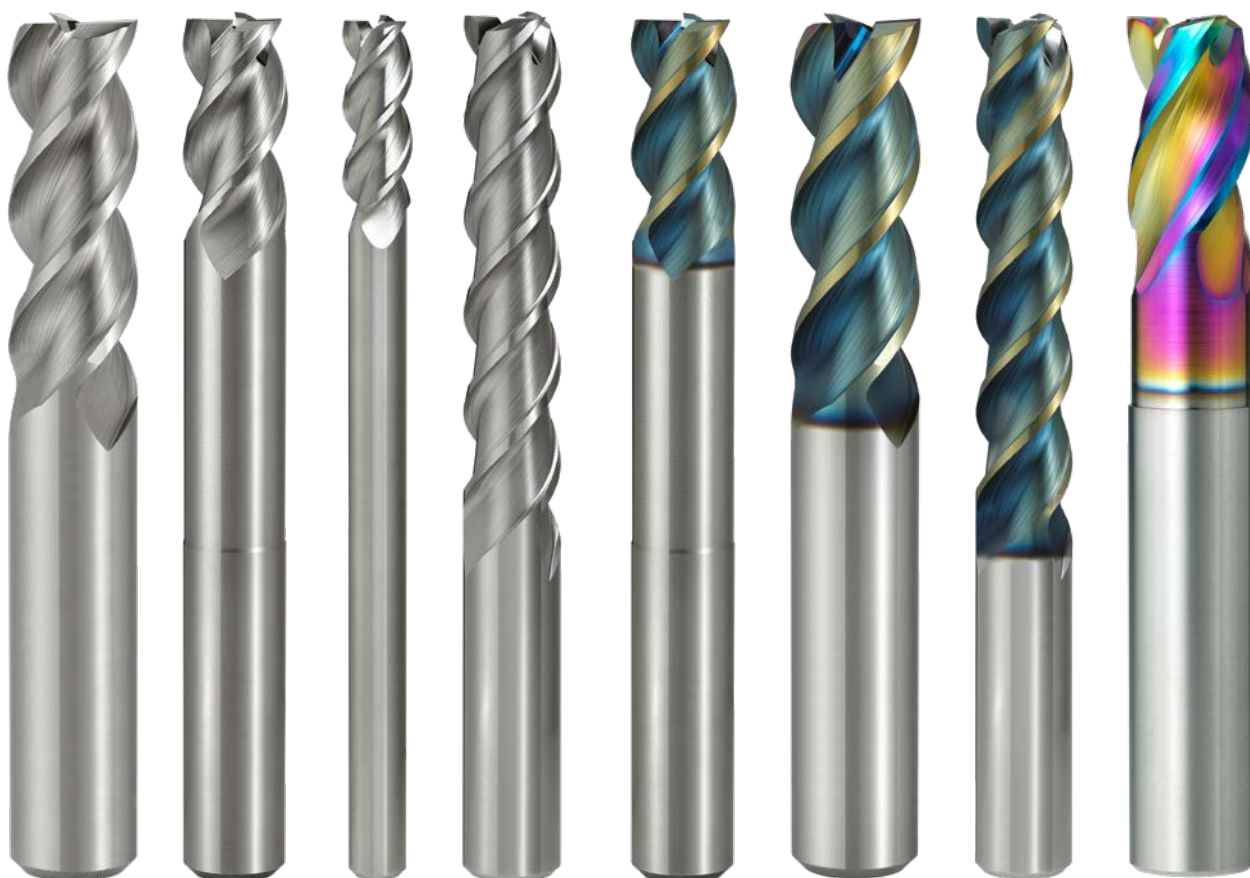


ALIMASTER

HIGH EFFICIENCY MACHINING OF ALUMINIUM ALLOYS



C - AL / DLC - AL

EXCELLENT SHARPNESS FOR STABLE MACHINING

Superior cutting edge quality and excellent chip evacuation suppresses vibrations and chatter to enable stable machining of non-ferrous materials.

Sharp cutting edge



High helix angle for excellent chip removal



Optimised cutting edges reduce chatter and vibration

Radial geometry for resistance to breakage

A WIDE VARIETY OF SIZES

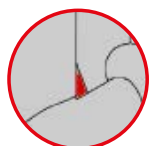
A versatile choice of end mills:

- 2 and 3 flutes
- Standard length and long flutes
- Slim shank type
- DLC coated and uncoated carbide grades



A3SA/DLC3SA

3 FLUTE END MILL WITH HELICAL INTERNAL THROUGH COOLANT HOLES, TOGETHER WITH OPTIMISED CUTTING EDGE GEOMETRY ENABLES HIGHLY EFFICIENT MACHINING



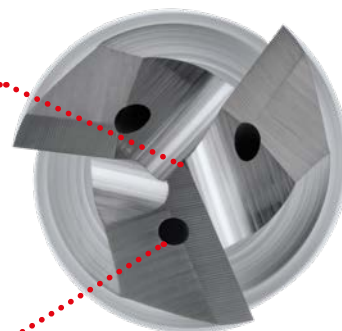
STRENGTHENED CENTRE CUTTING EDGES

Optimised centre cutting edges provides strength and reliability even during plunging.



HELICAL COOLANT HOLES

Chip discharge during plunging, ramping and grooving have been significantly improved, for stable, high efficiency cutting. Helical holes maintain a stable coolant supply even after re-grinding.



DLC

The uniquely developed DLC coating provides excellent welding resistance during high speed machining and when the coolant supply is reduced. Additionally, the low coefficient of friction reduces cutting resistance.

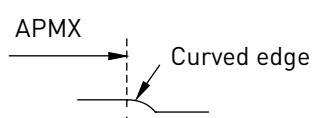
IDEAL FLUTE GEOMETRY

The cross sectional geometry of the flutes is perfect for efficient chip discharge and prevents the chip jamming commonly associated with high feed machining of aluminium.

IRREGULAR HELIX AND POLISHED FLUTES

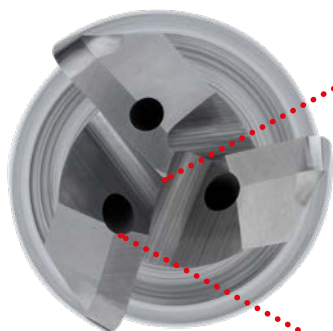
Irregular geometry suppresses chatter to enable excellent surface finishes and the polished flute surfaces prevent built up edge.

RADIUS FLUTE EXIT GEOMETRY



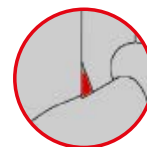
A3SARB / DLC3SARB

3 FLUTE CORNER RADIUS END MILL WITH HELICAL INTERNAL THROUGH COOLANT HOLES, TOGETHER WITH OPTIMISED CUTTING EDGE GEOMETRY FOR HIGH EFFICIENCY MACHINING



STRENGTHENED CENTRE CUTTING EDGES

Optimised centre cutting edges provides strength and reliability even during plunging.



HELICAL COOLANT HOLES

Chip discharge during plunging, ramping and grooving have been significantly improved, for stable, high efficiency cutting. Helical holes maintain a stable coolant supply even after re-grinding.



DLC

The uniquely developed DLC coating provides excellent welding resistance during high speed machining and when the coolant supply is reduced. Additionally, the low coefficient of friction reduces cutting resistance.

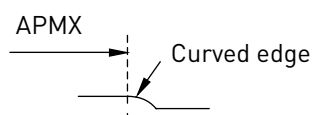
IRREGULAR HELIX AND POLISHED FLUTES

Irregular geometry suppresses chatter to enable excellent surface finishes and the polished flute surfaces prevent built up edge.

IDEAL FLUTE GEOMETRY

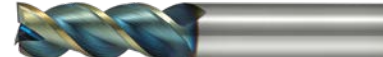
The cross sectional geometry of the flutes is perfect for efficient chip discharge and prevents the chip jamming commonly associated with high feed machining of aluminium.

RADIUS FLUTE EXIT GEOMETRY



ALIMASTER

CLASSIFICATION

Product code		Shape	DC	
BALL NOSE END MILL				
AM2MB	Ball nose end mill, 2 flute, medium cut length, relieved neck		1 – 20	7
SQUARE END MILL				
NEW C2MAL C3MAL	End mill, medium cut length, 2 and 3 flute, for aluminium alloys		1 – 12	9
NEW DLC2MAL DLC3MAL	End mill, medium cut length, 2 and 3 flute, for aluminium alloys		1 – 12	11
NEW C3SXAL	End mill, long cut length, 3 flute, for aluminium alloys		3 – 12	21
NEW DLC3SXAL	End mill, long cut length, 3 flute, for aluminium alloys		3 – 12	22
AM2MR	End mill, medium cut length, 2 flute, general purpose cutter		3 – 25	24
AM2SC	End mill, short cut length, 2 flute, relieved neck, centre cutting		3 – 20	26
AM3SS	End mill, short cut length, 3 flute, relieved neck, non centre cutting		12 – 25	28
NEW C2XLAL C3XLAL	End mill, 2 and 3 flute, long neck, for aluminium alloys		1 – 2.5	30
NEW DLC2XLAL DLC3XLAL	End mill, 2 and 3 flute, long neck, for aluminium alloys		1 – 2.5	32

ALIMASTER – CLASSIFICATION

SQUARE END MILL					
A3SA	End mill, short cut length, 3 flute, relieved neck, multiple internal helical through coolant holes		12 – 25	46	
DLC3SA	End mill, short cut length, 3 flute, relieved neck, multiple internal helical through coolant holes		12 – 25	48	
AM3MF	End mill, medium cut length, 3 flute, centre cutting		6 – 16	50	
AM4MF	End mill, medium cut length, 4 flute, finishing type, centre cutting		20 – 25	51	
CORNER RADIUS END MILL					
AM2SCRB	Corner radius end mill, short cut length, 2 flute, relieved neck		3 – 20	52	
AM3SSRB	Corner radius end mill, short cut length, 3 flute, relieved neck		12 – 25	55	
A3SARB	Corner radius end mill, short cut length, 3 flute, relieved neck, multiple internal helical through coolant holes		12 – 25	58	
DLC3SARB	Corner radius end mill, short cut length, 3 flute, relieved neck, multiple internal helical through coolant holes		12 – 25	60	
ROUGHING END MILL					
AMSR	Roughing end mill, short cut length, 3 flute, relieved neck		20 – 25	62	
AMMR	Roughing end mill, medium cut length, 3 flute, relieved neck		3 – 25	65	
AMSRRB	Roughing end mill, corner radius, 3 flute, short cut length, relieved neck		10 – 25	68	
CONICAL BALL NOSE END MILL					
C4LATB	Conical ball nose end mill, 4 cutting edges		6 – 8	71	
DLC4LATB	Conical ball nose end mill, 4 cutting edges		6 – 8	72	

AM2MB

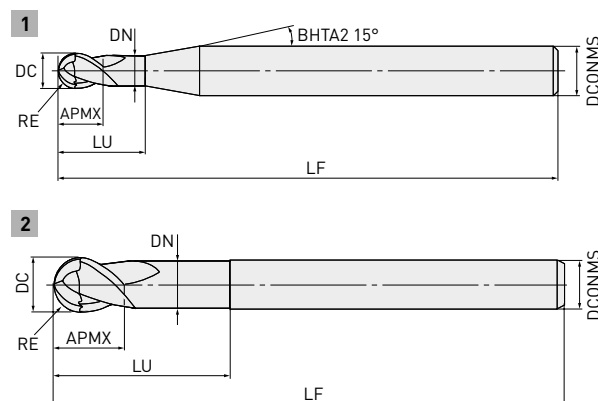


DC<2

DC≥3

BALL NOSE END MILL, 2 FLUTE, MEDIUM CUT LENGTH, RELIEVED NECK

N



RE≤6 RE≥6

± 0.01 ± 0.02



DC≤3 3<DC<6 6≤DC

0 0 0
-0.020 -0.028 -0.038

- High accuracy long reach ball nose cutter for aluminium.
- For machining to extreme tolerances with a superior surface finish.

Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP	Type
AM2MBR0050A040	●	1	0.5	2.5	—	—	40	4	2	1
AM2MBR0100A060	●	2	1	6	—	—	60	6	2	1
AM2MBR0150A060	●	3	1.5	6	9	2.7	60	6	2	1
AM2MBR0200A060	●	4	2	6	12	3.7	60	6	2	1
AM2MBR0250A060	●	5	2.5	8	15	4.7	60	6	2	1
AM2MBR0300A060	●	6	3	10	18	5.7	60	6	2	2
AM2MBR0400A075	●	8	4	12	24	7.4	75	8	2	2
AM2MBR0500A075	●	10	5	15	30	9.4	75	10	2	2
AM2MBR0600A075	●	12	6	18	36	11.4	75	12	2	2
AM2MBR0800A100	●	16	8	24	40	15.4	100	16	2	2
AM2MBR1000A100	●	20	10	30	45	19.0	100	20	2	2

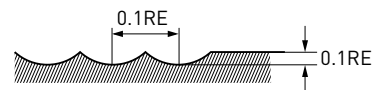
1/1



AM2MB

RECOMMENDED CUTTING CONDITIONS

Material		RE	n	Vf	
N	Aluminium alloy		1	20000	2000
			2	20000	4000
			3	20000	6000
			4	20000	7000
			5	20000	8000
			6	15000	7500
			8	12000	7200
			10	10000	7000
	Aluminium alloy		1	20000	1600
			2	20000	2800
			3	20000	3200
			4	17000	4000
			5	15000	3600
			6	12000	3600
			8	10000	3600
			10	8000	3200



1/1

1. When sinking, reduce the feed rate by 50 %.

C2MAL/C3MAL



C2MAL

C3MAL

END MILL, MEDIUM CUT LENGTH, 2 AND 3 FLUTE,
FOR ALUMINIUM ALLOYS

N



Slim shank type



DC

0

-0.02



DCONMS 4, 6

DCONMS 8, 10

DCONMS 12

0

-0.008

0

-0.009

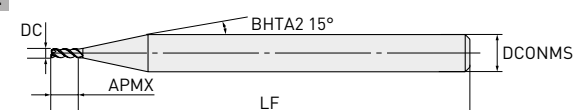
0

-0.011

1



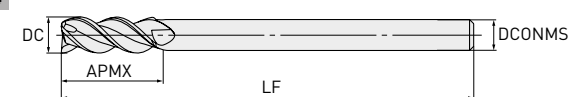
2



3



4



- Flute length is DC x 2.5.
- The cutting edge suppresses chatter and vibration resulting in superior component surface finishes.

