



C.N.C ÁNH KIM

Carbide Endmills



C.N.C ÁNH KIM



CARBIDE ENDMILLS

K-HARD TYPE [52-72 HRC]

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A-HARD TYPE [52-60 HRC]

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A-SPEED TYPE [52 HRC]

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A-COPPER TYPE

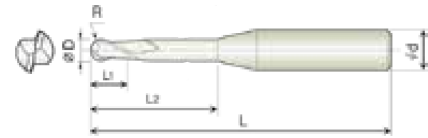
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A-ABS TYPE

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2KRB, Ball

2 Flutes Rib Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN-S coating.

Size	D Tolerance
D \geq Ø5	+0~-0.01mm
Ø6-Ø12	+0~-0.015mm

Unit: mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 001 002 S04	R0.05 X 0.1	0.1	0.2	45	4
2KRB 001 003 S04	R0.05 X 0.1	0.1	0.3	45	4
2KRB 001 005 S04	R0.05 X 0.1	0.1	0.5	45	4
2KRB 002 006 S04	R0.1 X 0.2	0.2	0.6	45	4
2KRB 002 010 S04	R0.1 X 0.2	0.2	1	45	4
2KRB 002 015 S04	R0.1 X 0.2	0.2	1.5	45	4
2KRB 003 010 S04	R0.15 X 0.3	0.3	1	45	4
2KRB 003 015 S04	R0.15 X 0.3	0.3	1.5	45	4
2KRB 003 020 S04	R0.15 X 0.3	0.3	2	45	4
2KRB 003 025 S04	R0.15 X 0.3	0.3	2.5	45	4
2KRB 003 030 S04	R0.15 X 0.3	0.3	3	45	4
2KRB 004 010 S04	R0.2 X 0.4	0.4	1	45	4
2KRB 004 015 S04	R0.2 X 0.4	0.4	1.5	45	4
2KRB 004 020 S04	R0.2 X 0.4	0.4	2	45	4
2KRB 004 025 S04	R0.2 X 0.4	0.4	2.5	45	4
2KRB 004 030 S04	R0.2 X 0.4	0.4	3	45	4
2KRB 004 040 S04	R0.2 X 0.4	0.4	4	45	4
2KRB 004 050 S04	R0.2 X 0.4	0.4	5	45	4
2KRB 005 010 S04	R0.25 X 0.5	0.5	1	45	4
2KRB 005 015 S04	R0.25 X 0.5	0.5	1.5	45	4
2KRB 005 020 S04	R0.25 X 0.5	0.5	2	45	4
2KRB 005 025 S04	R0.25 X 0.5	0.5	2.5	45	4
2KRB 005 030 S04	R0.25 X 0.5	0.5	3	45	4
2KRB 005 040 S04	R0.25 X 0.5	0.5	4	45	4
2KRB 005 050 S04	R0.25 X 0.5	0.5	5	45	4
2KRB 005 060 S04	R0.25 X 0.5	0.5	6	45	4
2KRB 005 080 S04	R0.25 X 0.5	0.5	8	45	4
2KRB 006 020 S04	R0.3 X 0.6	0.6	2	45	4
2KRB 006 030 S04	R0.3 X 0.6	0.6	3	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 006 040 S04	R0.3 X 0.6	0.6	4	45	4
2KRB 006 050 S04	R0.3 X 0.6	0.6	5	45	4
2KRB 006 060 S04	R0.3 X 0.6	0.6	6	45	4
2KRB 006 080 S04	R0.3 X 0.6	0.6	8	45	4
2KRB 006 100 S04	R0.3 X 0.6	0.6	10	45	4
2KRB 008 020 S04	R0.4 X 0.8	0.8	2	45	4
2KRB 008 030 S04	R0.4 X 0.8	0.8	3	45	4
2KRB 008 040 S04	R0.4 X 0.8	0.8	4	45	4
2KRB 008 050 S04	R0.4 X 0.8	0.8	5	45	4
2KRB 008 060 S04	R0.4 X 0.8	0.8	6	45	4
2KRB 008 080 S04	R0.4 X 0.8	0.8	8	45	4
2KRB 008 100 S04	R0.4 X 0.8	0.8	10	45	4
2KRB 008 120 S04	R0.4 X 0.8	0.8	12	45	4
2KRB 010 030 S04	R0.5 X 1	1	3	45	4
2KRB 010 040 S04	R0.5 X 1	1	4	45	4
2KRB 010 050 S04	R0.5 X 1	1	5	45	4
2KRB 010 060 S04	R0.5 X 1	1	6	45	4
2KRB 010 070 S04	R0.5 X 1	1	7	45	4
2KRB 010 080 S04	R0.5 X 1	1	8	45	4
2KRB 010 090 S04	R0.5 X 1	1	9	45	4
2KRB 010 100 S04	R0.5 X 1	1	10	45	4
2KRB 010 120 S04	R0.5 X 1	1	12	45	4
2KRB 010 140 S04	R0.5 X 1	1	14	50	4
2KRB 010 160 S04	R0.5 X 1	1	16	50	4
2KRB 010 180 S04	R0.5 X 1	1	18	50	4
2KRB 010 200 S04	R0.5 X 1	1	20	50	4
2KRB 012 040 S04	R0.6 X 1.2	1.2	4	45	4
2KRB 012 060 S04	R0.6 X 1.2	1.2	6	45	4
2KRB 012 080 S04	R0.6 X 1.2	1.2	8	45	4



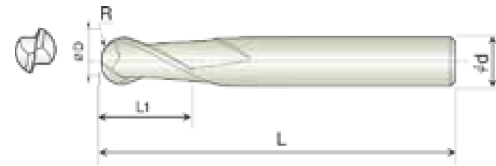
005R-2.5R 3R-6R

Unit : mm

2KRB, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 012 100 S04	R0.6 X 1.2	1.2	10	45	4
2KRB 012 120 S04	R0.6 X 1.2	1.2	12	45	4
2KRB 015 040 S04	R0.75 X 1.5	1.5	4	45	4
2KRB 015 060 S04	R0.75 X 1.5	1.5	6	45	4
2KRB 015 080 S04	R0.75 X 1.5	1.5	8	45	4
2KRB 015 100 S04	R0.75 X 1.5	1.5	10	45	4
2KRB 015 120 S04	R0.75 X 1.5	1.5	12	45	4
2KRB 015 140 S04	R0.75 X 1.5	1.5	14	50	4
2KRB 015 160 S04	R0.75 X 1.5	1.5	16	50	4
2KRB 015 180 S04	R0.75 X 1.5	1.5	18	50	4
2KRB 015 200 S04	R0.75 X 1.5	1.5	20	50	4
2KRB 020 060 S04	R1.0 X 2	2	6	45	4
2KRB 020 080 S04	R1.0 X 2	2	8	45	4
2KRB 020 100 S04	R1.0 X 2	2	10	45	4
2KRB 020 120 S04	R1.0 X 2	2	12	45	4
2KRB 020 140 S04	R1.0 X 2	2	14	50	4
2KRB 020 160 S04	R1.0 X 2	2	16	50	4
2KRB 020 180 S04	R1.0 X 2	2	18	50	4
2KRB 020 200 S04	R1.0 X 2	2	20	50	4
2KRB 020 250 S04	R1.0 X 2	2	25	60	4
2KRB 020 300 S04	R1.0 X 2	2	30	70	4
2KRB 025 080 S04	R1.25 X 2.5	2.5	8	45	4
2KRB 025 100 S04	R1.25 X 2.5	2.5	10	45	4
2KRB 025 120 S04	R1.25 X 2.5	2.5	12	45	4
2KRB 025 160 S04	R1.25 X 2.5	2.5	16	50	4
2KRB 025 200 S04	R1.25 X 2.5	2.5	20	50	4
2KRB 030 080 S06	R1.5 X 3	3	8	50	6
2KRB 030 100 S06	R1.5 X 3	3	10	50	6
2KRB 030 120 S06	R1.5 X 3	3	12	50	6
2KRB 030 140 S06	R1.5 X 3	3	14	60	6
2KRB 030 160 S06	R1.5 X 3	3	16	60	6
2KRB 030 180 S06	R1.5 X 3	3	18	60	6
2KRB 030 200 S06	R1.5 X 3	3	20	60	6
2KRB 030 250 S06	R1.5 X 3	3	25	65	6
2KRB 030 300 S06	R1.5 X 3	3	30	70	6
2KRB 030 350 S06	R1.5 X 3	3	35	80	6
2KRB 040 100 S06	R2.0 X 4	4	10	50	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2KRB 040 120 S06	R2.0 X 4	4	12	50	6
2KRB 040 160 S06	R2.0 X 4	4	16	60	6
2KRB 040 200 S06	R2.0 X 4	4	20	60	6
2KRB 040 250 S06	R2.0 X 4	4	25	65	6
2KRB 040 300 S06	R2.0 X 4	4	30	70	6
2KRB 040 350 S06	R2.0 X 4	4	35	80	6
2KRB 040 400 S06	R2.0 X 4	4	40	80	6
2KRB 050 120 S06	R2.5 X 5	5	12	50	6
2KRB 050 300 S06	R2.5 X 5	5	30	70	6
2KRB 060 150 S06	R3.0 X 6	7	15	60	6
2KRB 060 200 060	R3.0 X 6	6	20	60	6
2KRB 060 300 070	R3.0 X 6	6	30	70	6
2KRB 080 150 065	R4.0 X 8	8	15	65	8
2KRB 080 200 060	R4.0 X 8	8	20	60	8
2KRB 080 300 080	R4.0 X 8	8	30	80	8
2KRB 100 200 060	R5.0 X 10	10	20	60	10
2KRB 100 250 070	R5.0 X 10	10	25	70	10
2KRB 100 350 100	R5.0 X 10	10	35	100	10
2KRB 120 300 080	R6.0 X 12	12	30	80	12
2KRB 120 400 110	R6.0 X 12	12	40	110	12



2KCB, Ball

2 Flutes Standard Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN-S coating.

Size	D Tolerance
D ≤ Ø5	+0~-0.01
Ø6-Ø12	+0~-0.015

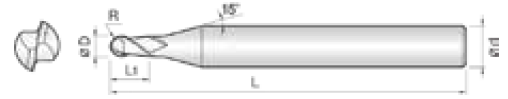
Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R × D	L1	L	d
2KCB 001 002 S04	R0.05 X 0.1	0.2	45	4
2KCB 002 004 S04	R0.1 X 0.2	0.4	45	4
2KCB 003 006 S04	R0.15 X 0.3	0.6	45	4
2KCB 004 008 S04	R0.2 X 0.4	0.8	45	4
2KCB 005 010 S04	R0.25 X 0.5	1	45	4
2KCB 006 012 S04	R0.3 X 0.6	1.2	45	4
2KCB 007 015 S04	R0.35 X 0.7	1.5	45	4
2KCB 008 015 S04	R0.4 X 0.8	1.5	45	4
2KCB 010 020 S04	R0.5 X 1	2	50	4
2KCB 010 020 S06	R0.5 X 1	2	50	6
2KCB 012 025 S04	R0.6 X 1.2	2.5	50	4
2KCB 015 040 S04	R0.75 X 1.5	4	50	4
2KCB 015 040 S06	R0.75 X 1.5	4	50	6
2KCB 020 050 S04	R1.0 X 2	5	50	4
2KCB 020 050 S06	R1.0 X 2	5	60	6
2KCB 025 060 S06	R1.25 X 2.5	6	60	6
2KCB 030 080 S03	R1.5 X 3	8	60	3
2KCB 030 080 S04	R1.5 X 3	8	60	4
2KCB 030 080 S06	R1.5 X 3	8	80	6
2KCB 035 080 S06	R1.75 X 3.5	8	60	6
2KCB 040 080 S04	R2.0 X 4	8	80	4
2KCB 040 080 S06	R2.0 X 4	8	70	6
2KCB 045 100 S06	R2.25 X 4.5	10	70	6
2KCB 050 100 S06	R2.5 X 5	10	80	6
2KCB 055 120 S06	R2.75 X 5.5	12	80	6
2KCB 060 120 090	R3.0 X 6	12	90	6
2KCB 070 140 S08	R3.5 X 7	14	100	8
2KCB 080 140 100	R4.0 X 8	14	100	8
2KCB 090 180 S10	R4.5 X 9	18	100	10
2KCB 100 180 100	R5.0 X 10	18	100	10
2KCB 120 220 110	R6.0 X 12	22	110	12

2&3 Flutes Short Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

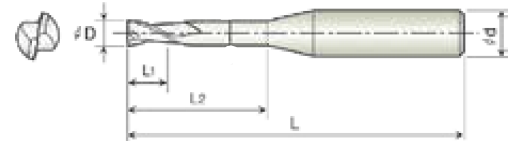
- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN-S coating.