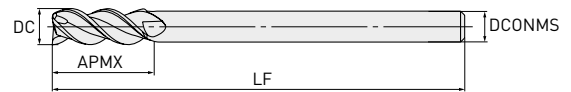
Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
C2MALD0100	●	1	2.5	45	4	2	1
C2MALD0150	●	1.5	3.7	45	4	2	1
C2MALD0200	●	2	5	45	4	2	1
C2MALD0250	●	2.5	6.3	45	4	2	1
C3MALD0100	●	1	2.5	45	4	3	2
C3MALD0150	●	1.5	3.7	45	4	3	2
C3MALD0200	●	2	5	45	4	3	2
C3MALD0250	●	2.5	6.3	45	4	3	2
C3MALD0300	●	3	7.5	50	6	3	2
C3MALD0400	●	4	10	50	6	3	2
C3MALD0500	●	5	12.5	55	6	3	2
C3MALD0600	●	6	15	55	6	3	3
C3MALD0800	●	8	20	70	8	3	3
C3MALD1000	●	10	25	75	10	3	3
C3MALD1200	●	12	30	80	12	3	3

1/2

C2MAL/C3MAL – END MILL, MEDIUM CUT LENGTH, 2 AND 3 FLUTE, FOR ALUMINIUM ALLOYS



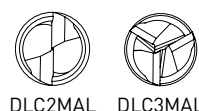
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SLIM SHANK TYPE

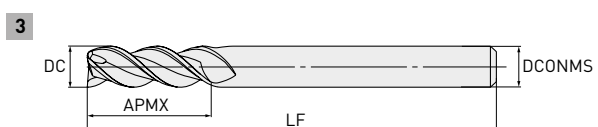
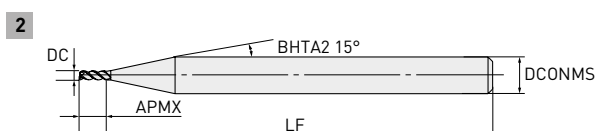
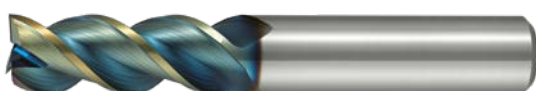
Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
C3MALD0700S06	●	7	17.5	80	6	3	4
C3MALD0800S06	●	8	20	110	6	3	4
C3MALD0900S08	●	9	22.5	110	8	3	4
C3MALD1000S08	●	10	25	130	8	3	4
C3MALD1100S10	●	11	28	130	10	3	4
C3MALD1200S10	●	12	30	150	10	3	4
							2/2

DLC2MAL / DLC3MAL



END MILL, MEDIUM CUT LENGTH, 2 AND 3 FLUTE,
FOR ALUMINIUM ALLOYS

N



DC
0
-0.02



DCONMS 4, 6	DCONMS 8, 10	DCONMS 12
0	0	0
-0.008	-0.009	-0.011

- The cutting edge suppresses chatter and vibration, resulting in superior component surface finishes.
- DLC coating provides extreme resistance to welding.

Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
DLC2MALD0100	●	1	2.5	45	4	2	1
DLC2MALD0150	●	1.5	3.7	45	4	2	1
DLC2MALD0200	●	2	5	45	4	2	1
DLC2MALD0250	●	2.5	6.3	45	4	2	1
DLC3MALD0100	●	1	2.5	45	4	3	2
DLC3MALD0150	●	1.5	3.7	45	4	3	2
DLC3MALD0200	●	2	5	45	4	3	2
DLC3MALD0250	●	2.5	6.3	45	4	3	2
DLC3MALD0300	●	3	7.5	50	6	3	2
DLC3MALD0400	●	4	10	50	6	3	2
DLC3MALD0500	●	5	12.5	55	6	3	2
DLC3MALD0600	●	6	15	55	6	3	3
DLC3MALD0800	●	8	20	70	8	3	3
DLC3MALD1000	●	10	25	75	10	3	3
DLC3MALD1200	●	12	30	80	12	3	3

1/1

C2MAL / DLC2MAL

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

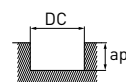
Material		DC	Vc	n	f	ap	ae
N	Aluminium alloy A1000 Series, A2000 – A7000 Series	1	60	20000	440	1.5	0.2
		1.5	90	20000	550	2.3	0.3
		2	130	20000	660	3	0.4
		2.5	160	20000	770	3.8	0.5
	Aluminium alloy castings	1	60	20000	440	1.5	0.2
		1.5	90	20000	550	2.3	0.3
		2	130	20000	660	3	0.4
		2.5	160	20000	770	3.8	0.5
	Copper, Copper alloy, Resin material	1	50	17000	320	2	0.2
		1.5	60	13300	400	3	0.3
		2	60	9900	320	4	0.4
		2.5	50	6600	440	5	0.5



1/1

SLOT MILLING

Material		DC	Vc	n	f	ap
N	Aluminium alloy A1000 Series, A2000 – A7000 Series	1	60	20000	330	1
		1.5	90	20000	440	1.5
		2	130	20000	440	2
		2.5	160	20000	550	2.5
	Aluminium alloy castings	1	60	20000	330	1
		1.5	90	20000	440	1.5
		2	130	20000	440	2
		2.5	160	20000	550	2.5
	Copper, Copper alloy, Resin material	1	50	17000	420	1
		1.5	60	13300	480	1.5
		2	60	9900	420	2
		2.5	50	6600	480	2.5



1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

Material	DC	Vc	n	f	ap	ae
Aluminium alloy A1000 Series	1	60	20000	1320	2.5	0.3
	1.5	90	20000	1650	3.8	0.5
	2	130	20000	1980	5	0.6
	2.5	160	20000	2100	6.3	0.8
	3	190	20000	2200	7.5	0.9
	4	250	20000	2420	10	1.2
	5	300	19000	2420	12.5	1.5
	6	300	16000	2420	15	1.8
	8	300	12000	2420	20	2.4
	9	300	10600	2420	22.5	2.7
	10	300	9500	2420	25	3
	12	300	8000	2640	30	3.6
Aluminium alloy A2000 – A7000 Series	1	60	20000	1320	2.5	0.3
	1.5	90	20000	1650	3.8	0.5
	2	130	20000	1980	5	0.6
	2.5	160	20000	2100	6.3	0.8
	3	190	20000	2200	7.5	0.9
	4	250	20000	2420	10	1.2
	5	310	20000	2970	12.5	1.5
	6	330	17500	3300	15	1.8
	8	330	13000	3300	20	2.4
	9	330	11700	3450	22.5	2.7
	10	330	10500	3580	25	3
	12	330	9000	3580	30	3.6



1/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

SIDE MILLING

Material	DC	Vc	n	f	ap	ae
Aluminium alloy castings	1	60	20000	1320	2.5	0.3
	1.5	90	20000	1650	3.8	0.5
	2	130	20000	1980	5	0.6
	2.5	160	20000	2100	6.3	0.8
	3	190	20000	2200	7.5	0.9
	4	250	20000	2420	10	1.2
	5	250	16000	2420	12.5	1.5
	6	250	13500	2420	15	1.8
	8	250	10000	2530	20	2.4
	9	250	8900	2640	22.5	2.7
	10	250	8000	2750	25	3
	12	250	6500	2860	30	3.6
Copper, Copper alloy, Resin material	1	60	20000	960	2.5	0.3
	1.5	90	20000	1200	3.8	0.5
	2	120	19100	960	5	0.6
	2.5	120	15300	1200	6.3	0.8
	3	120	12800	960	7.5	0.9
	4	120	9600	1020	10	1.2
	5	120	7700	1080	12.5	1.5
	6	120	6400	1160	15	1.8
	8	120	4800	1300	20	2.4
	9	120	4250	1300	22.5	2.7
	10	120	3840	1420	25	3
	12	120	3200	1550	30	3.6



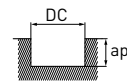
2/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

SLOT MILLING

Material	DC	Vc	n	f	ap
Aluminium alloy A1000 Series	1	60	20000	550	1
	1.5	90	20000	660	1.5
	2	130	20000	770	2
	2.5	160	20000	930	2.5
	3	190	20000	1100	3
	4	220	17500	1210	4
	5	220	14000	1210	5
	6	220	11500	1210	6
	8	220	9000	1320	8
	9	220	7800	1370	9
	10	220	7000	1430	10
	12	220	6000	1540	12
Aluminium alloy A2000 – A7000 Series	1	60	20000	550	1
	1.5	90	20000	660	1.5
	2	130	20000	770	2
	2.5	160	20000	930	2.5
	3	190	20000	1100	3
	4	240	19000	1210	4
	5	240	15500	1320	5
	6	240	12500	1430	6
	8	240	9500	1540	8
	9	240	8500	1600	9
	10	240	7500	1650	10
	12	240	6500	1760	12



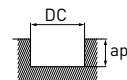
1/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

SLOT MILLING

Material	DC	Vc	n	f	ap
Aluminium alloy castings	1	60	20000	550	1
	1.5	90	20000	660	1.5
	2	130	20000	770	2
	2.5	160	20000	860	2.5
	3	160	17000	940	3
	4	160	13000	940	4
	5	160	10000	940	5
	6	160	8500	940	6
	8	160	6500	940	8
	9	160	5700	940	9
	10	160	5000	990	10
	12	160	4000	1100	12
Copper, Copper alloy, Resin material	1	60	20000	700	1
	1.5	90	20000	720	1.5
	2	120	19100	730	2
	2.5	120	15300	750	2.5
	3	120	12800	770	3
	4	120	9600	820	4
	5	120	7700	870	5
	6	120	6400	930	6
	8	120	4800	1040	8
	9	120	4200	1100	9
	10	120	3800	1140	10
	12	120	3200	1250	12



2/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

PLUNGING

Material	DC	Vc	n	f
N Aluminium alloy A1000 Series	1	60	20000	110
	1.5	90	20000	140
	2	130	20000	170
	2.5	160	20000	170
	3	190	20000	170
	4	220	17500	170
	5	220	14000	170
	6	220	11500	170
	8	220	9000	110
	9	220	7800	110
	10	220	7000	80
	12	220	6000	80
Aluminium alloy A2000 – A7000 Series	1	60	20000	110
	1.5	90	20000	140
	2	130	20000	170
	2.5	160	20000	170
	3	190	20000	170
	4	240	19000	220
	5	240	15500	220
	6	240	12500	220
	8	240	9500	220
	9	240	8500	220
	10	240	7500	170
	12	240	6500	170

1/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL / DLC3MAL

PLUNGING

Material	DC	Vc	n	f
Aluminium alloy castings	1	60	20000	90
	1.5	90	20000	120
	2	130	20000	140
	2.5	160	20000	140
	3	160	17000	140
	4	160	13000	110
	5	160	10000	90
	6	160	8500	90
	8	160	6500	70
	9	160	5700	70
	10	160	5000	60
	12	160	4000	60
Copper, Copper alloy, Resin material	1	50	15900	80
	1.5	50	10600	80
	2	50	8000	80
	2.5	50	6400	90
	3	50	5300	100
	4	50	4000	100
	5	50	3200	100
	6	50	2700	110
	8	50	2000	120
	9	50	1800	120
	10	50	1600	120
	12	50	1300	120

2/2

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3MAL - SLIM SHANK TYPE

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

Material	DC	Vc	n	f	ap	ae
Aluminium alloy A1000 Series	7	250	11400	1550	7	0.7
	8	250	10000	1980	8	0.8
	9	250	8800	1980	9	0.9
	10	250	8000	2090	10	1
	11	250	7200	2090	11	1.1
	12	250	6600	1870	12	1.2
Aluminium alloy A2000 – A7000 Series	7	300	13600	2090	7	0.7
	8	300	12000	2750	8	0.8
	9	300	10600	2750	9	0.9
	10	300	9500	2750	10	1
	11	300	8700	2750	11	1.1
	12	300	7900	3080	12	1.2
Aluminium alloy castings	7	200	9100	1210	7	0.7
	8	200	8000	1650	8	0.8
	9	200	7100	1650	9	0.9
	10	200	6300	1870	10	1
	11	200	5800	1870	11	1.1
	12	200	5300	1760	12	1.2
Copper, Copper alloy, Resin material	7	150	6800	1000	7	0.7
	8	150	6000	1070	8	0.8
	9	150	5300	1070	9	0.9
	10	150	4800	1000	10	1
	11	150	4300	870	11	1.1
	12	150	4000	960	12	1.2



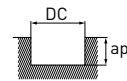
1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. These recommended conditions are calculated based on a tool overhang of 4 x DC. If a longer overhang is required, please adjust the cutting conditions by referring to the values on page 20.
3. For side milling, down (climb) milling is recommended.
4. Water-soluble cutting fluid is recommended.

C3MAL – SLIM SHANK TYPE

SLOT MILLING

Material	DC	Vc	n	f	ap
Aluminium alloy A1000 Series	7	250	11400	1100	0.7
	8	250	10000	1490	1.6
	9	250	8800	1490	1.8
	10	250	8000	1600	3
	11	250	7200	1600	3.3
	12	250	6600	1540	3.6
Aluminium alloy A2000 – A7000 Series	7	300	13600	1540	0.7
	8	300	12000	2200	1.6
	9	300	10600	2200	1.8
	10	300	9500	2040	3
	11	300	8700	2040	3.3
	12	300	7900	1930	3.6
Aluminium alloy castings	7	200	9100	990	0.7
	8	200	8000	1320	1.6
	9	200	7100	1320	1.8
	10	200	6300	1320	3
	11	200	5800	1320	3.3
	12	200	5300	1320	3.6
Copper, Copper alloy, Resin material	7	80	3600	430	0.7
	8	80	3200	480	1.6
	9	80	2800	430	1.8
	10	100	3200	760	3
	11	100	2900	700	3.3
	12	100	2700	640	3.6



1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. These recommended conditions are calculated based on a tool overhang of 4 x DC. If a longer overhang is required, please adjust the cutting conditions by referring to the values in the following table.
3. Water-soluble cutting fluid is recommended.