Size	D Tolerance
D ≤ Ø5	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R × D	L1	L	d
2KSB 001 001 S04	R0.05 X 0.1	0.1	40	4
2KSB 002 002 S04	R0.1 X 0.2	0.2	40	4
2KSB 003 003 S04	R0.15 X 0.3	0.3	40	4
2KSB 004 004 S04	R0.2 X 0.4	0.4	40	4
2KSB 005 005 S04	R0.25 X 0.5	0.5	40	4
2KSB 006 006 S04	R0.3 X 0.6	0.6	40	4
2KSB 007 007 S04	R0.35 X 0.7	0.7	40	4
2KSB 008 008 S04	R0.4 X 0.8	0.8	40	4
2KSB 009 009 S04	R0.45 X 0.9	0.9	40	4
2KSB 010 015 S06	R0.5 X 1	1.5	40	6
2KSB 015 023 S06	R0.75 X 1.5	2.3	40	6
2KSB 020 030 S06	R1.0 X 2	3	45	6
2KSB 030 045 S06	R1.5 X 3	4.5	45	6
2KSB 040 060 S06	R2.0 X 4	6	45	6
2KSB 050 075 S06	R2.5 X 5	7.5	50	6
2KSB 060 080 060	R3.0 X 6	8	60	6
2KSB 080 110 060	R4.0 X 8	11	60	8
2KSB 100 130 060	R5.0 X 10	13	60	10
2KSB 120 150 060	R6.0 X 12	15	60	12
3KSB 010 015 S06	R0.5 X 1	1.5	40	6
3KSB 020 030 S06	R1.0 X 2	3	45	6
3KSB 030 045 S06	R1.5 X 3	4.5	45	6
3KSB 040 060 S06	R2.0 X 4	6	45	6
3KSB 050 075 S06	R2.5 X 5	7.5	50	6
3KSB 060 080 060	R3.0 X 6	8	60	6
3KSB 080 110 060	R4.0 X 8	11	60	8
3KSB 100 130 060	R5.0 X 10	13	60	10
3KSB 120 150 060	R6.0 X 12	15	60	12



2KRE, Square

2 Flutes Square Rib End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN-S coating.

Size	D Tolerance
∅0.1~∅0.5	+0~-0.005
∅0.6~∅0.9	+0~-0.01

Unit : mm

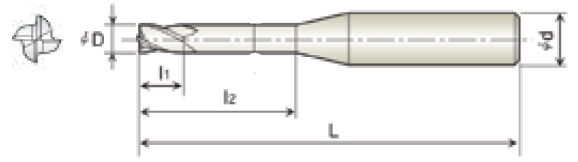
Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
2KRE 001 003 S04	0.1	0.15	0.3	45	4		
2KRE 001 005 S04	0.1	0.15	0.5	45	4		
2KRE 002 005 S04	0.2	0.3	0.5	45	4		
2KRE 002 010 S04	0.2	0.3	1	45	4		
2KRE 003 005 S04	0.3	0.45	0.5	45	4		
2KRE 003 010 S04	0.3	0.45	1	45	4		
2KRE 003 015 S04	0.3	0.45	1.5	45	4		
2KRE 003 020 S04	0.3	0.45	2	45	4		
2KRE 003 025 S04	0.3	0.45	2.5	45	4		
2KRE 003 030 S04	0.3	0.45	3	45	4		
2KRE 004 010 S04	0.4	0.6	1	45	4		
2KRE 004 015 S04	0.4	0.6	1.5	45	4		
2KRE 004 020 S04	0.4	0.6	2	45	4		
2KRE 004 025 S04	0.4	0.6	2.5	45	4		
2KRE 004 030 S04	0.4	0.6	3	45	4		
2KRE 004 035 S04	0.4	0.6	3.5	45	4		
2KRE 004 040 S04	0.4	0.6	4	45	4		
2KRE 005 010 S04	0.5	0.7	1	45	4		
2KRE 005 020 S04	0.5	0.7	2	45	4		
2KRE 005 030 S04	0.5	0.7	3	45	4		
2KRE 005 040 S04	0.5	0.7	4	45	4		
2KRE 005 050 S04	0.5	0.7	5	45	4		
2KRE 005 060 S04	0.5	0.7	6	45	4		
2KRE 005 080 S04	0.5	0.7	8	45	4		
2KRE 006 020 S04	0.6	0.9	2	45	4		
2KRE 006 030 S04	0.6	0.9	3	45	4		
2KRE 006 040 S04	0.6	0.9	4	45	4		

Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
2KRE 006 050 S04	0.6	0.9	5	45	4		
2KRE 006 060 S04	0.6	0.9	6	45	4		
2KRE 006 080 S04	0.6	0.9	8	45	4		
2KRE 006 100 S04	0.6	0.9	10	45	4		
2KRE 007 020 S04	0.7	1	2	45	4		
2KRE 007 040 S04	0.7	1	4	45	4		
2KRE 007 060 S04	0.7	1	6	45	4		
2KRE 007 080 S04	0.7	1	8	45	4		
2KRE 007 100 S04	0.7	1	10	45	4		
2KRE 007 120 S04	0.7	1	12	45	4		
2KRE 008 020 S04	0.8	1.2	2	45	4		
2KRE 008 030 S04	0.8	1.2	3	45	4		
2KRE 008 040 S04	0.8	1.2	4	45	4		
2KRE 008 050 S04	0.8	1.2	5	45	4		
2KRE 008 060 S04	0.8	1.2	6	45	4		
2KRE 008 080 S04	0.8	1.2	8	45	4		
2KRE 008 100 S04	0.8	1.2	10	45	4		
2KRE 008 120 S04	0.8	1.2	12	45	4		
2KRE 009 060 S04	0.9	1.3	6	45	4		
2KRE 009 080 S04	0.9	1.3	8	45	4		
2KRE 009 100 S04	0.9	1.3	10	45	4		

4 Flutes Square Rib End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN-S coating.



Size	D Tolerance
φ1~φ5	+0~-0.01
φ6~φ12	+0~-0.015

Unit : mm

Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
4KRE010030S04	1	1.5	3	45	4		
4KRE010040S04	1	1.5	4	45	4		
4KRE010060S04	1	1.5	6	45	4		
4KRE010080S04	1	1.5	8	45	4		
4KRE010100S04	1	1.5	10	45	4		
4KRE015040S04	1.5	2.3	4	45	4		
4KRE015060S04	1.5	2.3	6	45	4		
4KRE015080S04	1.5	2.3	8	45	4		
4KRE015100S04	1.5	2.3	10	45	4		
4KRE015120S04	1.5	2.3	12	45	4		
4KRE015160S04	1.5	2.3	16	50	4		
4KRE020060S04	2	3	6	45	4		
4KRE020080S04	2	3	8	45	4		
4KRE020100S04	2	3	10	45	4		
4KRE020120S04	2	3	12	45	4		
4KRE020160S04	2	3	16	50	4		
4KRE020200S04	2	3	20	50	4		
4KRE030080S06	3	4.5	8	50	6		
4KRE030100S06	3	4.5	10	50	6		
4KRE030120S06	3	4.5	12	50	6		
4KRE030160S06	3	4.5	16	60	6		
4KRE030200S06	3	4.5	20	60	6		
4KRE040100S06	4	6	10	50	6		
4KRE040120S06	4	6	12	50	6		
4KRE040160S06	4	6	16	60	6		
4KRE040200S06	4	6	20	60	6		
4KRE040250S06	4	6	25	65	6		

Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
4BRE050160S06	5	8	16	60	6		
4BRE050300S06	5	8	30	70	6		
4BRE060150060	6	9	15	60	6		
4BRE060200060	6	9	20	60	6		
4BRE060300070	6	9	30	70	6		
4BRE080200065	8	12	20	65	8		
4BRE080300080	8	12	30	80	8		
4BRE080400100	8	12	40	100	8		
4BRE100250070	10	15	25	70	10		
4BRE100350100	10	15	35	100	10		
4BRE100450100	10	15	45	100	10		
4BRE120300080	12	18	30	80	12		
4BRE120400110	12	18	40	110	12		
4BRE120500110	12	18	50	110	12		



4&6 Flutes Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.



Size	D Tolerance
Φ1~Φ5	+0~-0.01
Φ6~Φ12	+0~-0.02

Unit: mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4KNR 010 001 S04	R0.1 X 1	2.5	45	4
4KNR 010 002 S04	R0.2 X 1	2.5	45	4
4KNR 010 003 S04	R0.3 X 1	2.5	45	4
4KNR 015 001 S04	R0.1 X 1.5	4	45	4
4KNR 015 002 S04	R0.2 X 1.5	4	45	4
4KNR 015 003 S04	R0.3 X 1.5	4	45	4
4KNR 015 005 S04	R0.5 X 1.5	4	45	4
4KNR 020 001 S04	R0.1 X 2	6	45	4
4KNR 020 002 S04	R0.2 X 2	6	45	4
4KNR 020 003 S04	R0.3 X 2	6	45	4
4KNR 020 005 S04	R0.5 X 2	6	45	4
4KNR 025 001 S04	R0.1 X 2.5	6	50	4
4KNR 025 002 S04	R0.2 X 2.5	6	50	4
4KNR 025 003 S04	R0.3 X 2.5	6	50	4
4KNR 025 005 S04	R0.5 X 2.5	6	50	4
4KNR 030 001 S06	R0.1 X 3	8	60	6
4KNR 030 002 S06	R0.2 X 3	8	60	6
4KNR 030 003 S06	R0.3 X 3	8	60	6
4KNR 030 005 S06	R0.5 X 3	8	60	6
4KNR 040 001 S06	R0.1 X 4	10	70	6
4KNR 040 002 S06	R0.2 X 4	10	70	6
4KNR 040 003 S06	R0.3 X 4	10	70	6
4KNR 040 005 S06	R0.5 X 4	10	70	6
4KNR 040 010 S06	R1.0 X 4	10	70	6
4KNR 050 001 S06	R0.1 X 5	13	75	6
4KNR 050 002 S06	R0.2 X 5	13	75	6
4KNR 050 003 S06	R0.3 X 5	13	75	6
4KNR 050 005 S06	R0.5 X 5	13	75	6
4KNR 050 010 S06	R1.0 X 5	13	75	6

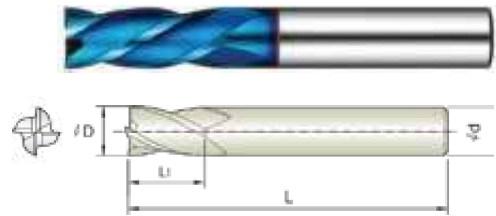
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	RxD	L1	L	d
4KNR 060 001 090	R0.1 X 6	13	90	6
4KNR 060 002 090	R0.2 X 6	13	90	6
4KNR 060 003 090	R0.3 X 6	13	90	6
4KNR 060 005 090	R0.5 X 6	13	90	6
4KNR 060 010 090	R1.0 X 6	13	90	6
4KNR 080 001 100	R0.1 X 8	19	100	8
4KNR 080 002 100	R0.2 X 8	19	100	8
4KNR 080 003 100	R0.3 X 8	19	100	8
4KNR 080 005 100	R0.5 X 8	19	100	8
4KNR 080 010 100	R1.0 X 8	19	100	8
4KNR 080 020 100	R2.0 X 8	19	100	8
4KNR 100 002 100	R0.2 X 10	22	100	10
4KNR 100 003 100	R0.3 X 10	22	100	10
4KNR 100 005 100	R0.5 X 10	22	100	10
4KNR 100 010 100	R1.0 X 10	22	100	10
4KNR 100 020 100	R2.0 X 10	22	100	10
4KNR 120 002 110	R0.2 X 12	26	110	12
4KNR 120 003 110	R0.3 X 12	26	110	12
4KNR 120 005 110	R0.5 X 12	26	110	12
4KNR 120 010 110	R1.0 X 12	26	110	12
4KNR 120 020 110	R2.0 X 12	26	110	12
6KNR 030 005 S06	R0.5 X 3	8	50	6
6KNR 040 005 S06	R0.5 X 4	10	50	6
6KNR 060 005 S06	R0.5 X 6	13	50	6
6KNR 080 005 065	R0.5 X 8	19	65	8
6KNR 100 005 070	R0.5 X 10	22	70	10
6KNR 120 005 080	R0.5 X 12	26	80	10

4&6KNR
Corner

4 Flutes Square End Mills

Endmills for pre-hardened and hardened steel (HRC52~70)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN-S coating.



Size	D Tolerance
φ1~φ5	+0~-0.01
φ6~φ12	+0~-0.02

Unit : mm

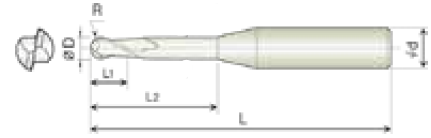
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4KCE 010 025 S04	1	2.5	45	4
4KCE 012 030 S04	1.2	4	45	4
4KCE 015 040 S04	1.5	4	45	4
4KCE 020 060 S04	2	6	45	4
4KCE 025 080 S04	2.5	8	45	4
4KCE 030 100 S04	3	10	50	4
4KCE 035 100 S06	3.5	10	50	6
4KCE 040 120 S04	4	12	50	4
4KCE 050 150 S06	5	15	50	6
4KCE 060 150 050	6	15	50	6
4KCE 070 200 S08	7	20	65	8
4KCE 080 200 065	8	20	65	8
4KCE 100 250 070	10	25	70	10
4KCE 120 300 080	12	30	80	12



2 Flutes Rib Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
Ø≥05	+0~-0.01mm
Ø6~Ø12	+0~-0.015mm

Unit : mm

2ARB, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 001 003 S04	R0.05X0.1	0.1	0.3	45	4
2ARB 001 005 S04	R0.05X0.1	0.1	0.5	45	4
2ARB 0015 005 S04	R0.075X0.15	0.15	0.5	45	4
2ARB 0016 005 S04	R0.08X0.16	0.16	0.5	45	4
2ARB 002 005 S04	R0.1X0.2	0.2	0.5	45	4
2ARB 002 005 S06	R0.1X0.2	0.2	0.5	50	6
2ARB 002 010 S04	R0.1X0.2	0.2	1	45	4
2ARB 002 015 S04	R0.1X0.2	0.2	1.5	45	4
2ARB 002 020 S04	R0.1X0.2	0.2	2	45	4
2ARB 002 025 S04	R0.1X0.2	0.2	2.5	45	4
2ARB 002 030 S04	R0.1X0.2	0.2	3	45	4
2ARB 0025 008 S04	R0.125X0.25	0.25	0.8	45	4
2ARB 003 005 S04	R0.15X0.3	0.3	0.5	45	4
2ARB 003 010 S04	R0.15X0.3	0.3	1	45	4
2ARB 003 015 S04	R0.15X0.3	0.3	1.5	45	4
2ARB 003 020 S04	R0.15X0.3	0.3	2	45	4
2ARB 003 025 S04	R0.15X0.3	0.3	2.5	45	4
2ARB 003 030 S04	R0.15X0.3	0.3	3	45	4
2ARB 003 035 S04	R0.15X0.3	0.3	3.5	45	4
2ARB 003 040 S04	R0.15X0.3	0.3	4	45	4
2ARB 003 050 S04	R0.15X0.3	0.3	5	45	4
2ARB 004 010 S04	R0.2X0.4	0.4	1	45	4
2ARB 004 010 S06	R0.2X0.4	0.4	1	50	6
2ARB 004 015 S04	R0.2X0.4	0.4	1.5	45	4
2ARB 004 020 S04	R0.2X0.4	0.4	2	45	4
2ARB 004 025 S04	R0.2X0.4	0.4	2.5	45	4
2ARB 004 030 S04	R0.2X0.4	0.4	3	45	4
2ARB 004 035 S04	R0.2X0.4	0.4	3.5	45	4
2ARB 004 040 S04	R0.2X0.4	0.4	4	45	4
2ARB 004 045 S04	R0.2X0.4	0.4	4.5	45	4
2ARB 004 050 S04	R0.2X0.4	0.4	5	45	4
2ARB 004 060 S04	R0.2X0.4	0.4	6	45	4
2ARB 004 080 S04	R0.2X0.4	0.4	8	45	4
2ARB 004 100 S04	R0.2X0.4	0.4	10	45	4
2ARB 005 010 S04	R0.25X0.5	0.5	1	45	4
2ARB 005 015 S04	R0.25X0.5	0.5	1.5	45	4
2ARB 005 015 S06	R0.25X0.5	0.5	1.5	50	6
2ARB 005 020 S04	R0.25X0.5	0.5	2	45	4
2ARB 005 025 S04	R0.25X0.5	0.5	2.5	45	4
2ARB 005 030 S04	R0.25X0.5	0.5	3	45	4
2ARB 005 035 S04	R0.25X0.5	0.5	3.5	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 005 040 S04	R0.25X0.5	0.5	4	45	4
2ARB 005 045 S04	R0.25X0.5	0.5	4.5	45	4
2ARB 005 050 S04	R0.25X0.5	0.5	5	45	4
2ARB 005 060 S04	R0.25X0.5	0.5	6	45	4
2ARB 005 080 S04	R0.25X0.5	0.5	8	45	4
2ARB 005 100 S04	R0.25X0.5	0.5	10	45	4
2ARB 005 120 S04	R0.25X0.5	0.5	12	45	4
2ARB 005 140 S04	R0.25X0.5	0.5	14	45	4
2ARB 006 010 S04	R0.3X0.6	0.6	1	45	4
2ARB 006 015 S06	R0.3X0.6	0.6	1.5	50	6
2ARB 006 020 S04	R0.3X0.6	0.6	2	45	4
2ARB 006 030 S04	R0.3X0.6	0.6	3	45	4
2ARB 006 040 S04	R0.3X0.6	0.6	4	45	4
2ARB 006 050 S04	R0.3X0.6	0.6	5	45	4
2ARB 006 060 S04	R0.3X0.6	0.6	6	45	4
2ARB 006 080 S04	R0.3X0.6	0.6	8	45	4
2ARB 006 100 S04	R0.3X0.6	0.6	10	45	4
2ARB 006 120 S04	R0.3X0.6	0.6	12	45	4
2ARB 006 140 S04	R0.3X0.6	0.6	14	45	4
2ARB 006 160 S04	R0.3X0.6	0.6	16	45	4
2ARB 007 020 S04	R0.35X0.7	0.7	2	45	4
2ARB 007 040 S04	R0.35X0.7	0.7	4	45	4
2ARB 007 060 S04	R0.35X0.7	0.7	6	45	4
2ARB 007 080 S04	R0.35X0.7	0.7	8	45	4
2ARB 007 100 S04	R0.35X0.7	0.7	10	45	4
2ARB 007 120 S04	R0.35X0.7	0.7	12	45	4
2ARB 008 020 S04	R0.4X0.8	0.8	2	45	4
2ARB 008 020 S06	R0.4X0.8	0.8	2	50	6
2ARB 008 030 S04	R0.4X0.8	0.8	3	45	4
2ARB 008 040 S04	R0.4X0.8	0.8	4	45	4
2ARB 008 050 S04	R0.4X0.8	0.8	5	45	4
2ARB 008 060 S04	R0.4X0.8	0.8	6	45	4
2ARB 008 080 S04	R0.4X0.8	0.8	8	45	4
2ARB 008 100 S04	R0.4X0.8	0.8	10	45	4
2ARB 008 120 S04	R0.4X0.8	0.8	12	45	4
2ARB 008 140 S04	R0.4X0.8	0.8	14	45	4
2ARB 008 160 S04	R0.4X0.8	0.8	16	45	4
2ARB 009 040 S04	R0.45X0.9	0.9	4	45	4
2ARB 010 020 S04	R0.5X1	1	2	45	4
2ARB 010 025 S06	R0.5X1	1	2.5	50	6
2ARB 010 030 S04	R0.5X1	1	3	45	4



Unit : mm

2ARB, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 010 040 S04	R0.5X 1	1	4	45	4
2ARB 010 050 S04	R0.5X 1	1	5	45	4
2ARB 010 060 S04	R0.5X 1	1	6	45	4
2ARB 010 080 S04	R0.5X 1	1	8	45	4
2ARB 010 100 S04	R0.5X 1	1	10	45	4
2ARB 010 120 S04	R0.5X 1	1	12	45	4
2ARB 010 140 S04	R0.5X 1	1	14	50	4
2ARB 010 160 S04	R0.5X 1	1	16	50	4
2ARB 010 180 S04	R0.5X 1	1	18	50	4
2ARB 010 200 S04	R0.5X 1	1	20	50	4
2ARB 010 220 S04	R0.5X 1	1	22	60	4
2ARB 010 250 S04	R0.5X 1	1	25	60	4
2ARB 010 300 S04	R0.5X 1	1	30	70	4
2ARB 012 030 S06	R0.6X 1.2	1.2	3	50	6
2ARB 012 040 S04	R0.6X 1.2	1.2	4	45	4
2ARB 012 060 S04	R0.6X 1.2	1.2	6	45	4
2ARB 012 080 S04	R0.6X 1.2	1.2	8	45	4
2ARB 012 100 S04	R0.6X 1.2	1.2	10	45	4
2ARB 012 120 S04	R0.6X 1.2	1.2	12	45	4
2ARB 012 140 S04	R0.6X 1.2	1.2	14	50	4
2ARB 012 160 S04	R0.6X 1.2	1.2	16	50	4
2ARB 012 200 S04	R0.6X 1.2	1.2	20	50	4
2ARB 012 240 S04	R0.6X 1.2	1.2	24	60	4
2ARB 014 060 S04	R0.7X 1.4	1.4	6	45	4
2ARB 014 080 S04	R0.7X 1.4	1.4	8	45	4
2ARB 014 120 S04	R0.7X 1.4	1.4	12	45	4
2ARB 014 160 S04	R0.7X 1.4	1.4	16	50	4
2ARB 015 030 S04	R0.75X 1.5	1.5	3	45	4
2ARB 015 040 S04	R0.75X 1.5	1.5	4	45	4
2ARB 015 040 S06	R0.75X 1.5	1.5	4	50	6
2ARB 015 060 S04	R0.75X 1.5	1.5	6	45	4
2ARB 015 080 S04	R0.75X 1.5	1.5	8	45	4
2ARB 015 100 S04	R0.75X 1.5	1.5	10	45	4
2ARB 015 120 S04	R0.75X 1.5	1.5	12	45	4
2ARB 015 140 S04	R0.75X 1.5	1.5	14	50	4
2ARB 015 160 S04	R0.75X 1.5	1.5	16	50	4
2ARB 015 180 S04	R0.75X 1.5	1.5	18	50	4
2ARB 015 200 S04	R0.75X 1.5	1.5	20	50	4
2ARB 015 220 S04	R0.75X 1.5	1.5	22	60	4
2ARB 015 250 S04	R0.75X 1.5	1.5	25	60	4
2ARB 015 300 S04	R0.75X 1.5	1.5	30	70	4
2ARB 015 350 S04	R0.75X 1.5	1.5	35	70	4
2ARB 015 400 S04	R0.75X 1.5	1.5	40	80	4
2ARB 016 060 S04	R0.8X 1.6	1.6	6	45	4
2ARB 016 080 S04	R0.8X 1.6	1.6	8	45	4
2ARB 016 120 S04	R0.8X 1.6	1.6	12	45	4
2ARB 016 160 S04	R0.8X 1.6	1.6	16	50	4
2ARB 016 200 S04	R0.8X 1.6	1.6	20	50	4
2ARB 018 060 S04	R0.9X 1.8	1.8	6	45	4
2ARB 018 080 S04	R0.9X 1.8	1.8	8	45	4
2ARB 018 120 S04	R0.9X 1.8	1.8	12	45	4
2ARB 018 160 S04	R0.9X 1.8	1.8	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 018 200 S04	R0.9X 1.8	1.8	20	50	4
2ARB 020 040 S04	R1.0X 2	2	4	45	4
2ARB 020 060 S04	R1.0X 2	2	6	45	4
2ARB 020 060 S06	R1.0X 2	2	6	50	6
2ARB 020 080 S04	R1.0X 2	2	8	45	4
2ARB 020 100 S04	R1.0X 2	2	10	45	4
2ARB 020 120 S04	R1.0X 2	2	12	45	4
2ARB 020 140 S04	R1.0X 2	2	14	50	4
2ARB 020 160 S04	R1.0X 2	2	16	50	4
2ARB 020 180 S04	R1.0X 2	2	18	50	4
2ARB 020 200 S04	R1.0X 2	2	20	50	4
2ARB 020 220 S04	R1.0X 2	2	22	60	4
2ARB 020 250 S04	R1.0X 2	2	25	60	4
2ARB 020 300 S04	R1.0X 2	2	30	70	4
2ARB 020 350 S04	R1.0X 2	2	35	70	4
2ARB 020 400 S04	R1.0X 2	2	40	80	4
2ARB 020 450 S04	R1.0X 2	2	45	80	4
2ARB 020 500 S04	R1.0X 2	2	50	90	4
2ARB 025 060 S06	R1.25X 2.5	2.5	6	50	6
2ARB 025 080 S04	R1.25X 2.5	2.5	8	45	4
2ARB 025 100 S04	R1.25X 2.5	2.5	10	45	4
2ARB 025 120 S04	R1.25X 2.5	2.5	12	45	4
2ARB 025 160 S04	R1.25X 2.5	2.5	16	50	4
2ARB 025 200 S04	R1.25X 2.5	2.5	20	50	4
2ARB 025 250 S04	R1.25X 2.5	2.5	25	60	4
2ARB 025 300 S04	R1.25X 2.5	2.5	30	70	4
2ARB 025 350 S04	R1.25X 2.5	2.5	35	70	4
2ARB 025 400 S04	R1.25X 2.5	2.5	40	80	4
2ARB 030 060 S03	R1.5X 3	3	6	60	3
2ARB 030 060 S06	R1.5X 3	3	6	50	6
2ARB 030 080 S06	R1.5X 3	3	8	50	6
2ARB 030 100 S06	R1.5X 3	3	10	50	6
2ARB 030 120 S06	R1.5X 3	3	12	50	6
2ARB 030 140 S06	R1.5X 3	3	14	60	6
2ARB 030 160 S06	R1.5X 3	3	16	60	6
2ARB 030 180 S06	R1.5X 3	3	18	60	6
2ARB 030 200 S06	R1.5X 3	3	20	60	6
2ARB 030 250 S06	R1.5X 3	3	25	65	6
2ARB 030 300 S06	R1.5X 3	3	30	70	6
2ARB 030 350 S06	R1.5X 3	3	35	80	6
2ARB 030 400 S06	R1.5X 3	3	40	80	6
2ARB 030 450 S06	R1.5X 3	3	45	90	6
2ARB 030 500 S06	R1.5X 3	3	50	100	6
2ARB 030 600 S06	R1.5X 3	3	60	110	6
2ARB 030 650 S06	R1.5X 3	3	65	110	6
2ARB 030 700 S06	R1.5X 3	3	70	110	6
2ARB 040 080 070	R2.0X 4	4	8	70	4
2ARB 040 080 S06	R2.0X 4	4	8	50	6
2ARB 040 100 S06	R2.0X 4	4	10	50	6
2ARB 040 120 S06	R2.0X 4	4	12	50	6
2ARB 040 140 S06	R2.0X 4	4	14	60	6
2ARB 040 160 S06	R2.0X 4	4	16	60	6

2ARB, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 040 200 S06	R2.0X 4	4	20	60	6
2ARB 040 250 S06	R2.0X 4	4	25	65	6
2ARB 040 300 S06	R2.0X 4	4	30	70	6
2ARB 040 350 S06	R2.0X 4	4	35	80	6
2ARB 040 400 S06	R2.0X 4	4	40	80	6
2ARB 040 450 S06	R2.0X 4	4	45	90	6
2ARB 040 500 S06	R2.0X 4	4	50	100	6
2ARB 040 550 S06	R2.0X 4	4	55	110	6
2ARB 040 600 S06	R2.0X 4	4	60	110	6
2ARB 040 650 S06	R2.0X 4	4	65	110	6
2ARB 040 700 S06	R2.0X 4	4	70	110	6
2ARB 050 120 S06	R2.5X 5	5	12	50	6
2ARB 050 160 S06	R2.5X 5	5	16	60	6
2ARB 050 200 S06	R2.5X 5	5	20	60	6
2ARB 050 250 S06	R2.5X 5	5	25	65	6
2ARB 050 300 S06	R2.5X 5	5	30	70	6
2ARB 050 400 S06	R2.5X 5	5	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ARB 050 450 S06	R2.5X 5	5	45	90	6
2ARB 050 500 S06	R2.5X 5	5	50	100	6
2ARB 050 600 S06	R2.5X 5	5	60	110	6
2ARB 050 650 S06	R2.5X 5	5	65	110	6
2ARB 050 700 S06	R2.5X 5	5	70	110	6
2ARB 060 150 060	R3.0X 6	7	15	60	6
2ARB 060 300 070	R3.0X 6	6	30	70	6
2ARB 060 300 090	R3.0X 6	6	30	90	6
2ARB 080 200 060	R4.0X 8	10	20	60	8
2ARB 080 300 080	R4.0X 8	8	30	80	8
2ARB 100 250 070	R5.0X 10	12	25	70	10
2ARB 100 350 100	R5.0X 10	10	35	100	10
2ARB 120 300 080	R6.0X 12	14	30	80	12
2ARB 120 400 110	R6.0X 12	12	40	110	12