Overhang	Revolutions	f		ap	
		Side milling	Slot milling	Side milling	Slot milling
5D	70 %	70 %	70 %	ap 1D x ae 0.05D	60 %
6D	50 %	50 %	50 %	ap 1D x ae 0.03D	40 %
7D	30 %	30 %	30 %	ap 1D x ae 0.015D	20 %

C3SXAL



45°

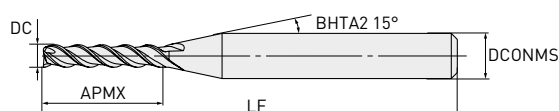


END MILL, LONG CUT LENGTH, 3 FLUTE,
FOR ALUMINIUM ALLOYS

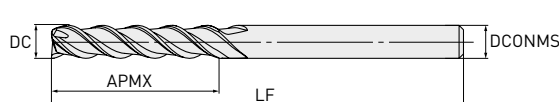
N



1



2



DC

0

-0.02



DCONMS 6

DCONMS 8, 10

DCONMS 12

0

0

0

-0.008

-0.009

-0.011

- The cutting edge suppresses chatter and vibration, resulting in superior component surface finishes.
- The flute length is DC x 5.

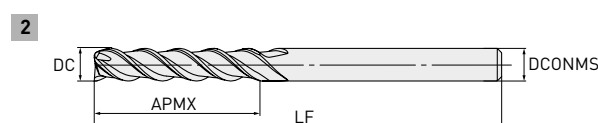
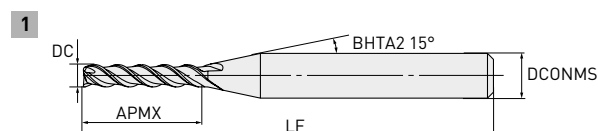
Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
C3SXALD0300	●	3	15	55	6	3	1
C3SXALD0400	●	4	20	60	6	3	1
C3SXALD0500	●	5	25	65	6	3	1
C3SXALD0600	●	6	30	75	6	3	2
C3SXALD0800	●	8	40	90	8	3	2
C3SXALD1000	●	10	50	100	10	3	2
C3SXALD1200	●	12	60	110	12	3	2
							1/1

DLC3SXAL



END MILL, LONG CUT LENGTH, 3 FLUTE,
FOR ALUMINIUM ALLOYS

N



DC

0

-0.02



DCONMS 6

DCONMS 8, 10

DCONMS 12

0

0

0

-0.008

-0.009

-0.011

- With a long neck geometry DC x 3 and DC x 5.
- DLC coating provides extreme resistance to welding.

Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
DLC3SXALD0300	●	3	15	55	6	3	1
DLC3SXALD0400	●	4	20	60	6	3	1
DLC3SXALD0500	●	5	25	65	6	3	1
DLC3SXALD0600	●	6	30	75	6	3	2
DLC3SXALD0800	●	8	40	90	8	3	2
DLC3SXALD1000	●	10	50	100	10	3	2
DLC3SXALD1200	●	12	60	110	12	3	2
							1/1

C3SXAL / DLC3SXAL

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

Material	DC	Vc	n	f	ap	ae
Aluminium alloy A1000 Series	3	160	17000	680	15	0.3
	4	160	12700	750	20	0.4
	5	160	10000	980	25	0.5
	6	160	8500	980	30	0.6
	8	160	6400	980	40	0.8
	10	160	5100	1050	50	1
	12	160	4300	1300	60	1.2
Aluminium alloy A2000 – A7000 Series	3	190	20000	680	15	0.3
	4	230	18000	1050	20	0.4
	5	230	14600	1050	25	0.5
	6	230	12000	1200	30	0.6
	8	230	9100	1350	40	0.8
	10	230	7300	1500	50	1
	12	230	6100	1650	60	1.2
Aluminium alloy castings	3	120	12700	600	15	0.3
	4	120	9600	600	20	0.4
	5	120	7600	600	25	0.5
	6	120	6400	600	30	0.6
	8	120	4800	750	40	0.8
	10	120	3800	830	50	1
	12	120	3200	900	60	1.2
Copper, Copper alloy, Resin material	3	50	5300	100	15	0.3
	4	50	4000	100	20	0.4
	5	50	3200	100	25	0.5
	6	50	2600	110	30	0.6
	8	50	2000	120	40	0.8
	10	50	1600	120	50	1
	12	50	1300	120	60	1.2



1/1

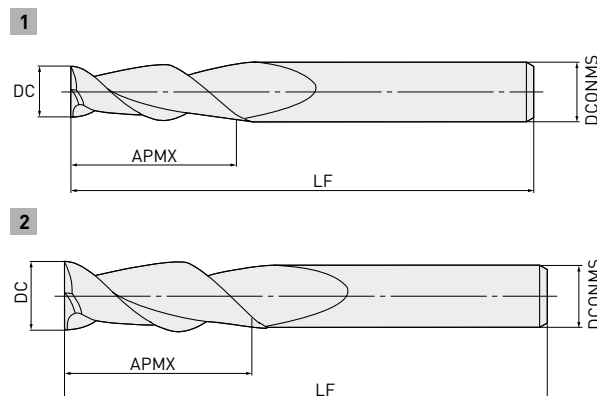
1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

AM2MR



END MILL, MEDIUM CUT LENGTH, 2 FLUTE, GENERAL PURPOSE CUTTER

N



DC=3	3<DC≤6	6<DC≤10	10<DC≤16	16<DC
0	0	0	0	0
-0.006	-0.008	-0.009	-0.011	-0.013

- Optimum choice for high speed rough and finish machining of aluminium.
- For ultra high metal removal rates.

Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
AM2MRD0300A060	●	3	9	60	3	2	2
AM2MRD0300A060S06	●	3	9	60	6	2	1
AM2MRD0400A060	●	4	12	60	4	2	2
AM2MRD0400A060S06	●	4	12	60	6	2	1
AM2MRD0500A060	●	5	15	60	5	2	2
AM2MRD0500A060S06	●	5	15	60	6	2	1
AM2MRD0600A060	●	6	18	60	6	2	2
AM2MRD0800A075	●	8	20	75	8	2	2
AM2MRD1000A075	●	10	25	75	10	2	2
AM2MRD1200A075	●	12	25	75	12	2	2
AM2MRD1400A075	●	14	32	75	16	2	1
AM2MRD1600A100	●	16	32	100	16	2	2
AM2MRD2000A100	●	20	38	100	20	2	2
AM2MRD2500A125	●	25	38	125	25	2	2

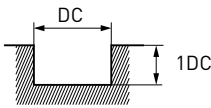
1/1



AM2MR

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf
N Aluminium alloy	3	20000	1200 – 1600
	6	20000	2800 – 4000
	8	17000	3000 – 4000
	10	15000	3600 – 4500
	12	12000	3600 – 4500
	16	10000	3600 – 4500
	20	8000	3200 – 4300
	25	6000	3000 – 3600



AM2SC

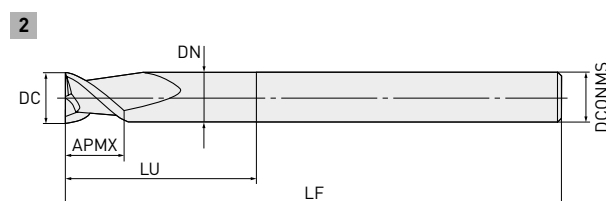
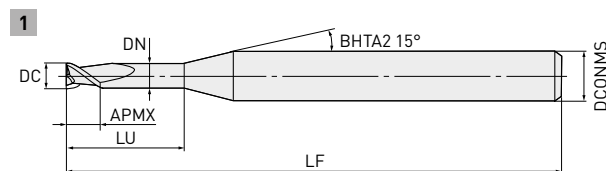


37.5°



END MILL, SHORT CUT LENGTH, 2 FLUTE,
RELIEVED NECK, CENTRE CUTTING

N



DC=3	3<DC≤6	6<DC≤16	16<DC
-0.005	-0.015	-0.02	-0.02
-0.028	-0.038	-0.047	-0.053

- Optimum choice for high speed machining of aluminium.

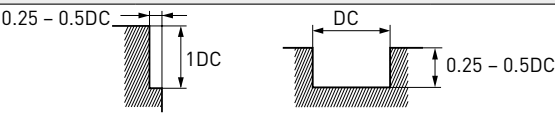
Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
AM2SCD0300A060	●	3	6	12	2.7	60	6	2	1
AM2SCD0400A060	●	4	6	12	3.7	60	6	2	1
AM2SCD0500A060	●	5	8	15	4.7	60	6	2	1
AM2SCD0600A075	●	6	8	16	5.7	75	6	2	2
AM2SCD0800A075	●	8	10	20	7.4	75	8	2	2
AM2SCD1000A075	●	10	12	30	9.4	75	10	2	2
AM2SCD1000A100	●	10	12	35	9.4	100	10	2	2
AM2SCD1200A075	●	12	15	30	11.4	75	12	2	2
AM2SCD1200A100	●	12	15	35	11.4	100	12	2	2
AM2SCD1200A125	●	12	15	40	11.4	125	12	2	2
AM2SCD1600A075	●	16	15	30	15.4	75	16	2	2
AM2SCD1600A100	●	16	15	40	15.4	100	16	2	2
AM2SCD1600A125	●	16	15	45	15.4	125	16	2	2
AM2SCD2000A100	●	20	20	40	18.0	100	20	2	2
AM2SCD2000A125	●	20	20	50	18.0	125	20	2	2

1/1

AM2SC

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf
N Aluminium alloy	3	20000	800 – 1600
	6	20000	1800 – 2800
	8	17000	2200 – 3400
	10	15000	2300 – 3600
	12	12000	2300 – 3600
	16	10000	2300 – 3600
	20	8000	2200 – 3300



AM3SS

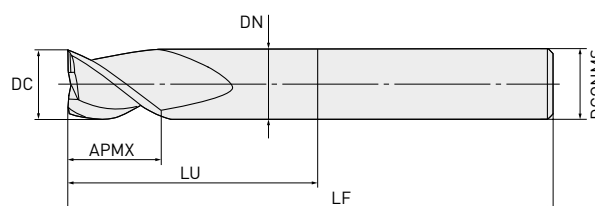


37.5°



END MILL, SHORT CUT LENGTH, 3 FLUTE,
RELIEVED NECK, NON CENTRE CUTTING

N



$12 \leq DC \leq 16$	$16 < DC$
-0.02	-0.02
-0.047	-0.053

- Optimum choice for high speed machining of aluminium.

Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP
AM3SSD1000A075	●	10	12	30	9.4	75	10	3
AM3SSD1000A100	●	10	12	35	9.4	100	10	
AM3SSD1200A075	●	12	15	30	11.4	75	12	
AM3SSD1200A100	●	12	15	35	11.4	100	12	
AM3SSD1200A125	●	12	15	40	11.4	125	12	
AM3SSD1600A075	●	16	15	30	15.4	75	16	
AM3SSD1600A100	●	16	15	40	15.4	100	16	
AM3SSD1600A125	●	16	15	45	15.4	125	16	
AM3SSD2000A100	●	20	20	40	18.0	100	20	
AM3SSD2000A125	●	20	20	60	18.0	125	20	
AM3SSD2000A150	●	20	20	85	18.0	150	20	
AM3SSD2500A100	●	25	20	50	23.0	100	25	
AM3SSD2500A125	●	25	20	65	23.0	125	25	
AM3SSD2500A150	●	25	20	90	23.0	150	25	

1/1

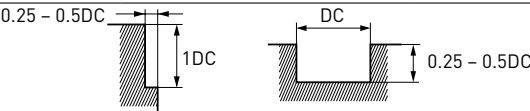


29

AM3SS

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf
N Aluminium alloy	12	12000	1600 – 2500
	16	10000	1300 – 2100
	20	8000	1100 – 1600
	25	6000	800 – 1200



C2XLAL / C3XLAL

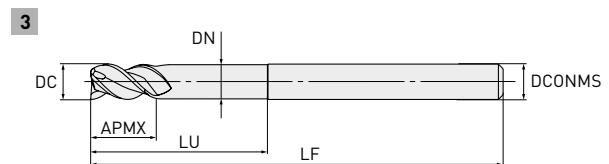
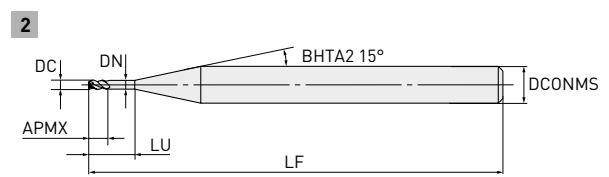
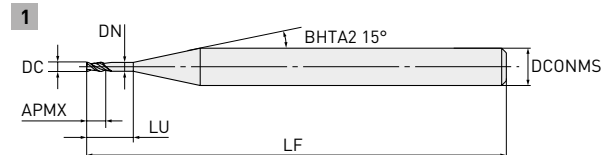


C2XLAL

C3XLAL

END MILL, LONG NECK, 2 AND 3 FLUTE,
FOR ALUMINIUM ALLOYS

N



DC

0

-0.02



DCONMS 4, 6

DCONMS 8, 10

DCONMS 12

0

-0.008

0

-0.009

0

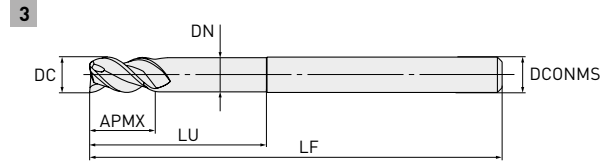
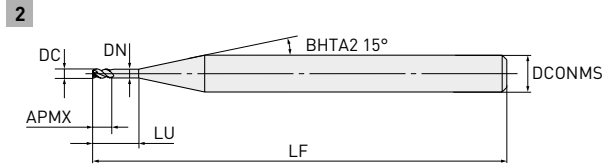
-0.011

- The cutting edge suppresses chatter and vibration resulting in superior component surface finishes.
- With a long neck geometry DC x 3 and DC x 5.

Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
C2XLALD0100N030	●	1	1.5	3	0.95	45	4	2	1
C2XLALD0100N050	●	1	1.5	5	0.95	45	4	2	1
C2XLALD0150N045	●	1.5	2.3	4.5	1.45	45	4	2	1
C2XLALD0150N080	●	1.5	2.3	8	1.45	45	4	2	1
C2XLALD0200N060	●	2	3	6	1.94	45	4	2	1
C2XLALD0200N100	●	2	3	10	1.94	45	4	2	1
C2XLALD0250N075	●	2.5	3.8	7.5	2.4	45	4	2	1
C2XLALD0250N125	●	2.5	3.8	12.5	2.4	45	4	2	1
C3XLALD0100N030	●	1	1.5	3	0.95	45	4	3	2
C3XLALD0100N050	●	1	1.5	5	0.95	45	4	3	2
C3XLALD0150N045	●	1.5	2.3	4.5	1.45	45	4	3	2
C3XLALD0150N080	●	1.5	2.3	8	1.45	45	4	3	2
C3XLALD0200N060	●	2	3	6	1.94	45	4	3	2
C3XLALD0200N100	●	2	3	10	1.94	45	4	3	2
C3XLALD0250N075	●	2.5	3.8	7.5	2.4	45	4	3	2
C3XLALD0250N125	●	2.5	3.8	12.5	2.4	45	4	3	2
C3XLALD0300N090	●	3	4.5	9	2.85	55	6	3	2

1/2

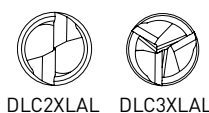
C2XLAL / C3XLAL – END MILL, LONG NECK, 2 AND 3 FLUTE, FOR ALUMINIUM ALLOYS



Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
C3XLALD0300N150	●	3	4.5	15	2.85	55	6	3	2
C3XLALD0400N120	●	4	6	12	3.8	60	6	3	2
C3XLALD0400N200	●	4	6	20	3.8	60	6	3	2
C3XLALD0500N150	●	5	7.5	15	4.8	65	6	3	2
C3XLALD0500N250	●	5	7.5	25	4.8	65	6	3	2
C3XLALD0600N180	●	6	9	18	5.8	70	6	3	3
C3XLALD0600N300	●	6	9	30	5.8	70	6	3	3
C3XLALD0700N210	●	7	10.5	21	6.8	75	8	3	2
C3XLALD0700N350	●	7	10.5	35	6.8	75	8	3	2
C3XLALD0800N240	●	8	12	24	7.8	80	8	3	3
C3XLALD0800N400	●	8	12	40	7.8	80	8	3	3
C3XLALD0900N270	●	9	13.5	27	8.8	85	10	3	2
C3XLALD0900N450	●	9	13.5	45	8.8	85	10	3	2
C3XLALD1000N300	●	10	15	30	9.8	90	10	3	3
C3XLALD1000N500	●	10	15	50	9.8	90	10	3	3
C3XLALD1100N330	●	11	16.5	33	10.8	95	12	3	2
C3XLALD1100N550	●	11	16.5	55	10.8	95	12	3	2
C3XLALD1200N360	●	12	18	36	11.8	100	12	3	3
C3XLALD1200N600	●	12	18	60	11.8	100	12	3	3

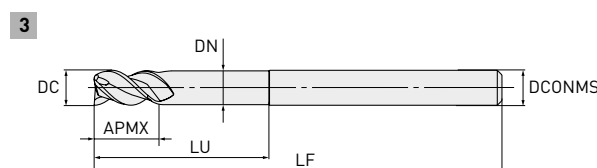
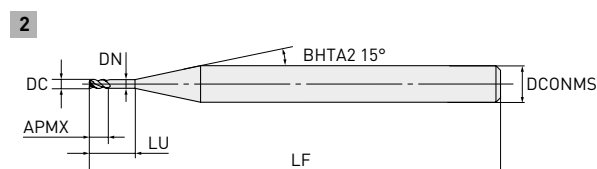
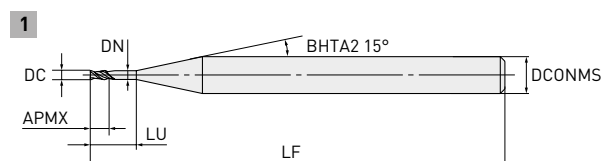
2/2

DLC2XLAL / DLC3XLAL



END MILL, LONG NECK, 2 AND 3 FLUTE, FOR ALUMINIUM ALLOYS

N



DC
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-0.02



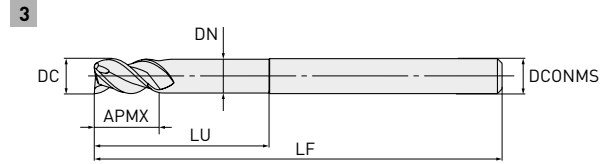
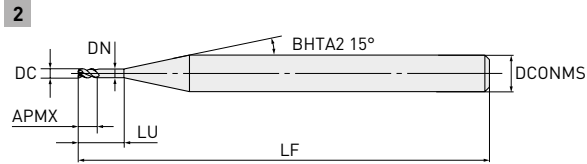
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0	0	0
-0.008	-0.009	-0.011

- With a long neck geometry DC x 3 and DC x 5.
- DLC coating provides extreme resistance to welding.

Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
DLC2XLALD0100N030	●	1	1.5	3	0.95	45	4	2	1
DLC2XLALD0100N050	●	1	1.5	5	0.95	45	4	2	1
DLC2XLALD0150N045	●	1.5	2.3	4.5	1.45	45	4	2	1
DLC2XLALD0150N080	●	1.5	2.3	8	1.45	45	4	2	1
DLC2XLALD0200N060	●	2	3	6	1.94	45	4	2	1
DLC2XLALD0200N100	●	2	3	10	1.94	45	4	2	1
DLC2XLALD0250N075	●	2.5	3.8	7.5	2.4	45	4	2	1
DLC2XLALD0250N125	●	2.5	3.8	12.5	2.4	45	4	2	1
DLC3XLALD0100N030	●	1	1.5	3	0.95	45	4	3	2
DLC3XLALD0100N050	●	1	1.5	5	0.95	45	4	3	2
DLC3XLALD0150N045	●	1.5	2.3	4.5	1.45	45	4	3	2
DLC3XLALD0150N080	●	1.5	2.3	8	1.45	45	4	3	2
DLC3XLALD0200N060	●	2	3	6	1.94	45	4	3	2
DLC3XLALD0200N100	●	2	3	10	1.94	45	4	3	2

1/2

DLC2XLAL / DLC3XLAL – END MILL, LONG NECK, 2 AND 3 FLUTE, FOR ALUMINIUM ALLOYS



Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
DLC3XLALD0250N075	●	2.5	3.8	7.5	2.4	45	4	3	2
DLC3XLALD0250N125	●	2.5	3.8	12.5	2.4	45	4	3	2
DLC3XLALD0300N090	●	3	4.5	9	2.85	55	6	3	2
DLC3XLALD0300N150	●	3	4.5	15	2.85	55	6	3	2
DLC3XLALD0400N120	●	4	6	12	3.8	60	6	3	2
DLC3XLALD0400N200	●	4	6	20	3.8	60	6	3	2
DLC3XLALD0500N150	●	5	7.5	15	4.8	65	6	3	2
DLC3XLALD0500N250	●	5	7.5	25	4.8	65	6	3	2
DLC3XLALD0600N180	●	6	9	18	5.8	70	6	3	3
DLC3XLALD0600N300	●	6	9	30	5.8	70	6	3	3
DLC3XLALD0800N240	●	8	12	24	7.8	80	8	3	3
DLC3XLALD0800N400	●	8	12	40	7.8	80	8	3	3
DLC3XLALD0900N270	●	9	13.5	27	8.8	85	10	3	2
DLC3XLALD0900N450	●	9	13.5	45	8.8	85	10	3	2
DLC3XLALD1000N300	●	10	15	30	9.8	90	10	3	3
DLC3XLALD1000N500	●	10	15	50	9.8	90	10	3	3
DLC3XLALD1100N330	●	11	16.5	33	10.8	95	12	3	2
DLC3XLALD1100N550	●	11	16.5	55	10.8	95	12	3	2
DLC3XLALD1200N360	●	12	18	36	11.8	100	12	3	3
DLC3XLALD1200N600	●	12	18	60	11.8	100	12	3	3

2/2

C2XLAL / DLC2XLAL

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

Material	DC	LU	Vc	n	f	ap	ae
Aluminium alloy A1000 Series, A2000 – A7000 Series	1	3	60	20000	800	1	0.3
	1	5	50	16000	660	1	0.3
	1.5	4.5	90	20000	800	1.5	0.45
	1.5	8	80	16000	660	1.5	0.45
	2	6	130	20000	1100	2	0.6
	2	10	100	16000	880	2	0.6
	2.5	7.5	160	20000	1100	2.5	0.75
	2.5	12.5	130	16000	880	2.5	0.75
N Aluminium alloy castings	1	3	60	20000	800	1	0.3
	1	5	50	16000	660	1	0.3
	1.5	4.5	90	20000	800	1.5	0.45
	1.5	8	80	16000	660	1.5	0.45
	2	6	130	20000	1100	2	0.6
	2	10	100	16000	880	2	0.6
	2.5	7.5	160	20000	1100	2.5	0.75
	2.5	12.5	130	16000	880	2.5	0.75
Copper, Copper alloy, Resin material	1	3	60	20000	800	1	0.3
	1	5	50	16000	660	1	0.3
	1.5	4.5	90	20000	800	1.5	0.45
	1.5	8	80	16000	660	1.5	0.45
	2	6	130	20000	1100	2	0.6
	2	10	100	16000	880	2	0.6
	2.5	7.5	160	20000	1100	2.5	0.75
	2.5	12.5	130	16000	880	2.5	0.75



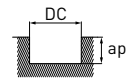
1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C2XLAL / DLC2XLAL

SLOT MILLING

Material	DC	LU	Vc	n	f	ap
Aluminium alloy A1000 Series, A2000 – A7000 Series	1	3	60	20000	440	1
	1	5	50	16000	360	1
	1.5	4.5	90	20000	440	1.5
	1.5	8	80	16000	360	1.5
	2	6	130	20000	660	2
	2	10	100	16000	580	2
	2.5	7.5	160	20000	660	2.5
	2.5	12.5	130	16000	580	2.5
N Aluminium alloy castings	1	3	60	20000	440	1
	1	5	50	16000	360	1
	1.5	4.5	90	20000	440	1.5
	1.5	8	80	16000	360	1.5
	2	6	130	20000	660	2
	2	10	100	16000	580	2
	2.5	7.5	160	20000	660	2.5
	2.5	12.5	130	16000	580	2.5
Copper, Copper alloy, Resin material	1	3	60	20000	440	1
	1	5	50	16000	360	1
	1.5	4.5	90	20000	440	1.5
	1.5	8	80	16000	360	1.5
	2	6	130	20000	660	2
	2	10	100	16000	580	2
	2.5	7.5	160	20000	660	2.5
	2.5	12.5	130	16000	580	2.5



1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C2XLAL / DLC2XLAL

PLUNGING

Material	DC	LU	Vc	n	f
Aluminium alloy A1000 Series, A2000 – A7000 Series	1	3	60	20000	140
	1	5	50	16000	120
	1.5	4.5	90	20000	140
	1.5	8	80	16000	120
	2	6	130	20000	220
	2	10	100	16000	180
	2.5	7.5	160	20000	220
	2.5	12.5	130	16000	180
N Aluminium alloy castings	1	3	60	20000	110
	1	5	50	16000	90
	1.5	4.5	90	20000	110
	1.5	8	80	16000	90
	2	6	130	20000	190
	2	10	100	16000	140
	2.5	7.5	160	20000	190
	2.5	12.5	130	16000	140
Copper, Copper alloy, Resin material	1	3	60	20000	110
	1	5	50	16000	90
	1.5	4.5	90	20000	110
	1.5	8	80	16000	90
	2	6	130	20000	190
	2	10	100	16000	140
	2.5	7.5	160	20000	190
	2.5	12.5	130	16000	140

1/1

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

RECOMMENDED CUTTING CONDITIONS

SIDE MILLING

Material	DC	LU	Vc	n	f	ap	ae
N Aluminium alloy A1000 Series	1	3	60	20000	1210	1	0.3
	1	5	50	16000	990	1	0.3
	1.5	4.5	90	20000	1210	1.5	0.45
	1.5	8	80	16000	990	1.5	0.45
	2	6	130	20000	1650	2	0.6
	2	10	100	16000	1320	2	0.6
	2.5	7.5	160	20000	1650	2.5	0.75
	2.5	12.5	130	16000	1320	2.5	0.75
	3	9	190	20000	2200	3	0.9
	3	15	150	16000	1760	3	0.9
	4	12	250	20000	2420	4	1.2
	4	20	200	16000	1980	4	1.2
	5	15	310	19700	2750	5	1.5
	5	25	250	15700	2200	5	1.5
	6	18	310	16500	2750	6	1.8
	6	30	250	13200	2200	6	1.8
	7	21	310	14100	2750	7	2.1
	7	35	250	11400	2200	7	2.1
	8	24	310	12300	2750	8	2.4
	8	40	250	9800	2200	8	2.4
	9	27	310	11000	2750	9	2.7
	9	45	250	8800	2000	9	2.7
	10	30	310	9900	2750	10	3
	10	50	250	7900	2200	10	3
	11	33	310	9000	2860	11	3.3
	11	55	250	7200	2100	11	3.3
	12	36	310	8200	2970	12	3.6
	12	60	250	6500	2200	12	3.6



1/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

SIDE MILLING

Material	DC	LU	Vc	n	f	ap	ae
N Aluminium alloy A2000 – A7000 Series	1	3	60	20000	1210	1	0.3
	1	5	50	16000	990	1	0.3
	1.5	4.5	90	20000	1210	1.5	0.45
	1.5	8	80	16000	990	1.5	0.45
	2	6	130	20000	1650	2	0.6
	2	10	100	16000	1320	2	0.6
	2.5	7.5	160	20000	1650	2.5	0.75
	2.5	12.5	130	16000	1320	2.5	0.75
	3	9	190	20000	2420	3	0.9
	3	15	150	16000	1980	3	0.9
	4	12	250	20000	2750	4	1.2
	4	20	200	16000	2200	4	1.2
	5	15	310	20000	3410	5	1.5
	5	25	250	16000	2750	5	1.5
	6	18	350	18600	3850	6	1.8
	6	30	280	14800	3080	6	1.8
	7	21	350	15900	3850	7	2.1
	7	35	280	12700	3080	7	2.1
	8	24	350	13900	3850	8	2.4
	8	40	280	11100	3080	8	2.4
	9	27	350	12400	3850	9	2.7
	9	45	280	9900	3080	9	2.7
	10	30	350	11100	4180	10	3
	10	50	280	8800	3300	10	3
	11	33	350	10100	4510	11	3.3
	11	55	280	8100	3520	11	3.3
	12	36	350	9300	4510	12	3.6
	12	60	280	7400	3520	12	3.6