2ARB

• RPM : rev/min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11			COPPER ALLOYS		
	HRC30 ~ 45			HRC45 ~ 55			HRC55 ~ 65					
Hardness (HRc)	HRC30 ~ 45			HRC45 ~ 55			HRC55 ~ 65			COPPER ALLOYS		
Radius of Ball Nose	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
R0.05	0.001 ~ 0.005	38,000 ~ 50,000	50 ~ 80	0.001 ~ 0.005	38,000 ~ 50,000	40 ~ 60	0.001 ~ 0.004	38,000 ~ 50,000	30 ~ 50	0.003 ~ 0.010	38,000 ~ 50,000	50 ~ 100
R0.1	0.001 ~ 0.010	38,000 ~ 50,000	200 ~ 350	0.001 ~ 0.009	38,000 ~ 50,000	200 ~ 280	0.001 ~ 0.005	38,000 ~ 50,000	150 ~ 240	0.010 ~ 0.020	38,000 ~ 50,000	200 ~ 500
R0.15	0.004 ~ 0.018	38,000 ~ 50,000	200 ~ 600	0.003 ~ 0.014	38,000 ~ 50,000	200 ~ 400	0.003 ~ 0.012	38,000 ~ 50,000	150 ~ 350	0.010 ~ 0.025	38,000 ~ 50,000	300 ~ 800
R0.2	0.005 ~ 0.020	30,000 ~ 45,000	250 ~ 800	0.003 ~ 0.014	30,000 ~ 45,000	200 ~ 500	0.003 ~ 0.011	30,000 ~ 45,000	160 ~ 400	0.010 ~ 0.030	30,000 ~ 42,000	300 ~ 1,000
R0.25	0.006 ~ 0.020	25,000 ~ 42,000	300 ~ 700	0.004 ~ 0.014	25,000 ~ 42,000	250 ~ 500	0.003 ~ 0.011	25,000 ~ 42,000	220 ~ 400	0.010 ~ 0.030	30,000 ~ 42,000	500 ~ 1,400
R0.3	0.006 ~ 0.030	22,000 ~ 40,000	300 ~ 1,200	0.006 ~ 0.030	22,000 ~ 40,000	250 ~ 800	0.003 ~ 0.015	20,000 ~ 27,000	210 ~ 380	0.010 ~ 0.100	24,000 ~ 40,000	350 ~ 1,600
R0.4	0.006 ~ 0.100	20,000 ~ 40,000	260 ~ 1,800	0.006 ~ 0.080	20,000 ~ 40,000	240 ~ 1,500	0.006 ~ 0.021	20,000 ~ 40,000	190 ~ 480	0.030 ~ 0.100	20,000 ~ 40,000	450 ~ 2,000
R0.5	0.010 ~ 0.200	20,000 ~ 38,000	500 ~ 2,800	0.010 ~ 0.080	20,000 ~ 38,000	300 ~ 2,400	0.007 ~ 0.025	12,000 ~ 17,000	230 ~ 420	0.050 ~ 0.200	20,000 ~ 40,000	800 ~ 3,000
R0.6	0.050 ~ 0.100	20,000 ~ 30,000	600 ~ 2,500	0.020 ~ 0.060	20,000 ~ 30,000	400 ~ 2,300	0.011 ~ 0.020	13,000 ~ 14,000	260 ~ 450	0.060 ~ 0.100	20,000 ~ 30,000	1,000 ~ 2,500
R0.75	0.050 ~ 0.200	18,000 ~ 30,000	600 ~ 3,100	0.020 ~ 0.180	18,000 ~ 30,000	550 ~ 2,500	0.010 ~ 0.030	8,500 ~ 11,000	200 ~ 400	0.100 ~ 0.300	18,000 ~ 30,000	1,200 ~ 3,000
R1.0	0.050 ~ 0.200	12,000 ~ 25,000	800 ~ 2,400	0.030 ~ 0.120	12,000 ~ 20,000	850 ~ 2,300	0.015 ~ 0.035	7,000 ~ 8,500	280 ~ 400	0.100 ~ 0.400	12,000 ~ 20,000	1,200 ~ 3,000
R1.5	0.050 ~ 0.200	10,000 ~ 20,000	1,100 ~ 3,800	0.030 ~ 0.180	10,000 ~ 20,000	900 ~ 2,900	0.020 ~ 0.050	5,200 ~ 6,000	380 ~ 550	0.200 ~ 0.500	16,000 ~ 20,000	1,800 ~ 4,000
R2.0	0.100 ~ 0.300	10,000 ~ 20,000	1,300 ~ 3,900	0.080 ~ 0.180	10,000 ~ 20,000	1,800 ~ 3,000	0.050 ~ 0.090	4,000 ~ 4,600	380 ~ 590	0.300 ~ 0.500	16,000 ~ 20,000	2,600 ~ 4,000
R2.5	0.100 ~ 0.300	9,000 ~ 20,000	1,500 ~ 3,900	0.050 ~ 0.200	8,000 ~ 18,000	1,300 ~ 3,800	0.030 ~ 0.160	6,000 ~ 16,000	450 ~ 1,000	0.300 ~ 0.500	9,000 ~ 20,000	2,600 ~ 4,000
R3.0	0.100 ~ 0.300	8,000 ~ 18,000	1,800 ~ 3,900	0.050 ~ 0.200	8,000 ~ 18,000	1,500 ~ 3,800	0.030 ~ 0.160	6,000 ~ 16,000	450 ~ 1,000	0.300 ~ 0.500	8,000 ~ 18,000	2,600 ~ 4,000
R4.0	0.150 ~ 0.350	8,000 ~ 12,000	2,000 ~ 4,000	0.100 ~ 0.250	6,000 ~ 10,000	1,800 ~ 3,700	0.080 ~ 0.200	4,000 ~ 8,000	800 ~ 1,500	0.300 ~ 0.500	8,000 ~ 12,000	2,600 ~ 5,000
R5.0	0.200 ~ 0.400	6,000 ~ 11,000	2,000 ~ 4,000	0.100 ~ 0.300	4,000 ~ 9,000	1,800 ~ 3,700	0.080 ~ 0.250	3,000 ~ 8,000	800 ~ 1,500	0.300 ~ 0.500	6,000 ~ 11,000	2,600 ~ 5,000
R6.0	0.300 ~ 0.500	5,000 ~ 10,000	2,000 ~ 4,000	0.200 ~ 0.400	3,000 ~ 8,000	1,800 ~ 3,700	0.150 ~ 0.350	2,000 ~ 6,000	800 ~ 1,500	0.300 ~ 0.500	5,000 ~ 10,000	2,600 ~ 5,000

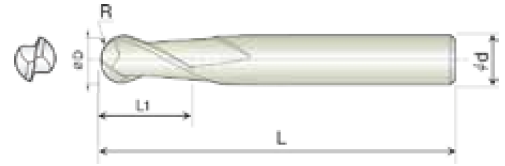




2 Flutes Standard Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Ø5	+0~-0.01
Ø6~Ø20	+0~-0.015

Unit : mm

2ACB, Ball

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ACB 001 002 S04	R0.05X 0.1	0.2	45	4
2ACB 0015 003 S04	R0.075X 0.15	0.3	45	4
2ACB 002 004 S04	R0.1X 0.2	0.4	45	4
2ACB 003 006 S04	R0.15X 0.3	0.6	45	4
2ACB 004 008 S04	R0.2X 0.4	0.8	45	4
2ACB 004 008 S06	R0.2X 0.4	0.8	45	6
2ACB 005 010 S04	R0.25X 0.5	1	45	4
2ACB 005 010 S06	R0.25X 0.5	1	45	6
2ACB 006 012 S04	R0.3X 0.6	1.2	45	4
2ACB 006 012 S06	R0.3X 0.6	1.2	45	6
2ACB 007 015 S04	R0.35X 0.7	1.5	45	4
2ACB 008 015 S04	R0.4X 0.8	1.5	45	4
2ACB 008 015 S06	R0.4X 0.8	1.5	45	6
2ACB 010 020 S03	R0.5X 1	2	50	3
2ACB 010 020 S04	R0.5X 1	2	50	4
2ACB 010 020 S06	R0.5X 1	2	50	6
2ACB 012 025 S03	R0.6X 1.2	2.5	50	3
2ACB 012 025 S04	R0.6X 1.2	2.5	50	4
2ACB 012 025 S06	R0.6X 1.2	2.5	50	6
2ACB 015 040 S03	R0.75X 1.5	4	50	3
2ACB 015 040 S04	R0.75X 1.5	4	50	4
2ACB 015 040 S06	R0.75X 1.5	4	50	6
2ACB 015 040 070	R0.75X 1.5	4	70	6
2ACB 015 040 100	R0.75X 1.5	4	100	6
2ACB 020 050 S03	R1.0X 2	5	50	3
2ACB 020 050 S04	R1.0X 2	5	50	4
2ACB 020 050 S06	R1.0X 2	5	60	6
2ACB 020 050 080	R1.0X 2	5	80	6
2ACB 020 050 100	R1.0X 2	5	100	6
2ACB 025 060 S03	R1.25X 2.5	6	50	3
2ACB 025 060 S04	R1.25X 2.5	6	50	4
2ACB 025 060 S06	R1.25X 2.5	6	60	6
2ACB 025 060 080	R1.25X 2.5	6	80	6
2ACB 025 060 100	R1.25X 2.5	6	100	6
2ACB 030 080 S03	R1.5X 3	8	60	3
2ACB 030 080 S04	R1.5X 3	8	60	4
2ACB 030 080 S06	R1.5X 3	8	60	6
2ACB 030 080 080	R1.5X 3	8	80	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ACB 030 080 100	R1.5X 3	8	100	6
2ACB 035 080 S06	R1.75X 3.5	8	60	6
2ACB 040 080 060	R2.0X 4	8	60	4
2ACB 040 080 080	R2.0X 4	8	80	4
2ACB 040 080 S06	R2.0X 4	8	70	6
2ACB 040 080 090	R2.0X 4	8	90	6
2ACB 040 080 120	R2.0X 4	8	120	6
2ACB 045 100 S06	R2.25X 4.5	10	70	6
2ACB 050 100 S06	R2.5X 5	10	80	6
2ACB 055 120 S06	R2.75X 5.5	12	80	6
2ACB 060 120 075	R3.0X 6	12	75	6
2ACB 060 120 080	R3.0X 6	12	80	6
2ACB 060 120 090	R3.0X 6	12	90	6
2ACB 060 120 120	R3.0X 6	12	120	6
2ACB 060 120 150	R3.0X 6	12	150	6
2ACB 070 140 S08	R3.5X 7	14	100	8
2ACB 080 140 075	R4.0X 8	14	75	8
2ACB 080 140 100	R4.0X 8	14	100	8
2ACB 080 140 130	R4.0X 8	14	130	8
2ACB 080 140 150	R4.0X 8	14	150	8
2ACB 090 180 S10	R4.5X 9	18	100	10
2ACB 100 180 075	R5.0X 10	18	75	10
2ACB 100 180 100	R5.0X 10	18	100	10
2ACB 100 180 130	R5.0X 10	18	130	10
2ACB 100 180 150	R5.0X 10	18	150	10
2ACB 100 180 180	R5.0X 10	18	180	10
2ACB 110 220 S12	R5.5X 11	22	110	12
2ACB 120 220 110	R6.0X 12	22	110	12
2ACB 120 220 130	R6.0X 12	22	130	12
2ACB 120 220 150	R6.0X 12	22	150	12
2ACB 120 220 200	R6.0X 12	22	200	12
2ACB 130 240 S14	R6.5X 13	24	110	14
2ACB 140 240 110	R7.0X 14	24	110	14
2ACB 160 300 110	R8.0X 16	30	110	16
2ACB 160 300 150	R8.0X 16	30	150	16
2ACB 200 380 110	R10.0X 20	38	110	20
2ACB 200 380 150	R10.0X 20	38	150	20



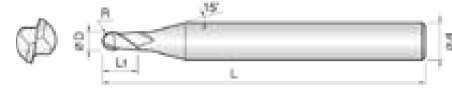
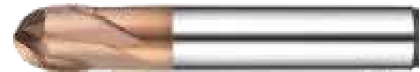
0.05R-25R

3R-6R

2 Flutes Short Ball End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D ≤ Ø5	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

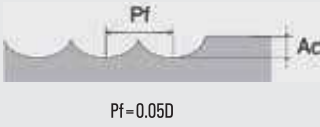
2ASB, Ball

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ASB 001 001 S04	R0.05X 0.1	0.1	40	4
2ASB 002 002 S04	R0.1X 0.2	0.2	40	4
2ASB 002 003 S04	R0.1X 0.2	0.3	40	4
2ASB 003 003 S04	R0.15X 0.3	0.3	40	4
2ASB 004 004 S04	R0.2X 0.4	0.4	40	4
2ASB 004 006 S04	R0.2X 0.4	0.6	40	4
2ASB 005 005 S04	R0.25X 0.5	0.5	40	4
2ASB 006 006 S04	R0.3X 0.6	0.6	40	4
2ASB 007 007 S04	R0.35X 0.7	0.7	40	4
2ASB 008 008 S04	R0.4X 0.8	0.8	40	4
2ASB 009 009 S04	R0.45X 0.9	0.9	40	4
2ASB 010 010 S04	R0.5X 1	1	40	4
2ASB 010 010 S06	R0.5X 1	1	40	6
2ASB 010 015 S04	R0.5X 1	1.5	40	4
2ASB 010 015 S06	R0.5X 1	1.5	40	6
2ASB 015 015 S04	R0.75X 1.5	1.5	40	4
2ASB 015 015 S06	R0.75X 1.5	1.5	40	6
2ASB 015 023 S04	R0.75X 1.5	2.3	40	4
2ASB 015 023 S06	R0.75X 1.5	2.3	40	6
2ASB 020 020 S04	R1.0X 2	2	45	4
2ASB 020 020 S06	R1.0X 2	3	45	4
2ASB 020 030 S04	R1.0X 2	3	45	6
2ASB 020 030 S06	R1.5X 3	3	45	4
2ASB 030 030 S04	R1.5X 3	3	45	6
2ASB 030 030 S06	R1.5X 3	4.5	45	4
2ASB 030 045 S04	R1.5X 3	4.5	45	6
2ASB 030 045 S06	R2.0X 4	4	45	4
2ASB 040 040 045	R2.0X 4	4	45	6
2ASB 040 040 S06	R2.0X 4	6	45	4
2ASB 040 060 045	R2.0X 4	6	45	6
2ASB 040 060 S06	R2.5X 5	5	50	6
2ASB 050 050 S06	R2.5X 5	7.5	50	6
2ASB 050 075 S06	R3.0X 6	6	50	6
2ASB 060 060 050	R3.0X 6	8	60	6
2ASB 060 080 060	R4.0X 8	8	50	8
2ASB 080 080 050	R4.0X 8	11	60	8
2ASB 080 110 060	R5.0X 10	10	60	10
2ASB 100 100 060	R5.0X 10	13	60	10
2ASB 100 130 060	R6.0X 12	12	60	12
2ASB 120 120 060	R6.0X 12	15	60	12