2/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

SIDE MILLING

Material	DC	LU	Vc	n	f	ap	ae
N Aluminium alloy castings, Copper, Copper alloy, Resin material	1	3	60	20000	1210	1	0.3
	1	5	50	16000	990	1	0.3
	1.5	4.5	90	20000	1210	1.5	0.45
	1.5	8	80	16000	990	1.5	0.45
	2	6	130	20000	1650	2	0.6
	2	10	100	16000	1320	2	0.6
	2.5	7.5	160	20000	1650	2.5	0.75
	2.5	12.5	130	16000	1320	2.5	0.75
	3	9	190	20000	2420	3	0.9
	3	15	150	16000	1980	3	0.9
	4	12	230	18300	2530	4	1.2
	4	20	180	14600	2090	4	1.2
	5	15	230	14600	2310	5	1.5
	5	25	180	11700	1870	5	1.5
	6	18	230	12200	2310	6	1.8
	6	30	180	9700	1870	6	1.8
	7	21	230	10500	2310	7	2.1
	7	35	180	8200	1870	7	2.1
	8	24	230	9200	2420	8	2.4
	8	40	180	7300	1980	8	2.4
	9	27	230	8100	2420	9	2.7
	9	45	180	6400	1980	9	2.7
	10	30	230	7300	2420	10	3
	10	50	180	5800	1980	10	3
	11	33	230	6700	2420	11	3.3
	11	55	180	5200	1980	11	3.3
	12	36	230	6100	2420	12	3.6
	12	60	180	4800	1980	12	3.6



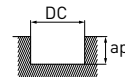
3/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. For side milling, down (climb) milling is recommended.
3. Water-soluble cutting fluid is recommended.
4. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

SLOT MILLING

Material	DC	LU	Vc	n	f	ap
N Aluminium alloy A1000 Series	1	3	60	20000	660	1
	1	5	50	16000	550	1
	1.5	4.5	90	20000	660	1.5
	1.5	8	80	16000	550	1.5
	2	6	130	20000	990	2
	2	10	100	16000	880	2
	2.5	7.5	160	20000	990	2.5
	2.5	12.5	130	16000	880	2.5
	3	9	190	20000	1320	3
	3	15	150	16000	1100	3
	4	12	250	20000	1540	4
	4	20	200	16000	1320	4
	5	15	310	19700	1650	5
	5	25	250	15700	1320	5
	6	18	310	16500	1760	6
	6	30	250	13200	1430	6
	7	21	310	14100	1760	7
	7	35	250	11400	1430	7
	8	24	310	12300	1870	8
	8	40	250	9800	1540	8
	9	27	310	11000	1870	9
	9	45	250	8800	1540	9
	10	30	310	9900	1870	10
	10	50	250	7900	1540	10
	11	33	310	9000	1980	11
	11	55	250	7200	1540	11
	12	36	310	8200	2090	12
	12	60	250	6500	1650	12



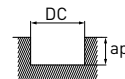
1/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

SLOT MILLING

Material	DC	LU	Vc	n	f	ap
N Aluminium alloy A2000 – A7000 Series	1	3	60	20000	660	1
	1	5	50	16000	550	1
	1.5	4.5	90	20000	660	1.5
	1.5	8	80	16000	550	1.5
	2	6	130	20000	990	2
	2	10	100	16000	880	2
	2.5	7.5	160	20000	990	2.5
	2.5	12.5	130	16000	880	2.5
	3	9	190	20000	1540	3
	3	15	150	16000	1320	3
	4	12	250	20000	1980	4
	4	20	200	16000	1650	4
	5	15	310	20000	2420	5
	5	25	250	16000	1980	5
	6	18	350	18600	2750	6
	6	30	280	14800	2200	6
	7	21	350	15900	2750	7
	7	35	280	12700	2200	7
	8	24	350	13900	2860	8
	8	40	280	11100	2310	8
	9	27	350	12400	2860	9
	9	45	280	9900	2310	9
	10	30	350	11100	2860	10
	10	50	280	8800	2310	10
	11	33	350	10100	2860	11
	11	55	280	8100	2310	11
	12	36	350	9300	2860	12
	12	60	280	7400	2310	12



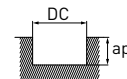
2/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

SLOT MILLING

Material	DC	LU	Vc	n	f	ap
N Aluminium alloy castings, Copper, Copper alloy, Resin material	1	3	60	20000	660	1
	1	5	50	16000	550	1
	1.5	4.5	90	20000	660	1.5
	1.5	8	80	16000	550	1.5
	2	6	130	20000	990	2
	2	10	100	16000	880	2
	2.5	7.5	160	20000	990	2.5
	2.5	12.5	130	16000	880	2.5
	3	9	190	20000	1320	3
	3	15	150	16000	1100	3
	4	12	230	18300	1540	4
	4	20	180	14600	1320	4
	5	15	230	14600	1540	5
	5	25	180	11700	1320	5
	6	18	230	12200	1540	6
	6	30	180	9700	1320	6
	7	21	230	10500	1540	7
	7	35	180	8200	1320	7
	8	24	230	9200	1540	8
	8	40	180	7300	1320	8
	9	27	230	8100	1540	9
	9	45	180	6400	1320	9
	10	30	230	7300	1540	10
	10	50	180	5800	1320	10
	11	33	230	6700	1540	11
	11	55	180	5200	1320	11
	12	36	230	6100	1650	12
	12	60	180	4800	1320	12



3/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

PLUNGING

Material	DC	LU	Vc	n	f
N Aluminium alloy A1000 Series	1	3	60	20000	220
	1	5	50	16000	180
	1.5	4.5	90	20000	220
	1.5	8	80	16000	180
	2	6	130	20000	330
	2	10	100	16000	260
	2.5	7.5	160	20000	330
	2.5	12.5	130	16000	260
	3	9	190	20000	330
	3	15	150	16000	260
	4	12	250	20000	330
	4	20	200	16000	260
	5	15	310	19700	330
	5	25	250	15700	260
	6	18	310	16500	330
	6	30	250	13200	260
	7	21	310	14100	220
	7	35	250	11400	180
	8	24	310	12300	220
	8	40	250	9800	180
	9	27	310	11000	220
	9	45	250	8800	180
	10	30	310	9900	110
	10	50	250	7900	90
	11	33	310	9000	110
	11	55	250	7200	90
	12	36	310	8200	110
	12	60	250	6500	90

1/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

PLUNGING

Material	DC	LU	Vc	n	f
N Aluminium alloy A2000 – A7000 Series	1	3	60	20000	220
	1	5	50	16000	180
	1.5	4.5	90	20000	220
	1.5	8	80	16000	180
	2	6	130	20000	330
	2	10	100	16000	260
	2.5	7.5	160	20000	330
	2.5	12.5	130	16000	260
	3	9	190	20000	330
	3	15	150	16000	260
	4	12	250	20000	440
	4	20	200	16000	350
	5	15	310	20000	440
	5	25	250	16000	350
	6	18	350	18600	440
	6	30	280	14800	350
	7	21	350	15900	440
	7	35	280	12700	350
	8	24	350	13900	440
	8	40	280	11100	350
	9	27	350	12400	330
	9	45	280	9900	260
	10	30	350	11100	330
	10	50	280	8800	260
	11	33	350	10100	330
	11	55	280	8100	260
	12	36	350	9300	330
	12	60	280	7400	260

2/3

1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

C3XLAL / DLC3XLAL

PLUNGING

Material	DC	LU	Vc	n	f
N Aluminium alloy castings, Copper, Copper alloy, Resin material	1	3	60	20000	170
	1	5	50	16000	130
	1.5	4.5	90	20000	170
	1.5	8	80	16000	130
	2	6	130	20000	280
	2	10	100	16000	220
	2.5	7.5	160	20000	280
	2.5	12.5	130	16000	220
	3	9	190	20000	280
	3	15	150	16000	220
	4	12	230	18300	220
	4	20	180	14600	180
	5	15	230	14600	170
	5	25	180	11700	130
	6	18	230	12200	170
	6	30	180	9700	130
	7	21	230	10500	150
	7	35	180	8200	110
	8	24	230	9200	130
	8	40	180	7300	110
	9	27	230	8100	130
	9	45	180	6400	110
	10	30	230	7300	90
	10	50	180	5800	80
	11	33	230	6700	90
	11	55	180	5200	80
	12	36	230	6100	70
	12	60	180	4800	60

3/3

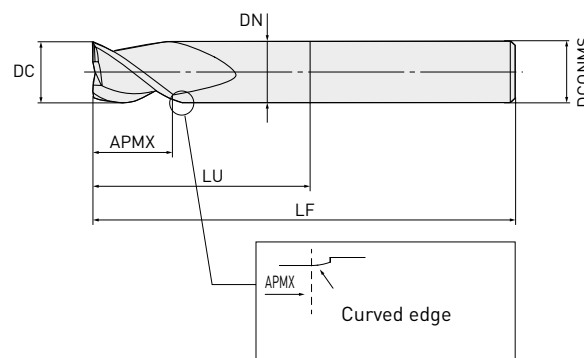
1. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, adjust the speed and feed rate proportionally.
2. Water-soluble cutting fluid is recommended.
3. DLC coating is the first recommendation for resin materials. If the surface quality or tool life is reduced, use a non-coated product.

A3SA



END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK, MULTIPLE INTERNAL HELICAL THROUGH COOLANT HOLES

N



DC=12	DC>12
0	0
-0.020	-0.030



12<DCONMS<16	20<DCONMS<25
0	0
-0.011	-0.013

- Stability and reliability even when slotting, ramping and plunging.
- The cross sectional geometry of the flutes is perfect for efficient chip discharge.

Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP
A3SA120N36C	●	12	18	36	11.4	80	12	3
A3SA160N48C	●	16	24	48	15.4	90	16	
A3SA200N55C	●	20	30	55	18	100	20	
A3SA250N55C	●	25	37.5	55	23	100	25	

1/1

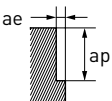
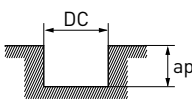
47

A3SA

RECOMMENDED CUTTING CONDITIONS

HIGH EFFICIENCY CONDITIONS

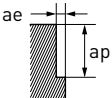
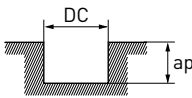
Material	DC	n	Vf	ae	ap	n	Vf	ap
N Aluminium alloy	12	33000	15000	6	12	33000	15000	6
	16	33000	20000	8	16	33000	20000	8
	20	33000	26000	10	20	33000	26000	10
	25	33000	32000	12.5	25	33000	32000	12.5

1/1

GENERAL PURPOSE CONDITIONS

Material	DC	n	Vf	ae	ap	n	Vf	ap
N Aluminium alloy	12	16000	7200	6	12	33000	7200	6
	16	12000	7200	8	16	33000	7200	8
	20	9500	7400	10	20	33000	7400	10
	25	7600	7300	12.5	25	33000	7300	12.5

1/1

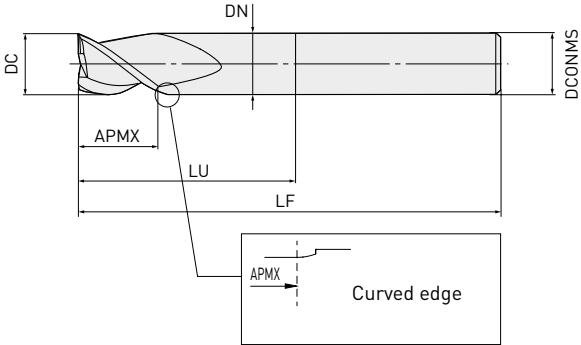
1. Water-soluble cutting fluid is recommended.
2. Climb milling is recommended for side cutting.
3. When machining with a large tool length protrusion, adjust the speed, feed and depth of cut as necessary.
4. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately within the range described in the above table, or reduce the depth and width of cut.

DLC3SA



END MILL, SHORT CUT LENGTH, 3 FLUTE,
RELIEVED NECK, MULTIPLE INTERNAL HELICAL
THROUGH COOLANT HOLES

N



DC=12	DC>12
0	0
-0.020	-0.030

12≤DCONMS≤16	20≤DCONMS≤25
0	0
-0.011	-0.013



- Stability and reliability even when slotting, ramping and plunging.
- The cross sectional geometry of the flutes is perfect for efficient chip discharge.

Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP
DLC3SA120N36C	★	12	18	36	11.4	80	12	3
DLC3SA160N48C	★	16	24	48	15.4	90	16	
DLC3SA200N55C	★	20	30	55	18	100	20	
DLC3SA250N55C	★	25	37.5	55	23	100	25	

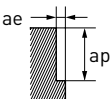
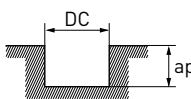
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DLC3SA

RECOMMENDED CUTTING CONDITIONS

HIGH EFFICIENCY CONDITIONS

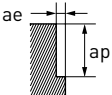
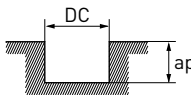
Material	DC	n	Vf	ae	ap	n	Vf	ap
N Aluminium alloy	12	33000	15000	6	12	33000	15000	6
	16	33000	20000	8	16	33000	20000	8
	20	33000	26000	10	20	33000	26000	10
	25	33000	32000	12.5	25	33000	32000	12.5

1/1

GENERAL PURPOSE CONDITIONS

Material	DC	n	Vf	ae	ap	n	Vf	ap
N Aluminium alloy	12	16000	7200	6	12	33000	7200	6
	16	12000	7200	8	16	33000	7200	8
	20	9500	7400	10	20	33000	7400	10
	25	7600	7300	12.5	25	33000	7300	12.5

1/1

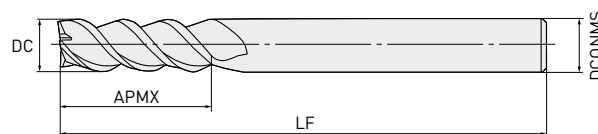
1. Water-soluble cutting fluid is recommended.
2. Climb milling is recommended for side cutting.
3. When machining with a large tool length protrusion, adjust the speed, feed and depth of cut as necessary.
4. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately within the range described in the above table, or reduce the depth and width of cut.