2ACB, 2ASB

• RPM : rev./min • Feed : mm/min

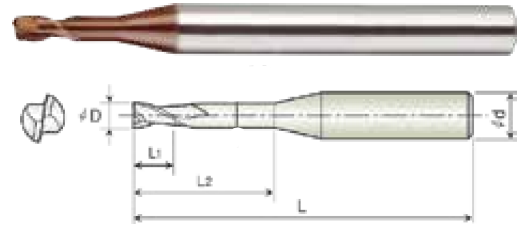
2ACB, Ball

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Radius of Ball Nose	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
R0.05	0.003	50,000	170	0.002	42,000	150	0.001	40,000	100
R0.1	0.004	50,000	200	0.003	42,000	180	0.002	40,000	120
R0.15	0.005	45,000	320	0.004	42,000	300	0.003	40,000	180
R0.2	0.006	45,000	420	0.005	42,000	400	0.004	40,000	240
R0.25	0.007	45,000	530	0.006	42,000	500	0.005	40,000	300
R0.3	0.008	42,000	1,000	0.007	40,000	1,200	0.006	40,000	800
R0.4	0.100	42,000	1,400	0.009	40,000	1,600	0.008	40,000	1,000
R0.5	0.10	40,000	2,600	0.10	30,000	2,000	0.10	25,000	1,300
R0.75	0.15	30,000	3,000	0.10	30,000	2,500	0.10	25,000	1,800
R1.0	0.20	25,000	3,000	0.20	25,000	2,500	0.15	20,000	1,800
R1.25	0.20	25,000	3,000	0.20	20,000	2,500	0.15	16,000	1,800
R1.5	0.20	20,000	3,000	0.20	18,000	2,500	0.15	14,000	2,000
R2.0	0.25	20,000	3,000	0.20	16,000	2,500	0.15	12,000	2,000
R2.5	0.25	18,000	3,000	0.20	14,000	2,500	0.15	9,000	2,000
R3.0	0.30	18,000	3,300	0.25	16,000	2,800	0.15	8,000	2,000
R4.0	0.40	16,000	3,300	0.30	12,000	2,800	0.20	7,000	1,500
R5.0	0.50	13,000	3,400	0.40	10,000	2,600	0.30	5,000	1,300
R6.0	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R6.5	0.60	7,000	2,000	0.50	6,000	1,800	0.40	4,000	1,100
R7.0	0.70	5,000	1,800	0.60	4,000	1,300	0.45	3,000	800
R8.0	0.70	4,000	1,500	0.60	3,500	1,000	0.45	2,500	800
R10.0	0.80	2,500	1,200	0.70	2,000	1,000	0.50	1,800	800
Depth of Cut	 <p>Pf = 0.05D</p>								

2 Flutes Square Rib End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Φ6	+0~-0.01
D ≥ Φ6	+0~-0.015

Unit : mm

2ARE, Square

Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
2ARE 001 003 S04	0.1	0.15	0.3	45	4		
2ARE 001 005 S04	0.1	0.15	0.5	45	4		
2ARE 002 005 S04	0.2	0.3	0.5	45	4		
2ARE 002 010 S04	0.2	0.3	1	45	4		
2ARE 002 015 S04	0.2	0.3	1.5	45	4		
2ARE 002 020 S04	0.2	0.3	2	45	4		
2ARE 002 025 S04	0.2	0.3	2.5	45	4		
2ARE 002 030 S04	0.2	0.3	3	45	4		
2ARE 003 005 S04	0.3	0.45	0.5	45	4		
2ARE 003 010 S04	0.3	0.45	1	45	4		
2ARE 003 015 S04	0.3	0.45	1.5	45	4		
2ARE 003 020 S04	0.3	0.45	2	45	4		
2ARE 003 025 S04	0.3	0.45	2.5	45	4		
2ARE 003 030 S04	0.3	0.45	3	45	4		
2ARE 003 035 S04	0.3	0.45	3.5	45	4		
2ARE 003 040 S04	0.3	0.45	4	45	4		
2ARE 003 050 S04	0.3	0.45	5	45	4		
2ARE 004 010 S04	0.4	0.6	1	45	4		
2ARE 004 015 S04	0.4	0.6	1.5	45	4		
2ARE 004 020 S04	0.4	0.6	2	45	4		
2ARE 004 025 S04	0.4	0.6	2.5	45	4		
2ARE 004 030 S04	0.4	0.6	3	45	4		
2ARE 004 035 S04	0.4	0.6	3.5	45	4		
2ARE 004 040 S04	0.4	0.6	4	45	4		
2ARE 004 050 S04	0.4	0.6	5	45	4		
2ARE 004 060 S04	0.4	0.6	6	45	4		
2ARE 004 080 S04	0.4	0.6	8	45	4		
2ARE 004 100 S04	0.4	0.6	10	45	4		
2ARE 005 010 S04	0.5	0.7	1	45	4		
2ARE 005 020 S04	0.5	0.7	2	45	4		
2ARE 005 030 S04	0.5	0.7	3	45	4		
2ARE 005 040 S04	0.5	0.7	4	45	4		
2ARE 005 050 S04	0.5	0.7	5	45	4		
2ARE 005 060 S04	0.5	0.7	6	45	4		
2ARE 005 080 S04	0.5	0.7	8	45	4		
2ARE 005 100 S04	0.5	0.7	10	45	4		
2ARE 005 120 S04	0.5	0.7	12	45	4		
2ARE 005 140 S04	0.5	0.7	14	45	4		
2ARE 006 020 S04	0.6	0.9	2	45	4		
2ARE 006 030 S04	0.6	0.9	3	45	4		
2ARE 006 040 S04	0.6	0.9	4	45	4		

Order Number	Diameter		Length of cut		Effective Length	Overall Length	Shank Dia
	D	L1	L2	L			
2ARE 006 050 S04	0.6	0.9	5	45	4		
2ARE 006 060 S04	0.6	0.9	6	45	4		
2ARE 006 080 S04	0.6	0.9	8	45	4		
2ARE 006 100 S04	0.6	0.9	10	45	4		
2ARE 006 120 S04	0.6	0.9	12	45	4		
2ARE 006 140 S04	0.6	0.9	14	45	4		
2ARE 006 160 S04	0.6	0.9	16	45	4		
2ARE 007 020 S04	0.7	1	2	45	4		
2ARE 007 040 S04	0.7	1	4	45	4		
2ARE 007 060 S04	0.7	1	6	45	4		
2ARE 007 080 S04	0.7	1	8	45	4		
2ARE 007 100 S04	0.7	1	10	45	4		
2ARE 007 120 S04	0.7	1	12	45	4		
2ARE 008 020 S04	0.8	1.2	2	45	4		
2ARE 008 030 S04	0.8	1.2	3	45	4		
2ARE 008 040 S04	0.8	1.2	4	45	4		
2ARE 008 050 S04	0.8	1.2	5	45	4		
2ARE 008 060 S04	0.8	1.2	6	45	4		
2ARE 008 080 S04	0.8	1.2	8	45	4		
2ARE 008 100 S04	0.8	1.2	10	45	4		
2ARE 008 120 S04	0.8	1.2	12	45	4		
2ARE 008 140 S04	0.8	1.2	14	45	4		
2ARE 009 060 S04	0.9	1.3	6	45	4		
2ARE 009 080 S04	0.9	1.3	8	45	4		
2ARE 009 100 S04	0.9	1.3	10	45	4		
2ARE 010 020 S04	1	1.5	2	45	4		
2ARE 010 030 S04	1	1.5	3	45	4		
2ARE 010 040 S04	1	1.5	4	45	4		
2ARE 010 050 S04	1	1.5	5	45	4		
2ARE 010 060 S04	1	1.5	6	45	4		
2ARE 010 080 S04	1	1.5	8	45	4		
2ARE 010 100 S04	1	1.5	10	45	4		
2ARE 010 120 S04	1	1.5	12	45	4		
2ARE 010 140 S04	1	1.5	14	50	4		
2ARE 010 160 S04	1	1.5	16	50	4		
2ARE 010 180 S04	1	1.5	18	50	4		
2ARE 010 200 S04	1	1.5	20	50	4		
2ARE 010 250 S04	1	1.5	25	60	4		
2ARE 010 300 S04	1	1.5	30	70	4		
2ARE 012 040 S04	1.2	1.8	4	45	4		
2ARE 012 060 S04	1.2	1.8	6	45	4		



2ARE, Square

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2ARE 012 080 S04	1.2	1.8	8	45	4
2ARE 012 100 S04	1.2	1.8	10	45	4
2ARE 012 120 S04	1.2	1.8	12	45	4
2ARE 012 160 S04	1.2	1.8	16	50	4
2ARE 012 200 S04	1.2	1.8	20	50	4
2ARE 012 250 S04	1.2	1.8	25	60	4
2ARE 012 300 S04	1.2	1.8	30	70	4
2ARE 014 060 S04	1.4	2.1	6	45	4
2ARE 014 080 S04	1.4	2.1	8	45	4
2ARE 014 100 S04	1.4	2.1	10	45	4
2ARE 014 120 S04	1.4	2.1	12	45	4
2ARE 014 140 S04	1.4	2.1	14	50	4
2ARE 014 160 S04	1.4	2.1	16	50	4
2ARE 014 200 S04	1.4	2.1	20	50	4
2ARE 015 040 S04	1.5	2.3	4	45	4
2ARE 015 060 S04	1.5	2.3	6	45	4
2ARE 015 080 S04	1.5	2.3	8	45	4
2ARE 015 100 S04	1.5	2.3	10	45	4
2ARE 015 120 S04	1.5	2.3	12	45	4
2ARE 015 140 S04	1.5	2.3	14	50	4
2ARE 015 160 S04	1.5	2.3	16	50	4
2ARE 015 180 S04	1.5	2.3	18	50	4
2ARE 015 200 S04	1.5	2.3	20	50	4
2ARE 015 250 S04	1.5	2.3	25	60	4
2ARE 015 300 S04	1.5	2.3	30	70	4
2ARE 016 100 S04	1.6	2.4	10	45	4
2ARE 016 120 S04	1.6	2.4	12	45	4
2ARE 016 140 S04	1.6	2.4	14	50	4
2ARE 016 180 S04	1.6	2.4	18	50	4
2ARE 018 100 S04	1.8	2.7	10	45	4
2ARE 018 140 S04	1.8	2.7	14	50	4
2ARE 018 180 S04	1.8	2.7	18	50	4
2ARE 020 040 S04	2	3	4	45	4
2ARE 020 060 S04	2	3	6	45	4
2ARE 020 080 S04	2	3	8	45	4
2ARE 020 100 S04	2	3	10	45	4
2ARE 020 120 S04	2	3	12	45	4
2ARE 020 140 S04	2	3	14	50	4
2ARE 020 160 S04	2	3	16	50	4
2ARE 020 180 S04	2	3	18	50	4
2ARE 020 200 S04	2	3	20	50	4
2ARE 020 220 S04	2	3	22	60	4
2ARE 020 250 S04	2	3	25	60	4
2ARE 020 300 S04	2	3	30	70	4
2ARE 020 350 S04	2	3	35	70	4
2ARE 020 400 S04	2	3	40	80	4
2ARE 020 450 S04	2	3	45	80	4
2ARE 020 500 S04	2	3	50	90	4
2ARE 025 080 S04	2.5	3.8	8	45	4
2ARE 025 100 S04	2.5	3.8	10	45	4
2ARE 025 120 S04	2.5	3.8	12	45	4
2ARE 025 160 S04	2.5	3.8	16	50	4
2ARE 025 200 S04	2.5	3.8	20	50	4
2ARE 025 250 S04	2.5	3.8	25	60	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2ARE 025 300 S04	2.5	3.8	30	70	4
2ARE 025 350 S04	2.5	3.8	35	70	4
2ARE 025 400 S04	2.5	3.8	40	80	4
2ARE 025 500 S04	2.5	3.8	50	90	4
2ARE 030 080 S06	3	4.5	8	50	6
2ARE 030 100 S06	3	4.5	10	50	6
2ARE 030 120 S06	3	4.5	12	50	6
2ARE 030 140 S06	3	4.5	14	60	6
2ARE 030 160 S06	3	4.5	16	60	6
2ARE 030 180 S06	3	4.5	18	60	6
2ARE 030 200 S06	3	4.5	20	60	6
2ARE 030 250 S06	3	4.5	25	65	6
2ARE 030 300 S06	3	4.5	30	70	6
2ARE 030 350 S06	3	4.5	35	80	6
2ARE 030 400 S06	3	4.5	40	80	6
2ARE 030 450 S06	3	4.5	45	90	6
2ARE 030 500 S06	3	4.5	50	100	6
2ARE 030 600 S06	3	4.5	60	110	6
2ARE 040 080 S06	4	6	8	50	6
2ARE 040 100 S06	4	6	10	50	6
2ARE 040 120 S06	4	6	12	50	6
2ARE 040 160 S06	4	6	16	60	6
2ARE 040 200 S06	4	6	20	60	6
2ARE 040 250 S06	4	6	25	65	6
2ARE 040 300 S06	4	6	30	70	6
2ARE 040 350 S06	4	6	35	80	6
2ARE 040 400 S06	4	6	40	80	6
2ARE 040 450 S06	4	6	45	90	6
2ARE 040 500 S06	4	6	50	100	6
2ARE 040 550 S06	4	6	55	110	6
2ARE 040 600 S06	4	6	60	110	6
2ARE 050 160 S06	5	8	16	60	6
2ARE 050 200 S06	5	8	20	60	6
2ARE 050 250 S06	5	8	25	65	6
2ARE 050 300 S06	5	8	30	70	6
2ARE 050 350 S06	5	8	35	80	6
2ARE 050 400 S06	5	8	40	80	6
2ARE 050 500 S06	5	8	50	100	6
2ARE 050 600 S06	5	8	60	110	6
2ARE 060 200 060	6	9	20	60	6
2ARE 060 300 070	6	9	30	70	6
2ARE 060 400 090	6	9	40	90	6
2ARE 060 500 100	6	9	50	100	6
2ARE 060 600 110	6	9	60	110	6
2ARE 080 200 065	8	12	20	65	8
2ARE 080 300 080	8	12	30	80	8
2ARE 080 400 100	8	12	40	100	8
2ARE 100 250 070	10	15	25	70	10
2ARE 100 350 100	10	15	35	100	10
2ARE 100 450 100	10	15	45	100	10
2ARE 120 300 080	12	18	30	80	12
2ARE 120 400 110	12	18	40	110	12
2ARE 120 500 110	12	18	50	110	12