AM3MF



END MILL, MEDIUM CUT LENGTH, 3 FLUTE, CENTRE CUTTING

N



DC=6	6<DC≤16
-0.015	-0.02
-0.038	-0.047

- Versatile end mill for slotting and end milling of aluminium.
- For high tolerance and precision finish machining.

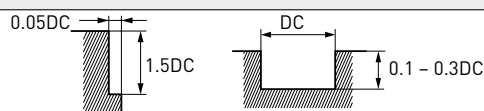
Order number	Stock	DC	APMX	LF	DCONMS	ZEFP
AM3MFD0600A050	●	6	13	50	6	3
AM3MFD0800A060	●	8	19	60	8	
AM3MFD1000A075	●	10	22	75	10	
AM3MFD1200A075	●	12	26	75	12	
AM3MFD1600A090	●	16	32	90	16	

1/1



RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf
N Aluminium alloy	6	20000	4200
	8	17000	5100
	10	15000	5400
	12	12000	5400
	16	10000	4800



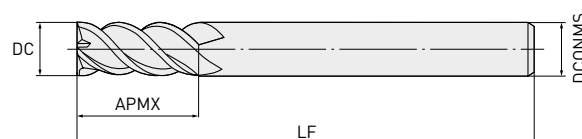
1/1

AM4MF



END MILL, MEDIUM CUT LENGTH, 4 FLUTE,
FINISHING TYPE, CENTRE CUTTING

N



$20 \leq DC \leq 25$

-0.02

-0.053

- Versatile 4 flute end mill for machining aluminium.
- For high tolerance and precision finishing.

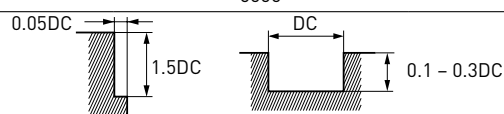
Order number	Stock	DC	APMX	LF	DCONMS	ZEFP
AM4MFD2000A100	●	20	38	100	20	4
AM4MFD2500A125	●	25	45	125	25	

1/1

51

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf
N Aluminium alloy	20	8000	5700
	25	6000	4800



1/1

AM2SCRB

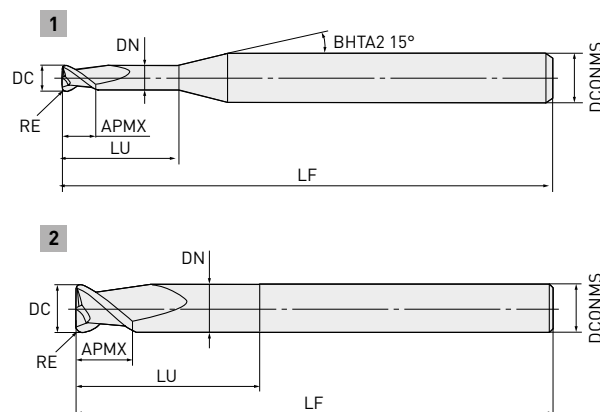


37.5°



CORNER RADIUS END MILL, SHORT CUT LENGTH, 2 FLUTE, RELIEVED NECK

N



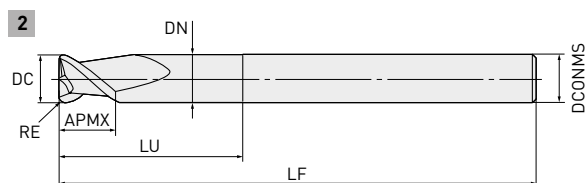
DC ≤ 12	DC > 12
0	0
-0.020	-0.030

- High efficiency machining of aluminium alloys.

Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP	Type
AM2SCRBD0300A060R030	●	3	0.3	6	12	2.7	60	6	2	1
AM2SCRBD0300A060R050	●	3	0.5	6	12	2.7	60	6	2	1
AM2SCRBD0400A060R030	●	4	0.3	6	12	3.7	60	6	2	1
AM2SCRBD0400A060R050	●	4	0.5	6	12	3.7	60	6	2	1
AM2SCRBD0500A060R030	●	5	0.3	8	15	4.7	60	6	2	1
AM2SCRBD0500A060R050	●	5	0.5	8	15	4.7	60	6	2	1
AM2SCRBD0600A075R030	●	6	0.3	8	16	5.7	75	6	2	2
AM2SCRBD0600A075R050	●	6	0.5	8	16	5.7	75	6	2	2
AM2SCRBD0600A075R100	●	6	1	8	16	5.7	75	6	2	2
AM2SCRBD0800A075R030	●	8	0.3	10	20	7.4	75	8	2	2
AM2SCRBD0800A075R050	●	8	0.5	10	20	7.4	75	8	2	2
AM2SCRBD0800A075R100	●	8	1	10	20	7.4	75	8	2	2
AM2SCRBD0800A075R160	●	8	1.6	10	20	7.4	75	8	2	2
AM2SCRBD0800A075R250	●	8	2.5	10	20	7.4	75	8	2	2
AM2SCRBD1000A075R030	●	10	0.3	12	30	9.4	75	10	2	2
AM2SCRBD1000A075R050	●	10	0.5	12	30	9.4	75	10	2	2
AM2SCRBD1000A075R100	●	10	1	12	30	9.4	75	10	2	2
AM2SCRBD1000A075R160	●	10	1.6	12	30	9.4	75	10	2	2
AM2SCRBD1000A075R250	●	10	2.5	12	30	9.4	75	10	2	2
AM2SCRBD1000A100R030	●	10	0.3	12	35	9.4	100	10	2	2
AM2SCRBD1000A100R050	●	10	0.5	12	35	9.4	100	10	2	2
AM2SCRBD1000A100R100	●	10	1	12	35	9.4	100	10	2	2
AM2SCRBD1000A100R160	●	10	1.6	12	35	9.4	100	10	2	2
AM2SCRBD1000A100R250	●	10	2.5	12	35	9.4	100	10	2	2

1/2

AM2SCRB – CORNER RADIUS END MILL, SHORT CUT LENGTH, 2 FLUTE, RELIEVED NECK



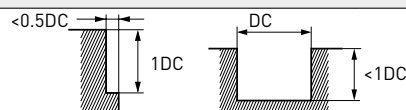
Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP	Type
AM2SCRB1200A075R030	●	12	0.3	15	30	11.4	75	12	2	2
AM2SCRB1200A075R050	●	12	0.5	15	30	11.4	75	12	2	2
AM2SCRB1200A075R100	●	12	1	15	30	11.4	75	12	2	2
AM2SCRB1200A075R160	●	12	1.6	15	30	11.4	75	12	2	2
AM2SCRB1200A075R250	●	12	2.5	15	30	11.4	75	12	2	2
AM2SCRB1200A075R320	●	12	3.2	15	30	11.4	75	12	2	2
AM2SCRB1200A075R400	●	12	4	15	30	11.4	75	12	2	2
AM2SCRB1200A100R030	●	12	0.3	15	35	11.4	100	12	2	2
AM2SCRB1200A100R050	●	12	0.5	15	35	11.4	100	12	2	2
AM2SCRB1200A100R100	●	12	1	15	35	11.4	100	12	2	2
AM2SCRB1200A100R160	●	12	1.6	15	35	11.4	100	12	2	2
AM2SCRB1200A100R250	●	12	2.5	15	35	11.4	100	12	2	2
AM2SCRB1200A100R320	●	12	3.2	15	35	11.4	100	12	2	2
AM2SCRB1200A100R400	●	12	4	15	35	11.4	100	12	2	2
AM2SCRB1200A125R030	●	12	0.3	15	40	11.4	125	12	2	2
AM2SCRB1200A125R050	●	12	0.5	15	40	11.4	125	12	2	2
AM2SCRB1200A125R100	●	12	1	15	40	11.4	125	12	2	2
AM2SCRB1200A125R160	●	12	1.6	15	40	11.4	125	12	2	2
AM2SCRB1200A125R250	●	12	2.5	15	40	11.4	125	12	2	2
AM2SCRB1200A125R320	●	12	3.2	15	40	11.4	125	12	2	2
AM2SCRB1200A125R400	●	12	4	15	40	11.4	125	12	2	2
AM2SCRB1600A075R100	●	16	1	15	30	15.4	75	16	2	2
AM2SCRB1600A075R160	●	16	1.6	15	30	15.4	75	16	2	2
AM2SCRB1600A075R250	●	16	2.5	15	30	15.4	75	16	2	2
AM2SCRB1600A075R320	●	16	3.2	15	30	15.4	75	16	2	2
AM2SCRB1600A075R400	●	16	4	15	30	15.4	75	16	2	2
AM2SCRB1600A100R100	●	16	1	15	40	15.4	100	16	2	2
AM2SCRB1600A100R160	●	16	1.6	15	40	15.4	100	16	2	2
AM2SCRB1600A100R250	●	16	2.5	15	40	15.4	100	16	2	2
AM2SCRB1600A100R320	●	16	3.2	15	40	15.4	100	16	2	2
AM2SCRB1600A100R400	●	16	4	15	40	15.4	100	16	2	2
AM2SCRB1600A125R100	●	16	1	15	45	15.4	125	16	2	2
AM2SCRB1600A125R160	●	16	1.6	15	45	15.4	125	16	2	2
AM2SCRB1600A125R250	●	16	2.5	15	45	15.4	125	16	2	2
AM2SCRB1600A125R320	●	16	3.2	15	45	15.4	125	16	2	2
AM2SCRB1600A125R400	●	16	4	15	45	15.4	125	16	2	2
AM2SCRB2000A100R100	●	20	1	20	40	18.0	100	20	2	2
AM2SCRB2000A100R160	●	20	1.6	20	40	18.0	100	20	2	2
AM2SCRB2000A100R250	●	20	2.5	20	40	18.0	100	20	2	2
AM2SCRB2000A100R320	●	20	3.2	20	40	18.0	100	20	2	2
AM2SCRB2000A100R400	●	20	4	20	40	18.0	100	20	2	2
AM2SCRB2000A125R100	●	20	1	20	50	18.0	125	20	2	2
AM2SCRB2000A125R160	●	20	1.6	20	50	18.0	125	20	2	2
AM2SCRB2000A125R250	●	20	2.5	20	50	18.0	125	20	2	2
AM2SCRB2000A125R320	●	20	3.2	20	50	18.0	125	20	2	2
AM2SCRB2000A125R400	●	20	4	20	50	18.0	125	20	2	2

2/2

AM2SCRB

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf	
			Side milling	Slotting
N Aluminium alloy	3	40000	1800	1600
	4	36000	2400	2100
	5	30000	3000	2700
	6	27000	3200	2800
	8	20000	3400	3000
	10	16000	3600	3200
	12	13000	3600	3200
	16	10000	3600	3200
	20	8000	3300	3000



1/1

1. This table shows the cutting condition with less than 4DC overhang length. If more than 4DC, spindle speed, feed rate and depth of cut should be reduced.
2. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

AM3SSRB

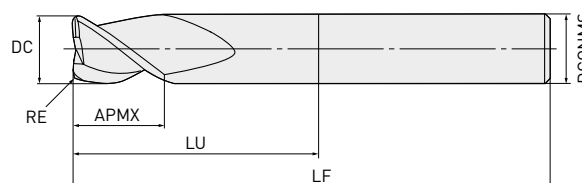


37.5°



CORNER RADIUS END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK

N



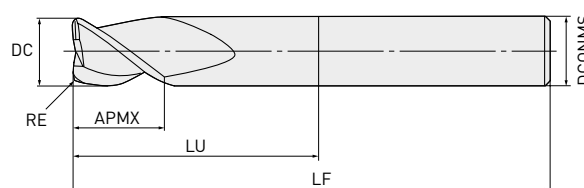
DC ≤ 12	DC > 12
0	0
-0.020	-0.030

- High efficiency machining of aluminium alloys.

Order number	Stock	DC	RE	APMX	LU	LF	DCONMS	ZEFP
AM3SSRBD1200A075R100	●	12	1	15	30	75	12	3
AM3SSRBD1200A075R160	●	12	1.6	15	30	75	12	3
AM3SSRBD1200A075R250	●	12	2.5	15	30	75	12	3
AM3SSRBD1200A075R320	●	12	3.2	15	30	75	12	3
AM3SSRBD1200A075R400	●	12	4	15	30	75	12	3
AM3SSRBD1200A100R100	●	12	1	15	35	100	12	3
AM3SSRBD1200A100R160	●	12	1.6	15	35	100	12	3
AM3SSRBD1200A100R250	●	12	2.5	15	35	100	12	3
AM3SSRBD1200A100R320	●	12	3.2	15	35	100	12	3
AM3SSRBD1200A100R400	●	12	4	15	35	100	12	3
AM3SSRBD1200A125R100	●	12	1	15	40	125	12	3
AM3SSRBD1200A125R160	●	12	1.6	15	40	125	12	3
AM3SSRBD1200A125R250	●	12	2.5	15	40	125	12	3
AM3SSRBD1200A125R320	●	12	3.2	15	40	125	12	3
AM3SSRBD1200A125R400	●	12	4	15	40	125	12	3
AM3SSRBD1600A075R100	●	16	1	15	30	75	16	3
AM3SSRBD1600A075R160	●	16	1.6	15	30	75	16	3
AM3SSRBD1600A075R250	●	16	2.5	15	30	75	16	3
AM3SSRBD1600A075R320	●	16	3.2	15	30	75	16	3
AM3SSRBD1600A075R400	●	16	4	15	30	75	16	3

1/2



AM3SSRB – CORNER RADIUS END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK

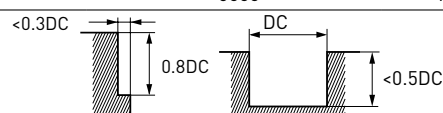
Order number	Stock	DC	RE	APMX	LU	LF	DCONMS	ZEFP
AM3SSRBD1600A100R100	●	16	1	15	40	100	16	3
AM3SSRBD1600A100R160	●	16	1.6	15	40	100	16	3
AM3SSRBD1600A100R250	●	16	2.5	15	40	100	16	3
AM3SSRBD1600A100R320	●	16	3.2	15	40	100	16	3
AM3SSRBD1600A100R400	●	16	4	15	40	100	16	3
AM3SSRBD1600A125R100	●	16	1	15	45	125	16	3
AM3SSRBD1600A125R160	●	16	1.6	15	45	125	16	3
AM3SSRBD1600A125R250	●	16	2.5	15	45	125	16	3
AM3SSRBD1600A125R320	●	16	3.2	15	45	125	16	3
AM3SSRBD1600A125R400	●	16	4	15	45	125	16	3
AM3SSRBD2000A100R100	●	20	1	20	40	100	20	3
AM3SSRBD2000A100R160	●	20	1.6	20	40	100	20	3
AM3SSRBD2000A100R250	●	20	2.5	20	40	100	20	3
AM3SSRBD2000A100R320	●	20	3.2	20	40	100	20	3
AM3SSRBD2000A100R400	●	20	4	20	40	100	20	3
AM3SSRBD2000A125R100	●	20	1	20	60	125	20	3
AM3SSRBD2000A125R160	●	20	1.6	20	60	125	20	3
AM3SSRBD2000A125R250	●	20	2.5	20	60	125	20	3
AM3SSRBD2000A125R320	●	20	3.2	20	60	125	20	3
AM3SSRBD2000A125R400	●	20	4	20	60	125	20	3
AM3SSRBD2000A150R100	●	20	1	20	85	150	20	3
AM3SSRBD2000A150R160	●	20	1.6	20	85	150	20	3
AM3SSRBD2000A150R250	●	20	2.5	20	85	150	20	3
AM3SSRBD2000A150R320	●	20	3.2	20	85	150	20	3
AM3SSRBD2000A150R400	●	20	4	20	85	150	20	3
AM3SSRBD2500A100R160	●	25	1.6	20	50	100	25	3
AM3SSRBD2500A100R250	●	25	2.5	20	50	100	25	3
AM3SSRBD2500A100R320	●	25	3.2	20	50	100	25	3
AM3SSRBD2500A100R400	●	25	4	20	50	100	25	3
AM3SSRBD2500A100R500	●	25	5	20	50	100	25	3
AM3SSRBD2500A125R160	●	25	1.6	20	65	125	25	3
AM3SSRBD2500A125R250	●	25	2.5	20	65	125	25	3
AM3SSRBD2500A125R320	●	25	3.2	20	65	125	25	3
AM3SSRBD2500A125R400	●	25	4	20	65	125	25	3
AM3SSRBD2500A125R500	●	25	5	20	65	125	25	3
AM3SSRBD2500A150R160	●	25	1.6	20	90	150	25	3
AM3SSRBD2500A150R250	●	25	2.5	20	90	150	25	3
AM3SSRBD2500A150R320	●	25	3.2	20	90	150	25	3
AM3SSRBD2500A150R400	●	25	4	20	90	150	25	3
AM3SSRBD2500A150R500	●	25	5	20	90	150	25	3

2/2

AM3SSRB

RECOMMENDED CUTTING CONDITIONS

Material	DC	n	Vf	
			Side milling	Slotting
Aluminium alloy	12	13000	5400	3200
	16	10000	5400	3200
	20	8000	5000	3000
	25	6000	4500	2800



1/1

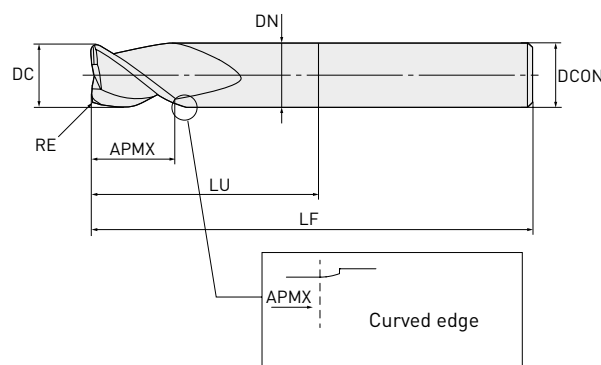
1. This table shows the cutting condition with less than 4DC overhang length. If more than 4DC, spindle speed, feed rate and depth of cut should be reduced.
2. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.
5. Vertical feed is not recommended. To enter the workpiece ramping should be used.

A3SARB



CORNER RADIUS END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK, MULTIPLE HELICAL INTERNAL THROUGH COOLANT HOLES

N



DC=12	DC>12
0	0
-0.020	-0.030



12<DCONMS<16	20<DCONMS<25
0	0
-0.011	-0.013

- Stability and reliability even when slotting, ramping and plunging.
- The cross sectional geometry of the flutes is perfect for efficient chip discharge.

Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP
A3SARB120R100N36C	●	12	1	18	36	11.4	80	12	3
A3SARB120R200N36C	●	12	2	18	36	11.4	80	12	
A3SARB120R300N36C	●	12	3	18	36	11.4	80	12	
A3SARB160R200N48C	●	16	2	24	48	15.4	90	16	
A3SARB160R300N48C	●	16	3	24	48	15.4	90	16	
A3SARB160R400N48C	●	16	4	24	48	15.4	90	16	
A3SARB200R200N55C	●	20	2	30	55	18	100	20	
A3SARB200R300N55C	●	20	3	30	55	18	100	20	
A3SARB200R400N55C	●	20	4	30	55	18	100	20	
A3SARB250R200N55C	●	25	2	37.5	55	23	100	25	
A3SARB250R300N55C	●	25	3	37.5	55	23	100	25	
A3SARB250R400N55C	●	25	4	37.5	55	23	100	25	
A3SARB250R500N55C	●	25	5	37.5	55	23	100	25	

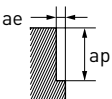
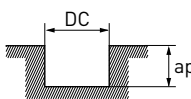
1/1

A3SARB

RECOMMENDED CUTTING CONDITIONS

HIGH EFFICIENCY CONDITIONS

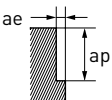
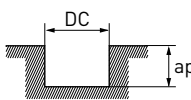
Material		DC	n	Vf	ae	ap	n	Vf	ap
N	Aluminium alloy	12	33000	15000	6	12	33000	15000	6
		16	33000	20000	8	16	33000	20000	8
		20	33000	26000	10	20	33000	26000	10
		25	33000	32000	12.5	25	33000	32000	12.5

1/1

GENERAL PURPOSE CONDITIONS

Material		DC	n	Vf	ae	ap	n	Vf	ap
N	Aluminium alloy	12	16000	7200	6	12	33000	7200	6
		16	12000	7200	8	16	33000	7200	8
		20	9500	7400	10	20	33000	7400	10
		25	7600	7300	12.5	25	33000	7300	12.5

1/1

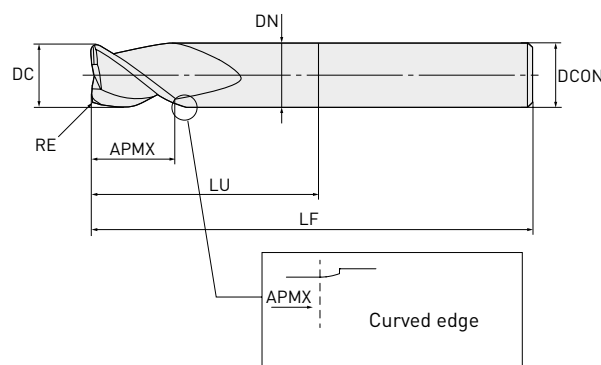
1. Water-soluble cutting fluid is recommended.
2. Climb milling is recommended for side cutting.
3. When machining with a large tool length protrusion, adjust the the speed, feed and depth of cut as necessary.
4. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately within the range described in the above table, or reduce the depth and width of cut.

DLC3SARB



CORNER RADIUS END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK, MULTIPLE HELICAL INTERNAL THROUGH COOLANT HOLES

N



DC=12	DC>12
0	0
-0.020	-0.030



12<DCONMS<16	20<DCONMS<25
0	0
-0.011	-0.013

- Stability and reliability even when slotting, ramping and plunging.
- The cross sectional geometry of the flutes is perfect for efficient chip discharge.

Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP
DLC3SARB120R100N36C	★	12	1	18	36	11.4	80	12	3
DLC3SARB120R200N36C	★	12	2	18	36	11.4	80	12	
DLC3SARB120R300N36C	★	12	3	18	36	11.4	80	12	
DLC3SARB160R200N48C	★	16	2	24	48	15.4	90	16	
DLC3SARB160R300N48C	★	16	3	24	48	15.4	90	16	
DLC3SARB160R400N48C	★	16	4	24	48	15.4	90	16	
DLC3SARB200R200N55C	★	20	2	30	55	18	100	20	
DLC3SARB200R300N55C	★	20	3	30	55	18	100	20	
DLC3SARB200R400N55C	★	20	4	30	55	18	100	20	
DLC3SARB250R200N55C	★	25	2	37.5	55	23	100	25	
DLC3SARB250R300N55C	★	25	3	37.5	55	23	100	25	
DLC3SARB250R400N55C	★	25	4	37.5	55	23	100	25	
DLC3SARB250R500N55C	★	25	5	37.5	55	23	100	25	

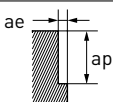
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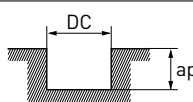
DLC3SARB

RECOMMENDED CUTTING CONDITIONS

HIGH EFFICIENCY CONDITIONS

Material		DC	n	Vf	ae	ap			
							n	Vf	ap
N	Aluminium alloy	12	33000	15000	6	12	33000	15000	6
		16	33000	20000	8	16	33000	20000	8
		20	33000	26000	10	20	33000	26000	10
		25	33000	32000	12.5	25	33000	32000	12.5

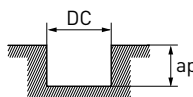
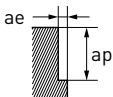




1/1

GENERAL PURPOSE CONDITIONS

Material									
DC		n	Vf	ae	ap	n		Vf	ap
N	Aluminium alloy	12	16000	7200	6	12	33000	7200	6
		16	12000	7200	8	16	33000	7200	8
		20	9500	7400	10	20	33000	7400	10
		25	7600	7300	12.5	25	33000	7300	12.5



1/1

1. Water-soluble cutting fluid is recommended.
2. Climb milling is recommended for side cutting.
3. When machining with a large tool length protrusion, adjust the speed, feed and depth of cut as necessary.
4. If the rigidity of the machine or the workpiece materials installation is very low, or chattering and noise are generated, reduce the revolution and feed rate proportionately within the range described in the above table, or reduce the depth and width of cut.

AMSR



37.5°

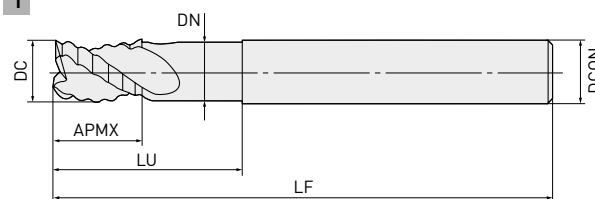


ROUGHING END MILL, SHORT CUT LENGTH, 3 FLUTE, RELIEVED NECK

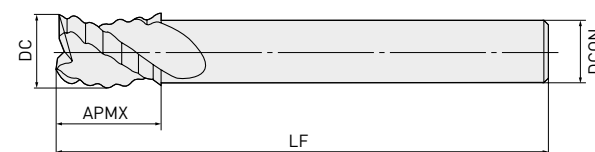
N



1



2



- 3 flute uncoated end mill for rough machining aluminium alloys.

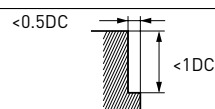
Order number	Stock	DC	APMX	LU	DN	LF	DCONMS	ZEFP	Type
AMSRD1000	●	10	12	25	9.4	75	10	3	1
AMSRD1200	●	12	15	30	11.4	75	12	3	1
AMSRD1600	●	16	18	35	15.4	100	16	3	1
AMSRD1800	●	18	22	—	—	100	16	3	2
AMSRD2000	●	20	25	50	18.0	125	20	3	1
AMSRD2200	●	22	25	—	—	125	20	3	2
AMSRD2500	●	25	30	60	23.0	125	25	3	1
									1/1

AMSR

RECOMMENDED CUTTING CONDITIONS

SHOULDER MILLING

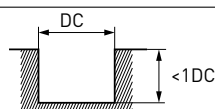
Material	DC	n	Vf
N Aluminium alloy A7075	10	19000	8600
	12	16000	8200
	16	12000	7600
	18	10500	7200
	20	9500	7100
	22	8500	6900
	25	7500	6800
Aluminium cast AC4B	10	9500	3400
	12	8000	3200
	16	6000	3100
	18	5300	2900
	20	4800	2900
	22	4300	2800
	25	3800	2700



1/1

SLOTING

Material	DC	n	Vf
N Aluminium alloy A7075	10	19000	6800
	12	16000	6500
	16	12000	6100
	18	10500	5800
	20	9500	5700
	22	8500	5500
	25	7500	5400
Aluminium cast AC4B	10	9500	2700
	12	8000	2600
	16	6000	2400
	18	5300	2400
	20	4800	2300
	22	4300	2200
	25	3800	2200

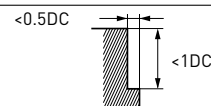


1/1

1. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately, or set a smaller depth of cut.
2. If the depth of cut is shallow, the revolution and feed rate can be increased.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

AMSR**USING A HIGH SPEED, HIGH RIGIDITY MACHINING CENTRE****SHOULDER MILLING**

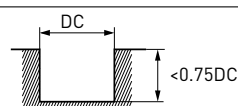
Material	DC	n	Vf
N Aluminium alloy A7075	10	30000	11000
	12	30000	12000
	16	24000	12000
	18	21000	12000
	20	19000	11000
	22	17000	11000
	25	15000	11000
Cast aluminium AC4B	10	19000	5400
	12	16000	5300
	16	12000	4900
	18	10500	4700
	20	9500	4600
	22	8500	4300
	25	7500	4300



1/1

SLOTTING

Material	DC	n	Vf
N Aluminium alloy A7075	10	30000	8600
	12	30000	9900
	16	24000	9700
	18	21000	9500
	20	19000	9100
	22	17000	8700
	25	15000	8600
Cast aluminium AC4B	10	19000	4300
	12	16000	4300
	16	12000	4000
	18	10500	3800
	20	9500	3700
	22	8500	3400
	25	7500	3400



1/1

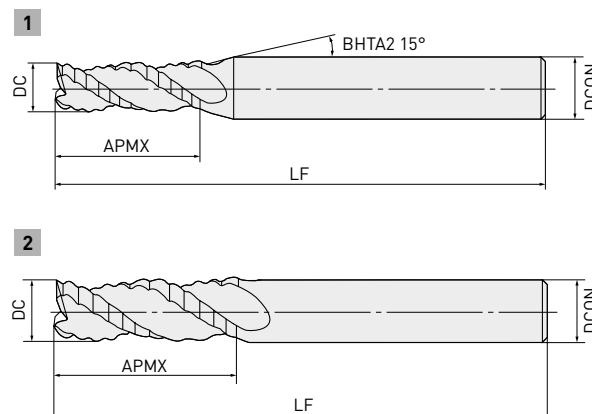
1. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately, or set a smaller depth of cut.
2. If the depth of cut is shallow, the revolution and feed rate can be increased.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

AMMR



ROUGHING END MILL, MEDIUM CUT LENGTH, 3 FLUTE, RELIEVED NECK

N



- 3 flute uncoated end mill for roughing aluminium alloy.