• RPM : rev/min • Feed : mm/min

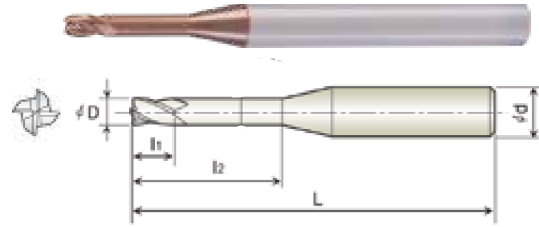
Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.1	0.001 ~ 0.004	38,000 ~ 50,000	50 ~ 80	0.001 ~ 0.004	35,000 ~ 45,000	30 ~ 65	0.001 ~ 0.002	25,000 ~ 35,000	20 ~ 60
0.2	0.002 ~ 0.005	30,000 ~ 50,000	60 ~ 240	0.002 ~ 0.005	25,000 ~ 40,000	40 ~ 200	0.002 ~ 0.003	20,000 ~ 32,000	30 ~ 160
0.3	0.003 ~ 0.007	30,000 ~ 48,000	60 ~ 350	0.003 ~ 0.007	22,000 ~ 38,000	45 ~ 300	0.002 ~ 0.003	18,000 ~ 30,000	35 ~ 250
0.4	0.003 ~ 0.010	25,000 ~ 40,000	150 ~ 500	0.003 ~ 0.010	20,000 ~ 35,000	100 ~ 400	0.002 ~ 0.005	18,000 ~ 30,000	80 ~ 350
0.5	0.003 ~ 0.020	16,000 ~ 30,000	150 ~ 500	0.003 ~ 0.020	16,000 ~ 30,000	100 ~ 400	0.001 ~ 0.007	12,000 ~ 23,000	80 ~ 360
0.6	0.004 ~ 0.020	16,000 ~ 30,000	230 ~ 620	0.004 ~ 0.020	16,000 ~ 28,000	130 ~ 500	0.002 ~ 0.007	12,000 ~ 23,000	100 ~ 400
0.7	0.010 ~ 0.040	16,000 ~ 30,000	330 ~ 650	0.005 ~ 0.040	16,000 ~ 25,000	130 ~ 550	0.003 ~ 0.020	12,000 ~ 23,000	100 ~ 450
0.8	0.005 ~ 0.040	16,000 ~ 30,000	250 ~ 900	0.005 ~ 0.040	13,500 ~ 23,000	150 ~ 800	0.002 ~ 0.040	10,000 ~ 20,000	100 ~ 650
1	0.005 ~ 0.050	12,000 ~ 27,000	150 ~ 1,000	0.003 ~ 0.050	10,000 ~ 23,000	60 ~ 900	0.002 ~ 0.040	6,000 ~ 18,000	50 ~ 800
1.2	0.010 ~ 0.050	12,500 ~ 25,000	350 ~ 1,000	0.007 ~ 0.050	10,000 ~ 23,000	250 ~ 900	0.003 ~ 0.040	7,000 ~ 18,000	200 ~ 800
1.5	0.010 ~ 0.070	9,000 ~ 23,000	300 ~ 1,200	0.010 ~ 0.060	8,000 ~ 20,000	200 ~ 900	0.005 ~ 0.040	7,000 ~ 18,000	150 ~ 800
2	0.015 ~ 0.080	7,000 ~ 20,000	280 ~ 1,000	0.015 ~ 0.060	7,000 ~ 18,000	180 ~ 900	0.010 ~ 0.050	7,000 ~ 15,000	160 ~ 750
3	0.030 ~ 0.100	5,000 ~ 16,000	350 ~ 900	0.020 ~ 0.100	6,000 ~ 16,000	250 ~ 800	0.015 ~ 0.070	6,000 ~ 10,000	200 ~ 700
4	0.035 ~ 0.100	4,500 ~ 14,000	350 ~ 900	0.035 ~ 0.100	5,000 ~ 12,000	250 ~ 800	0.025 ~ 0.070	5,000 ~ 9,500	200 ~ 700
5	0.050 ~ 0.120	3,500 ~ 12,000	400 ~ 1,000	0.040 ~ 0.100	4,000 ~ 10,000	300 ~ 900	0.030 ~ 0.080	3,000 ~ 8,000	250 ~ 800
6	0.050 ~ 0.120	3,500 ~ 12,000	400 ~ 1,000	0.040 ~ 0.120	4,000 ~ 10,000	300 ~ 900	0.030 ~ 0.080	3,000 ~ 8,000	250 ~ 800
8	0.060 ~ 0.150	4,500 ~ 10,000	450 ~ 1,000	0.050 ~ 0.120	3,500 ~ 9,000	350 ~ 900	0.040 ~ 0.100	2,500 ~ 7,000	300 ~ 800
10	0.080 ~ 0.150	4,000 ~ 8,000	500 ~ 1,000	0.060 ~ 0.120	3,000 ~ 7,000	400 ~ 900	0.040 ~ 0.100	2,000 ~ 5,000	300 ~ 800
12	0.080 ~ 0.200	3,500 ~ 7,000	500 ~ 1,000	0.070 ~ 0.180	2,500 ~ 6,000	400 ~ 900	0.050 ~ 0.120	1,500 ~ 4,000	300 ~ 800
Depth of Cut									

2ARE Square

4 Flutes Square Rib End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Φ6	+0~-0.01
D ≥ Φ6	+0~-0.015

Unit : mm

4ARE, Square

Order Number	Diameter		Length of cut		Overall Length	Shank Dia
	D	L1	L2	L		
4ARE 008 020 S04	0.8	1.2	2	45	4	
4ARE 008 040 S04	0.8	1.2	4	45	4	
4ARE 008 060 S04	0.8	1.2	6	45	4	
4ARE 008 080 S04	0.8	1.2	8	45	4	
4ARE 008 100 S04	0.8	1.2	10	45	4	
4ARE 008 120 S04	0.8	1.2	12	45	4	
4ARE 008 160 S04	0.8	1.2	16	45	4	
4ARE 009 020 S04	0.9	1.4	2	45	4	
4ARE 009 060 S04	0.9	1.4	6	45	4	
4ARE 009 080 S04	0.9	1.4	8	45	4	
4ARE 009 100 S04	0.9	1.4	10	45	4	
4ARE 010 020 S04	1	1.5	2	45	4	
4ARE 010 030 S04	1	1.5	3	45	4	
4ARE 010 040 S04	1	1.5	4	45	4	
4ARE 010 060 S04	1	1.5	6	45	4	
4ARE 010 080 S04	1	1.5	8	45	4	
4ARE 010 100 S04	1	1.5	10	45	4	
4ARE 010 120 S04	1	1.5	12	45	4	
4ARE 010 140 S04	1	1.5	14	50	4	
4ARE 010 160 S04	1	1.5	16	50	4	
4ARE 010 200 S04	1	1.5	20	50	4	
4ARE 010 250 S04	1	1.5	25	60	4	
4ARE 012 040 S04	1.2	1.8	4	45	4	
4ARE 012 060 S04	1.2	1.8	6	45	4	
4ARE 012 080 S04	1.2	1.8	8	45	4	
4ARE 012 100 S04	1.2	1.8	10	45	4	
4ARE 012 120 S04	1.2	1.8	12	45	4	
4ARE 012 160 S04	1.2	1.8	16	50	4	
4ARE 015 040 S04	1.5	2.3	4	45	4	
4ARE 015 060 S04	1.5	2.3	6	45	4	
4ARE 015 080 S04	1.5	2.3	8	45	4	
4ARE 015 100 S04	1.5	2.3	10	45	4	
4ARE 015 120 S04	1.5	2.3	12	45	4	

Order Number	Diameter		Length of cut		Overall Length	Shank Dia
	D	L1	L2	L		
4ARE 015 160 S04	1.5	2.3	16	50	4	
4ARE 015 200 S04	1.5	2.3	20	50	4	
4ARE 015 250 S04	1.5	2.3	25	60	4	
4ARE 020 040 S04	2	3	4	45	4	
4ARE 020 060 S04	2	3	6	45	4	
4ARE 020 080 S04	2	3	8	45	4	
4ARE 020 100 S04	2	3	10	45	4	
4ARE 020 120 S04	2	3	12	45	4	
4ARE 020 140 S04	2	3	14	50	4	
4ARE 020 160 S04	2	3	16	50	4	
4ARE 020 180 S04	2	3	18	50	4	
4ARE 020 200 S04	2	3	20	50	4	
4ARE 020 250 S04	2	3	25	60	4	
4ARE 020 300 S04	2	3	30	70	4	
4ARE 025 100 S04	2.5	3.8	10	45	4	
4ARE 025 120 S04	2.5	3.8	12	45	4	
4ARE 025 160 S04	2.5	3.8	16	50	4	
4ARE 025 200 S04	2.5	3.8	20	50	4	
4ARE 025 250 S04	2.5	3.8	25	60	4	
4ARE 025 300 S04	2.5	3.8	30	70	4	
4ARE 030 060 S06	3	4.5	6	45	6	
4ARE 030 080 S06	3	4.5	8	50	6	
4ARE 030 100 S06	3	4.5	10	50	6	
4ARE 030 120 S06	3	4.5	12	50	6	
4ARE 030 160 S06	3	4.5	16	60	6	
4ARE 030 200 S06	3	4.5	20	60	6	
4ARE 030 250 S06	3	4.5	25	65	6	
4ARE 030 300 S06	3	4.5	30	70	6	
4ARE 030 350 S06	3	4.5	35	80	6	
4ARE 030 400 S06	3	4.5	40	80	6	
4ARE 040 080 S06	4	6	8	50	6	
4ARE 040 100 S06	4	6	10	50	6	
4ARE 040 120 S06	4	6	12	50	6	

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia	Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d		D	L1	L2	L	d
4ARE 040 160 S06	4	6	16	60	6	4ARE 060 200 060	6	9	20	60	6
4ARE 040 200 S06	4	6	20	60	6	4ARE 060 300 070	6	9	30	70	6
4ARE 040 250 S06	4	6	25	65	6	4ARE 060 400 090	6	9	40	90	6
4ARE 040 300 S06	4	6	30	70	6	4ARE 060 500 100	6	9	50	100	6
4ARE 040 400 S06	4	6	40	80	6	4ARE 080 200 065	8	12	20	65	8
4ARE 040 450 S06	4	6	45	90	6	4ARE 080 300 080	8	12	30	80	8
4ARE 040 500 S06	4	6	50	100	6	4ARE 080 400 100	8	12	40	100	8
4ARE 050 160 S06	5	8	16	60	6	4ARE 100 250 070	10	15	25	70	10
4ARE 050 200 S06	5	8	20	60	6	4ARE 100 350 100	10	15	35	100	10
4ARE 050 250 S06	5	8	25	65	6	4ARE 100 450 100	10	15	45	100	10
4ARE 050 300 S06	5	8	30	70	6	4ARE 120 300 080	12	18	30	80	12
4ARE 050 400 S06	5	8	40	80	6	4ARE 120 400 110	12	18	40	110	12
4ARE 050 500 S06	5	8	50	100	6	4ARE 120 500 110	12	18	50	110	12

4ARB, Ball

4ARE

• RPM : rev/min • Feed : mm/min

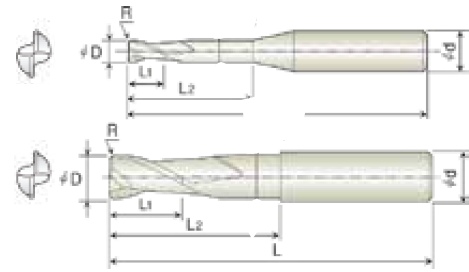
Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.8	0.005 ~ 0.040	15,000 ~ 28,000	250 ~ 900	0.005 ~ 0.025	12,000 ~ 25,000	250 ~ 900	0.002 ~ 0.040	10,000 ~ 20,000	100 ~ 650
1	0.010 ~ 0.050	12,000 ~ 25,000	400 ~ 2,000	0.003 ~ 0.030	10,000 ~ 20,000	300 ~ 1,800	0.002 ~ 0.040	8,000 ~ 18,000	200 ~ 1,200
1.2	0.010 ~ 0.050	10,000 ~ 25,000	500 ~ 2,000	0.007 ~ 0.050	9,000 ~ 20,000	300 ~ 1,600	0.003 ~ 0.040	7,000 ~ 18,000	200 ~ 1,200
1.5	0.020 ~ 0.060	9,000 ~ 23,000	700 ~ 2,000	0.010 ~ 0.030	8,000 ~ 20,000	400 ~ 1,600	0.005 ~ 0.040	7,000 ~ 18,000	200 ~ 1,200
2	0.030 ~ 0.080	7,000 ~ 20,000	800 ~ 2,000	0.015 ~ 0.050	6,000 ~ 18,000	400 ~ 1,600	0.010 ~ 0.050	5,000 ~ 15,000	200 ~ 1,200
3	0.050 ~ 0.100	5,000 ~ 16,000	800 ~ 2,000	0.020 ~ 0.060	5,000 ~ 15,000	400 ~ 1,600	0.015 ~ 0.070	4,000 ~ 10,000	200 ~ 1,200
4	0.050 ~ 0.150	4,500 ~ 14,000	800 ~ 2,000	0.025 ~ 0.080	4,000 ~ 10,000	400 ~ 2,000	0.025 ~ 0.070	3,000 ~ 8,000	200 ~ 1,200
5	0.050 ~ 0.120	3,500 ~ 12,000	600 ~ 1,500	0.040 ~ 0.100	3,000 ~ 8,000	400 ~ 1,000	0.030 ~ 0.080	2,500 ~ 6,000	250 ~ 800
6	0.050 ~ 0.120	3,500 ~ 12,000	600 ~ 1,500	0.040 ~ 0.120	3,000 ~ 8,000	400 ~ 1,000	0.030 ~ 0.080	2,500 ~ 6,000	250 ~ 800
8	0.060 ~ 0.150	4,500 ~ 10,000	450 ~ 1,000	0.050 ~ 0.120	2,500 ~ 7,000	350 ~ 900	0.040 ~ 0.100	2,000 ~ 5,000	300 ~ 700
10	0.080 ~ 0.150	4,000 ~ 8,000	500 ~ 1,000	0.060 ~ 0.120	2,000 ~ 5,000	300 ~ 800	0.040 ~ 0.100	2,000 ~ 4,500	300 ~ 700
12	0.080 ~ 0.200	3,500 ~ 7,000	500 ~ 1,000	0.070 ~ 0.180	2,000 ~ 4,000	300 ~ 800	0.050 ~ 0.120	1,500 ~ 4,000	300 ~ 650