Order number	Stock	DC	APMX	LF	DCONMS	ZEFP	Type
AMMRD0300	□	3	8	50	6	3	1
AMMRD0400	□	4	11	50	6	3	1
AMMRD0500	●	5	13	50	6	3	1
AMMRD0600	●	6	13	50	6	3	2
AMMRD0800	●	8	19	60	8	3	2
AMMRD1000	●	10	22	75	10	3	2
AMMRD1200	●	12	26	75	12	3	2
AMMRD1600	●	16	32	100	16	3	2
AMMRD2000	●	20	38	125	20	3	2
AMMRD2500	●	25	45	125	25	3	2

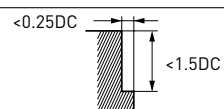
1/1

AMMR

RECOMMENDED CUTTING CONDITIONS

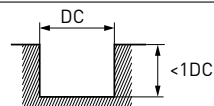
SHOULDER MILLING

Material	DC	n	Vf
N Aluminium alloy A7075	3	40000	2700
	4	36000	2700
	5	30000	5400
	6	27000	6100
	8	20000	6000
	10	16000	5800
	12	13000	5300
	16	10000	5100
	20	8000	4800
	25	6400	4600
Cast aluminium AC4B	3	25000	1100
	4	20000	1100
	5	16000	2200
	6	13000	2300
	8	10000	2400
	10	8000	2300
	12	6500	2100
	16	5000	2000
	20	4000	1900
	25	3200	1800



AMMR**SLOTTING**

Material	DC	n	Vf
Aluminium alloy A7075	3	30000	1800
	4	24000	2200
	5	19000	2300
	6	16000	2400
	8	12000	2500
	10	9500	2600
Cast aluminium AC4B	3	16000	700
	4	12000	900
	5	10000	900
	6	8000	1000
	8	6000	1000
	10	5000	1100



1/1

1. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately, or set a smaller depth of cut.
2. If the depth of cut is shallow, the revolution and feed rate can be increased.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

AMSRRB

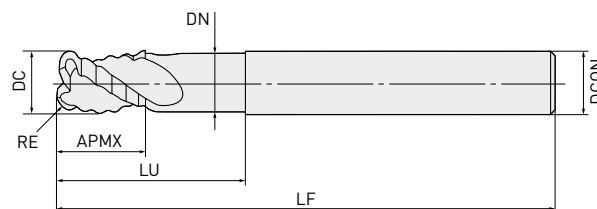


37.5°



ROUGHING END MILL, CORNER RADIUS, 3 FLUTE, SHORT CUT LENGTH, RELIEVED NECK

N



- High productivity roughing of aluminium alloys.

Order number	Stock	DC	RE	APMX	LU	DN	LF	DCONMS	ZEFP
AMSRRBD1000R100	●	10	1	12	25	9.4	75	10	3
AMSRRBD1000R200	□	10	2	12	25	9.4	75	10	
AMSRRBD1200R100	●	12	1	15	30	11.4	75	12	
AMSRRBD1200R200	□	12	2	15	30	11.4	75	12	
AMSRRBD1600R200	●	16	2	18	35	15.4	100	16	
AMSRRBD1600R300	□	16	3	18	35	15.4	100	16	
AMSRRBD1600R320	●	16	3.2	18	35	15.4	100	16	
AMSRRBD1600R400	●	16	4	18	35	15.4	100	16	
AMSRRBD2000R200	●	20	2	25	50	18.0	125	20	
AMSRRBD2000R300	□	20	3	25	50	18.0	125	20	
AMSRRBD2000R320	●	20	3.2	25	50	18.0	125	20	
AMSRRBD2000R400	●	20	4	25	50	18.0	125	20	
AMSRRBD2000R500	●	20	5	25	50	18.0	125	20	
AMSRRBD2500R300	●	25	3	30	60	23.0	125	25	
AMSRRBD2500R320	●	25	3.2	30	60	23.0	125	25	
AMSRRBD2500R400	●	25	4	30	60	23.0	125	25	
AMSRRBD2500R500	□	25	5	30	60	23.0	125	25	

1/1

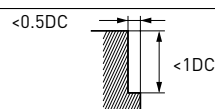


AMSRRB

RECOMMENDED CUTTING CONDITIONS

SHOULDER MILLING

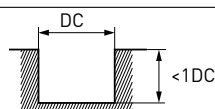
Material	DC	n	Vf
N Aluminium alloy A7075	10	19000	8600
	12	16000	8200
	16	12000	7600
	18	10500	7200
	20	9500	7100
	22	8500	6900
	25	7500	6800
Cast aluminium AC4B	10	9500	3400
	12	8000	3200
	16	6000	3100
	18	5300	2900
	20	4800	2900
	22	4300	2800
	25	3800	2700



1/1

SLOTING

Material	DC	n	Vf
N Aluminium alloy A7075	10	19000	6800
	12	16000	6500
	16	12000	6100
	18	10500	5800
	20	9500	5700
	22	8500	5500
	25	7500	5400
Aluminium cast AC4B	10	9500	2700
	12	8000	2600
	16	6000	2400
	18	5300	2400
	20	4800	2300
	22	4300	2200
	25	3800	2200



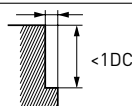
1/1

1. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately, or set a smaller depth of cut.
2. If the depth of cut is shallow, the revolution and feed rate can be increased.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

AMSR**USING A HIGH SPEED, HIGH RIGIDITY MACHINING CENTRE****SHOULDER MILLING**

Material	DC	n	Vf
N Aluminium alloy A7075	10	30000	11000
	12	30000	12000
	16	24000	12000
	18	21000	12000
	20	19000	11000
	22	17000	11000
	25	15000	11000
Aluminium cast AC4B	10	19000	5400
	12	16000	5300
	16	12000	4900
	18	10500	4700
	20	9500	4600
	22	8500	4300
	25	7500	4300

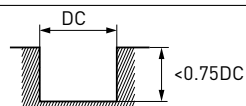
<0.5DC



1/1

SLOTTING

Material	DC	n	Vf
N Aluminium alloy A7075	10	30000	8600
	12	30000	9900
	16	24000	9700
	18	21000	9500
	20	19000	9100
	22	17000	8700
	25	15000	8600
Aluminium cast AC4B	10	19000	4300
	12	16000	4300
	16	12000	4000
	18	10500	3800
	20	9500	3700
	22	8500	3400
	25	7500	3400



1/1

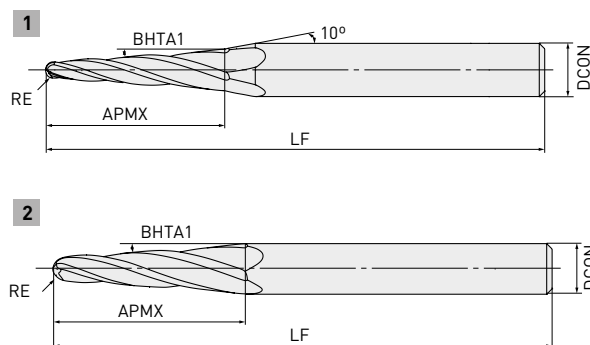
1. If the rigidity of the machine or the workpiece installation is very low, or chattering and noise are generated, please reduce the revolution and the feed rate proportionately, or set a smaller depth of cut.
2. If the depth of cut is shallow, the revolution and feed rate can be increased.
3. Water soluble cutting fluid is recommended.
4. Climb cutting is recommended for side milling.

C4LATB



CONICAL BALL NOSE END MILL, 4 CUTTING EDGES

N



	RE < 2
	± 0.010
	± 5°
	DCONMS = 6 DCONMS = 8
	0 - 0.008 0 - 0.009

Order number	Stock	RE	APMX	LF	DCONMS	BHTA1	ZEFP	Type
C4LATBR050T040AP20	●	0.5	20	70	6	4°	4	1
C4LATBR100T040AP20	●	1	20	70	6	4°	4	1
C4LATBR150T040AP20	●	1.5	20	75	8	4°	4	1
C4LATBR200T040AP30	●	2	30	75	8	4°	4	2

1/1

1. Modified and specially designed taper ball end mills available. Please contact your Mitsubishi dealer for details.



DLC4LATB

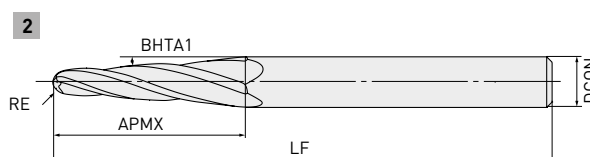
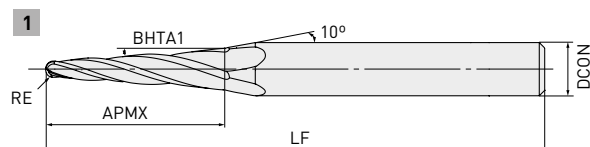
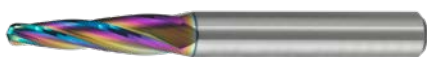


20°



CONICAL BALL NOSE END MILL, 4 CUTTING EDGES

N



RE < 2

± 0.010



BHTA1

± 5°



DCONMS = 6 DCONMS = 8

0 - 0.008 0 - 0.009

Order number	Stock	RE	APMX	LF	DCONMS	BHTA1	ZEFP	Type
DLC4LATBR050T040AP20	●	0.5	20	70	6	4°	4	1
DLC4LATBR100T040AP20	●	1	20	70	6	4°	4	1
DLC4LATBR150T040AP20	●	1.5	20	75	8	4°	4	1
DLC4LATBR200T040AP30	●	2	30	75	8	4°	4	2

1/1

1. Modified and special design taper ball end mills available. Please contact your Mitsubishi dealer for details.



C4LATB/ DLC4LATB

RECOMMENDED CUTTING CONDITIONS

SLOTTING

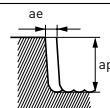
Material	RE	n	Vf	ap
N Aluminium alloy	R 0.5	20.000	600	10
	R 1	20.000	2.800	10
	R 1.5	20.000	4.000	10
	R 2	20.000	4.000	15



1/1

SIDE MILLING

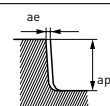
Material	RE	n	Vf	ap	ae
N Aluminium alloy	R 0.5	20.000	2.000	15	0.75
	R 1	20.000	4.000	15	1.5
	R 1.5	20.000	5.200	15	2.25
	R 2	20.000	5.200	23	3



1/1

SIDE MILLING (FINISHING)

Material	RE	n	Vf	ap	ae
N Aluminium alloy	R 0.5	20.000	800	18	0.1
	R 1	20.000	2.000	18	0.2
	R 1.5	20.000	2.400	18	0.3
	R 2	20.000	2.400	27	0.3



1/1

1. Water soluble cutting fluid is recommended. Down cutting is recommended for side milling.

A3SA / A3SARB

CUTTING PERFORMANCE

COMPARISON OF FRACTURE RESISTANCE - MACHINING OF SLOTS IN A7050

Utilising internal coolant and optimised cutting edge geometry enables double the efficiency levels of conventional products.

Material	A7050
Tool	A3SA120N36C
DC (mm)	Ø 12
Vc (m/min)	100
ap (mm)	12
Overhang length (mm)	36
Cutting mode	Internal coolant (Water-soluble Coolants)

Feed rate (mm/min)	2550	3020	3500
Feed per tooth (mm/t.)	0.32	0.38	0.44

A3SA



A3SARB

Good wall surface

Conventional A



Good wall surface

Breakage due to chip clogging

Conventional B



Breakage due to chip clogging

A3SA / A3SARB

CUTTING PERFORMANCE

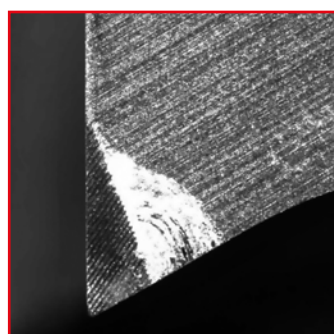
COMPARISON OF FRACTURE RESISTANCE - PLUNGE MACHINING OF A7050

Higher feed rates than conventional products brings greater machining efficiencies.

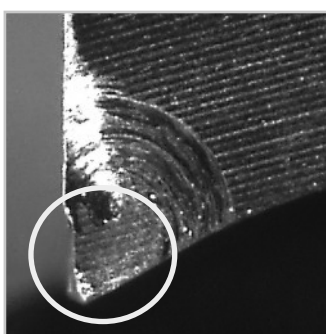
Material	A7050
Tool	A3SA120N36C
DC (mm)	Ø 12
Vc (m/min)	300
ap (mm)	12
Overhang length (mm)	36
Cutting mode	Internal coolant (Water-soluble Coolants)

Feed rate (mm/min)	1040	1280	1520
Feed per Rev. (mm/rev)	0.13	0.16	0.19
A3SA			
A3SARB			
Good wall surface			

AFTER F = 1520 MM/MIN, FZ = 0.19 MM/REV PLUNGING



A3SA / A3SARB



Conventional

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