Depth of Cut

2 Flutes Rib Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Ø6	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

2ACR, Corner

Order Number	Diameter	Length of cut	Effective Length		Overall Length	Shank Dia
	R×D		L1	L2		
2ACR 002 0002 005	R0.02 X 0.2	0.3	0.5	45	4	4
2ACR 002 0002 010	R0.02 X 0.2	0.3	1	45	4	4
2ACR 002 0002 015	R0.02 X 0.2	0.3	1.5	45	4	4
2ACR 002 0005 010	R0.05 X 0.2	0.3	1	45	4	4
2ACR 002 0005 015	R0.05 X 0.2	0.3	1.5	45	4	4
2ACR 003 0005 010	R0.05 X 0.3	0.45	1	45	4	4
2ACR 003 0005 020	R0.05 X 0.3	0.45	2	45	4	4
2ACR 003 0005 030	R0.05 X 0.3	0.45	3	45	4	4
2ACR 004 0005 010	R0.05 X 0.4	0.6	1	45	4	4
2ACR 004 0005 020	R0.05 X 0.4	0.6	2	45	4	4
2ACR 004 0005 030	R0.05 X 0.4	0.6	3	45	4	4
2ACR 004 0005 040	R0.05 X 0.4	0.6	4	45	4	4
2ACR 004 001 010	R0.1 X 0.4	0.6	1	45	4	4
2ACR 004 001 015	R0.1 X 0.4	0.6	1.5	45	4	4
2ACR 004 001 020	R0.1 X 0.4	0.6	2	45	4	4
2ACR 004 001 030	R0.1 X 0.4	0.6	3	45	4	4
2ACR 004 001 040	R0.1 X 0.4	0.6	4	45	4	4
2ACR 005 0002 010	R0.02 X 0.5	0.7	1	45	4	4
2ACR 005 0002 015	R0.02 X 0.5	0.7	1.5	45	4	4
2ACR 005 0002 020	R0.02 X 0.5	0.7	2	45	4	4
2ACR 005 0002 025	R0.02 X 0.5	0.7	2.5	45	4	4
2ACR 005 0002 030	R0.02 X 0.5	0.7	3	45	4	4
2ACR 005 0002 040	R0.02 X 0.5	0.7	4	45	4	4
2ACR 005 0002 050	R0.02 X 0.5	0.7	5	45	4	4
2ACR 005 0002 060	R0.02 X 0.5	0.7	6	45	4	4
2ACR 005 0002 080	R0.02 X 0.5	0.7	8	45	4	4
2ACR 005 0002 100	R0.02 X 0.5	0.7	10	45	4	4
2ACR 005 0005 010	R0.05 X 0.5	0.7	1	45	4	4
2ACR 005 0005 015	R0.05 X 0.5	0.7	1.5	45	4	4
2ACR 005 0005 020	R0.05 X 0.5	0.7	2	45	4	4
2ACR 005 0005 025	R0.05 X 0.5	0.7	2.5	45	4	4
2ACR 005 0005 030	R0.05 X 0.5	0.7	3	45	4	4
2ACR 005 0005 040	R0.05 X 0.5	0.7	4	45	4	4
2ACR 005 0005 050	R0.05 X 0.5	0.7	5	45	4	4
2ACR 005 0005 060	R0.05 X 0.5	0.7	6	45	4	4
2ACR 005 0005 080	R0.05 X 0.5	0.7	8	45	4	4
2ACR 005 0005 100	R0.05 X 0.5	0.7	10	45	4	4
2ACR 005 001 010	R0.1 X 0.5	0.7	1	45	4	4
2ACR 005 001 015	R0.1 X 0.5	0.7	1.5	45	4	4
2ACR 005 001 020	R0.1 X 0.5	0.7	2	45	4	4
2ACR 005 001 025	R0.1 X 0.5	0.7	2.5	45	4	4
2ACR 005 001 030	R0.1 X 0.5	0.7	3	45	4	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D				
2ACR 005 001 040	R0.1 X 0.5	0.7	4	45	4
2ACR 005 001 050	R0.1 X 0.5	0.7	5	45	4
2ACR 005 001 060	R0.1 X 0.5	0.7	6	45	4
2ACR 005 001 080	R0.1 X 0.5	0.7	8	45	4
2ACR 005 001 100	R0.1 X 0.5	0.7	10	45	4
2ACR 006 0002 020	R0.02 X 0.6	0.9	2	45	4
2ACR 006 0002 030	R0.02 X 0.6	0.9	3	45	4
2ACR 006 0002 040	R0.02 X 0.6	0.9	4	45	4
2ACR 006 0002 060	R0.02 X 0.6	0.9	6	45	4
2ACR 006 0002 080	R0.02 X 0.6	0.9	8	45	4
2ACR 006 0002 100	R0.02 X 0.6	0.9	10	45	4
2ACR 006 0005 020	R0.05 X 0.6	0.9	2	45	4
2ACR 006 0005 030	R0.05 X 0.6	0.9	3	45	4
2ACR 006 0005 040	R0.05 X 0.6	0.9	4	45	4
2ACR 006 0005 060	R0.05 X 0.6	0.9	6	45	4
2ACR 006 0005 080	R0.05 X 0.6	0.9	8	45	4
2ACR 006 0005 100	R0.05 X 0.6	0.9	10	45	4
2ACR 006 001 020	R0.1 X 0.6	0.9	2	45	4
2ACR 006 001 030	R0.1 X 0.6	0.9	3	45	4
2ACR 006 001 040	R0.1 X 0.6	0.9	4	45	4
2ACR 006 001 060	R0.1 X 0.6	0.9	6	45	4
2ACR 006 001 080	R0.1 X 0.6	0.9	8	45	4
2ACR 006 001 100	R0.1 X 0.6	0.9	10	45	4
2ACR 007 001 020	R0.1 X 0.7	1	2	45	4
2ACR 007 001 040	R0.1 X 0.7	1	4	45	4
2ACR 007 001 060	R0.1 X 0.7	1	6	45	4
2ACR 008 0002 020	R0.02 X 0.8	1.2	2	45	4
2ACR 008 0002 040	R0.02 X 0.8	1.2	4	45	4
2ACR 008 0002 060	R0.02 X 0.8	1.2	6	45	4
2ACR 008 0002 080	R0.02 X 0.8	1.2	8	45	4
2ACR 008 0002 100	R0.02 X 0.8	1.2	10	45	4
2ACR 008 0005 020	R0.05 X 0.8	1.2	2	45	4
2ACR 008 0005 040	R0.05 X 0.8	1.2	4	45	4
2ACR 008 0005 060	R0.05 X 0.8	1.2	6	45	4
2ACR 008 0005 080	R0.05 X 0.8	1.2	8	45	4
2ACR 008 0005 100	R0.05 X 0.8	1.2	10	45	4
2ACR 008 001 020	R0.1 X 0.8	1.2	2	45	4
2ACR 008 001 040	R0.1 X 0.8	1.2	4	45	4
2ACR 008 001 060	R0.1 X 0.8	1.2	6	45	4
2ACR 008 001 080	R0.1 X 0.8	1.2	8	45	4
2ACR 008 001 100	R0.1 X 0.8	1.2	10	45	4
2ACR 008 002 020	R0.2 X 0.8	1.2	2	45	4



01028-1SR 28-3R

Unit : mm

2ACR, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 008 002 040	R0.2X0.8	1.2	4	45	4
2ACR 008 002 060	R0.2X0.8	1.2	6	45	4
2ACR 008 002 080	R0.2X0.8	1.2	8	45	4
2ACR 008 002 100	R0.2X0.8	1.2	10	45	4
2ACR 010 0005 040	R0.05X1	1.5	4	45	4
2ACR 010 0005 060	R0.05X1	1.5	6	45	4
2ACR 010 0005 080	R0.05X1	1.5	8	45	4
2ACR 010 0005 100	R0.05X1	1.5	10	45	4
2ACR 010 0005 120	R0.05X1	1.5	12	45	4
2ACR 010 0005 160	R0.05X1	1.5	16	50	4
2ACR 010 0005 200	R0.05X1	1.5	20	50	4
2ACR 010 0005 220	R0.05X1	1.5	22	60	4
2ACR 010 0005 250	R0.05X1	1.5	25	60	4
2ACR 010 001 040	R0.1X1	1.5	4	45	4
2ACR 010 001 060	R0.1X1	1.5	6	45	4
2ACR 010 001 080	R0.1X1	1.5	8	45	4
2ACR 010 001 100	R0.1X1	1.5	10	45	4
2ACR 010 001 120	R0.1X1	1.5	12	45	4
2ACR 010 001 160	R0.1X1	1.5	16	50	4
2ACR 010 001 200	R0.1X1	1.5	20	50	4
2ACR 010 001 220	R0.1X1	1.5	22	60	4
2ACR 010 001 250	R0.1X1	1.5	25	60	4
2ACR 010 002 040	R0.2X1	1.5	4	45	4
2ACR 010 002 060	R0.2X1	1.5	6	45	4
2ACR 010 002 080	R0.2X1	1.5	8	45	4
2ACR 010 002 100	R0.2X1	1.5	10	45	4
2ACR 010 002 120	R0.2X1	1.5	12	45	4
2ACR 010 002 160	R0.2X1	1.5	16	50	4
2ACR 010 002 200	R0.2X1	1.5	20	50	4
2ACR 010 002 220	R0.2X1	1.5	22	60	4
2ACR 010 002 250	R0.2X1	1.5	25	60	4
2ACR 010 0025 040	R0.25X1	1.5	4	65	6
2ACR 010 0025 080	R0.25X1	1.5	8	65	6
2ACR 010 003 040	R0.3X1	1.5	4	45	4
2ACR 010 003 060	R0.3X1	1.5	6	45	4
2ACR 010 003 080	R0.3X1	1.5	8	45	4
2ACR 010 003 100	R0.3X1	1.5	10	45	4
2ACR 010 003 120	R0.3X1	1.5	12	45	4
2ACR 010 003 160	R0.3X1	1.5	16	50	4
2ACR 010 003 200	R0.3X1	1.5	20	50	4
2ACR 010 003 220	R0.3X1	1.5	22	60	4
2ACR 010 003 250	R0.3X1	1.5	25	60	4
2ACR 012 001 040	R0.1X1.2	1.8	4	45	4
2ACR 012 001 060	R0.1X1.2	1.8	6	45	4
2ACR 012 001 080	R0.1X1.2	1.8	8	45	4
2ACR 012 001 100	R0.1X1.2	1.8	10	45	4
2ACR 012 001 120	R0.1X1.2	1.8	12	45	4
2ACR 012 001 160	R0.1X1.2	1.8	16	50	4
2ACR 012 001 200	R0.1X1.2	1.8	20	50	4
2ACR 012 002 040	R0.2X1.2	1.8	4	45	4
2ACR 012 002 060	R0.2X1.2	1.8	6	45	4
2ACR 012 002 080	R0.2X1.2	1.8	8	45	4
2ACR 012 002 100	R0.2X1.2	1.8	10	45	4
2ACR 012 002 120	R0.2X1.2	1.8	12	45	4
2ACR 012 002 160	R0.2X1.2	1.8	16	50	4
2ACR 012 002 200	R0.2X1.2	1.8	20	50	4
2ACR 012 003 040	R0.3X1.2	1.8	4	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 012 003 060	R0.3X1.2	1.8	6	45	4
2ACR 012 003 080	R0.3X1.2	1.8	8	45	4
2ACR 012 003 100	R0.3X1.2	1.8	10	45	4
2ACR 012 003 120	R0.3X1.2	1.8	12	45	4
2ACR 012 003 160	R0.3X1.2	1.8	16	50	4
2ACR 012 003 200	R0.3X1.2	1.8	20	50	4
2ACR 015 001 040	R0.1X1.5	2.3	4	45	4
2ACR 015 001 060	R0.1X1.5	2.3	6	45	4
2ACR 015 001 080	R0.1X1.5	2.3	8	45	4
2ACR 015 001 100	R0.1X1.5	2.3	10	45	4
2ACR 015 001 120	R0.1X1.5	2.3	12	45	4
2ACR 015 001 160	R0.1X1.5	2.3	16	50	4
2ACR 015 001 200	R0.1X1.5	2.3	20	50	4
2ACR 015 001 220	R0.1X1.5	2.3	22	60	4
2ACR 015 001 250	R0.1X1.5	2.3	25	60	4
2ACR 015 002 040	R0.2X1.5	2.3	4	45	4
2ACR 015 002 060	R0.2X1.5	2.3	6	45	4
2ACR 015 002 080	R0.2X1.5	2.3	8	45	4
2ACR 015 002 100	R0.2X1.5	2.3	10	45	4
2ACR 015 002 120	R0.2X1.5	2.3	12	45	4
2ACR 015 002 160	R0.2X1.5	2.3	16	50	4
2ACR 015 002 200	R0.2X1.5	2.3	20	50	4
2ACR 015 002 220	R0.2X1.5	2.3	22	60	4
2ACR 015 002 250	R0.2X1.5	2.3	25	60	4
2ACR 015 003 040	R0.3X1.5	2.3	4	45	4
2ACR 015 003 060	R0.3X1.5	2.3	6	45	4
2ACR 015 060 S06	R0.3X1.5	2.3	6	70	6
2ACR 015 003 080	R0.3X1.5	2.3	8	45	4
2ACR 015 080 S06	R0.3X1.5	2.3	8	70	6
2ACR 015 003 100	R0.3X1.5	2.3	10	45	4
2ACR 015 100 S06	R0.3X1.5	2.3	10	70	6
2ACR 015 003 120	R0.3X1.5	2.3	12	45	4
2ACR 015 003 160	R0.3X1.5	2.3	16	50	4
2ACR 015 003 200	R0.3X1.5	2.3	20	50	4
2ACR 015 003 220	R0.3X1.5	2.3	22	60	4
2ACR 015 003 250	R0.3X1.5	2.3	25	60	4
2ACR 015 005 040	R0.5X1.5	2.3	4	45	4
2ACR 015 005 060	R0.5X1.5	2.3	6	45	4
2ACR 015 005 080	R0.5X1.5	2.3	8	45	4
2ACR 015 005 100	R0.5X1.5	2.3	10	45	4
2ACR 015 005 120	R0.5X1.5	2.3	12	45	4
2ACR 015 005 160	R0.5X1.5	2.3	16	50	4
2ACR 015 005 200	R0.5X1.5	2.3	20	50	4
2ACR 015 005 220	R0.5X1.5	2.3	22	60	4
2ACR 015 005 250	R0.5X1.5	2.3	25	60	4
2ACR 020 001 040	R0.1X2	3	4	45	4
2ACR 020 001 060	R0.1X2	3	6	45	4
2ACR 020 001 080	R0.1X2	3	8	45	4
2ACR 020 001 100	R0.1X2	3	10	45	4
2ACR 020 001 120	R0.1X2	3	12	45	4
2ACR 020 001 160	R0.1X2	3	16	50	4
2ACR 020 001 200	R0.1X2	3	20	50	4
2ACR 020 001 250	R0.1X2	3	25	60	4
2ACR 020 001 300	R0.1X2	3	30	70	4
2ACR 020 002 040	R0.2X2	3	4	45	4
2ACR 020 002 060	R0.2X2	3	6	45	4
2ACR 020 002 080	R0.2X2	3	8	45	4



002R-15R 2R-3R Unit : mm

2ACR, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 020 002 100	R0.2X2	3	10	45	4
2ACR 020 002 120	R0.2X2	3	12	45	4
2ACR 020 002 160	R0.2X2	3	16	50	4
2ACR 020 002 200	R0.2X2	3	20	50	4
2ACR 020 002 250	R0.2X2	3	25	60	4
2ACR 020 002 300	R0.2X2	3	30	70	4
2ACR 020 003 040	R0.3X2	3	4	45	4
2ACR 020 003 060	R0.3X2	3	6	45	4
2ACR 020 003 080	R0.3X2	3	8	45	4
2ACR 020 003 100	R0.3X2	3	10	45	4
2ACR 020 003 120	R0.3X2	3	12	45	4
2ACR 020 003 160	R0.3X2	3	16	50	4
2ACR 020 003 200	R0.3X2	3	20	50	4
2ACR 020 003 250	R0.3X2	3	25	60	4
2ACR 020 003 300	R0.3X2	3	30	70	4
2ACR 020 005 040	R0.5X2	3	4	45	4
2ACR 020 005 060	R0.5X2	3	6	45	4
2ACR 020 060 S06	R0.5X2	3	6	70	6
2ACR 020 005 080	R0.5X2	3	8	45	4
2ACR 020 005 100	R0.5X2	3	10	45	4
2ACR 020 100 S06	R0.5X2	3	10	70	6
2ACR 020 005 120	R0.5X2	3	12	45	4
2ACR 020 120 S06	R0.5X2	3	12	70	6
2ACR 020 005 160	R0.5X2	3	16	50	4
2ACR 020 160 S06	R0.5X2	3	16	70	6
2ACR 020 005 180	R0.5X2	3	18	50	4
2ACR 020 005 200	R0.5X2	3	20	50	4
2ACR 020 005 250	R0.5X2	3	25	60	4
2ACR 020 005 300	R0.5X2	3	30	70	4
2ACR 025 001 100	R0.1X2.5	3.8	10	45	4
2ACR 025 001 160	R0.1X2.5	3.8	16	50	4
2ACR 025 001 200	R0.1X2.5	3.8	20	50	4
2ACR 025 001 250	R0.1X2.5	3.8	25	60	4
2ACR 025 001 300	R0.1X2.5	3.8	30	70	4
2ACR 025 002 100	R0.2X2.5	3.8	10	45	4
2ACR 025 002 160	R0.2X2.5	3.8	16	50	4
2ACR 025 002 200	R0.2X2.5	3.8	20	50	4
2ACR 025 002 250	R0.2X2.5	3.8	25	60	4
2ACR 025 002 300	R0.2X2.5	3.8	30	70	4
2ACR 025 003 100	R0.3X2.5	3.8	10	45	4
2ACR 025 003 160	R0.3X2.5	3.8	16	50	4
2ACR 025 003 200	R0.3X2.5	3.8	20	50	4
2ACR 025 003 250	R0.3X2.5	3.8	25	60	4
2ACR 025 003 300	R0.3X2.5	3.8	30	70	4
2ACR 025 005 100	R0.5X2.5	3.8	10	45	4
2ACR 025 005 140	R0.5X2.5	3.8	14	50	4
2ACR 025 005 160	R0.5X2.5	3.8	16	50	4
2ACR 025 005 180	R0.5X2.5	3.8	18	50	4
2ACR 025 005 200	R0.5X2.5	3.8	20	50	4
2ACR 025 005 250	R0.5X2.5	3.8	25	60	4
2ACR 025 005 300	R0.5X2.5	3.8	30	70	4
2ACR 025 010 100	R1.0X2.5	3.8	10	45	4
2ACR 030 001 080	R0.1X3	4.5	8	50	6
2ACR 030 001 100	R0.1X3	4.5	10	50	6
2ACR 030 001 120	R0.1X3	4.5	12	50	6
2ACR 030 001 160	R0.1X3	4.5	16	60	6
2ACR 030 001 200	R0.1X3	4.5	20	60	6
2ACR 030 001 250	R0.1X3	4.5	25	65	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 020 002 100	R0.1X3	4.5	30	70	6
2ACR 020 002 120	R0.1X3	4.5	35	80	6
2ACR 020 002 160	R0.1X3	4.5	40	80	6
2ACR 020 002 200	R0.2X3	4.5	8	50	6
2ACR 020 002 250	R0.2X3	4.5	10	50	6
2ACR 020 002 300	R0.2X3	4.5	12	50	6
2ACR 020 003 040	R0.2X3	4.5	16	60	6
2ACR 020 003 060	R0.2X3	4.5	20	60	6
2ACR 020 003 080	R0.2X3	4.5	25	65	6
2ACR 020 003 100	R0.2X3	4.5	30	70	6
2ACR 020 003 120	R0.2X3	4.5	35	80	6
2ACR 020 003 160	R0.2X3	4.5	40	80	6
2ACR 020 003 200	R0.3X3	4.5	8	50	6
2ACR 020 003 250	R0.3X3	4.5	10	50	6
2ACR 020 003 300	R0.3X3	4.5	12	50	6
2ACR 020 005 040	R0.3X3	4.5	16	60	6
2ACR 020 005 060	R0.3X3	4.5	20	60	6
2ACR 020 060 S06	R0.3X3	4.5	25	65	6
2ACR 020 005 080	R0.3X3	4.5	30	70	6
2ACR 020 005 100	R0.3X3	4.5	35	80	6
2ACR 020 100 S06	R0.3X3	4.5	40	80	6
2ACR 020 005 120	R0.5X3	4.5	8	50	6
2ACR 020 120 S06	R0.5X3	4.5	8	75	6
2ACR 020 005 160	R0.5X3	4.5	10	50	6
2ACR 020 160 S06	R0.5X3	4.5	12	50	6
2ACR 020 005 180	R0.5X3	4.5	12	75	6
2ACR 020 005 200	R0.5X3	4.5	16	60	6
2ACR 020 005 250	R0.5X3	4.5	20	60	6
2ACR 020 005 300	R0.5X3	4.5	20	75	6
2ACR 025 001 100	R0.5X3	4.5	25	65	6
2ACR 025 001 160	R0.5X3	4.5	30	70	6
2ACR 025 001 200	R0.5X3	4.5	35	80	6
2ACR 025 001 250	R0.5X3	4.5	40	80	6
2ACR 025 001 300	R1.0X3	4.5	8	50	6
2ACR 025 002 100	R1.0X3	4.5	10	50	6
2ACR 025 002 160	R1.0X3	4.5	12	50	6
2ACR 025 002 200	R1.0X3	4.5	16	60	6
2ACR 025 002 250	R1.0X3	4.5	20	60	6
2ACR 025 002 300	R1.0X3	4.5	25	65	6
2ACR 025 003 100	R1.0X3	4.5	30	70	6
2ACR 025 003 160	R1.0X3	4.5	35	80	6
2ACR 025 003 200	R1.0X3	4.5	40	80	6
2ACR 025 003 250	R0.5X3.5	4.5	10	50	6
2ACR 025 003 300	R0.5X3.5	4.5	16	60	6
2ACR 025 005 100	R0.1X4	6	8	50	6
2ACR 025 005 140	R0.1X4	6	10	50	6
2ACR 025 005 160	R0.1X4	6	12	50	6
2ACR 025 005 180	R0.1X4	6	16	60	6
2ACR 025 005 200	R0.1X4	6	20	60	6
2ACR 025 005 250	R0.1X4	6	25	65	6
2ACR 025 005 300	R0.1X4	6	30	70	6
2ACR 025 010 100	R0.1X4	6	35	80	6
2ACR 030 001 080	R0.1X4	6	40	80	6
2ACR 030 001 100	R0.1X4	6	45	90	6
2ACR 030 001 120	R0.1X4	6	50	100	6
2ACR 030 001 160	R0.2X4	6	8	50	6
2ACR 030 001 200	R0.2X4	6	10	50	6
2ACR 030 001 250	R0.2X4	6	12	50	6



010CR-1 SR 2R-3R

Unit : mm

2ACR, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 040 002 160	R0.2X4	6	16	60	6
2ACR 040 002 200	R0.2X4	6	20	60	6
2ACR 040 002 250	R0.2X4	6	25	65	6
2ACR 040 002 300	R0.2X4	6	30	70	6
2ACR 040 002 350	R0.2X4	6	35	80	6
2ACR 040 002 400	R0.2X4	6	40	80	6
2ACR 040 002 450	R0.2X4	6	45	90	6
2ACR 040 002 500	R0.2X4	6	50	100	6
2ACR 040 003 080	R0.3X4	6	8	50	6
2ACR 040 003 100	R0.3X4	6	10	50	6
2ACR 040 003 120	R0.3X4	6	12	50	6
2ACR 040 003 160	R0.3X4	6	16	60	6
2ACR 040 003 200	R0.3X4	6	20	60	6
2ACR 040 003 250	R0.3X4	6	25	65	6
2ACR 040 003 300	R0.3X4	6	30	70	6
2ACR 040 003 350	R0.3X4	6	35	80	6
2ACR 040 003 400	R0.3X4	6	40	80	6
2ACR 040 003 450	R0.3X4	6	45	90	6
2ACR 040 003 500	R0.3X4	6	50	100	6
2ACR 040 005 080	R0.5X4	6	8	50	6
2ACR 040 005 100	R0.5X4	6	10	50	6
2ACR 040 005 120	R0.5X4	6	12	50	6
2ACR 040 120 75L	R0.5X4	6	12	75	6
2ACR 040 005 160	R0.5X4	6	16	60	6
2ACR 040 005 200	R0.5X4	6	20	60	6
2ACR 040 200 75L	R0.5X4	6	20	75	6
2ACR 040 005 250	R0.5X4	6	25	65	6
2ACR 040 250 75L	R0.5X4	6	25	75	6
2ACR 040 005 300	R0.5X4	6	30	70	6
2ACR 040 005 350	R0.5X4	6	35	80	6
2ACR 040 005 400	R0.5X4	6	40	80	6
2ACR 040 005 450	R0.5X4	6	45	90	6
2ACR 040 005 500	R0.5X4	6	50	100	6
2ACR 040 010 080	R1.0X4	6	8	50	6
2ACR 040 010 100	R1.0X4	6	10	50	6
2ACR 040 010 120	R1.0X4	6	12	50	6
2ACR 040 010 75L	R1.0X4	6	12	75	6
2ACR 040 010 160	R1.0X4	6	16	60	6
2ACR 040 010 200	R1.0X4	6	20	60	6
2ACR 040 010 250	R1.0X4	6	25	65	6
2ACR 040 010 300	R1.0X4	6	30	70	6
2ACR 040 010 350	R1.0X4	6	35	80	6
2ACR 040 010 400	R1.0X4	6	40	80	6
2ACR 040 010 450	R1.0X4	6	45	90	6
2ACR 040 010 500	R1.0X4	6	50	100	6
2ACR 050 002 150	R0.2X5	7.5	15	60	6
2ACR 050 002 250	R0.2X5	7.5	25	65	6
2ACR 050 002 300	R0.2X5	7.5	30	70	6
2ACR 050 002 400	R0.2X5	7.5	40	80	6
2ACR 050 002 500	R0.2X5	7.5	50	100	6
2ACR 050 005 180	R0.5X5	7.5	18	60	6
2ACR 050 005 250	R0.5X5	7.5	25	65	6
2ACR 050 005 300	R0.5X5	7.5	30	70	6
2ACR 050 005 400	R0.5X5	7.5	40	80	6
2ACR 050 005 500	R0.5X5	7.5	50	100	6
2ACR 050 010 180	R1.0X5	7.5	18	60	6
2ACR 050 010 250	R1.0X5	7.5	25	65	6
2ACR 050 010 300	R1.0X5	7.5	30	70	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2ACR 050 010 400	R1.0X5	7.5	40	80	6
2ACR 050 010 500	R1.0X5	7.5	50	100	6
2ACR 060 001 200	R0.1X6	9	20	60	6
2ACR 060 001 400	R0.1X6	9	40	90	6
2ACR 060 002 200	R0.2X6	9	20	60	6
2ACR 060 002 400	R0.2X6	9	40	90	6
2ACR 060 003 200	R0.3X6	9	20	60	6
2ACR 060 003 400	R0.3X6	9	40	90	6
2ACR 060 005 200	R0.5X6	9	20	60	6
2ACR 060 005 400	R0.5X6	9	40	90	6
2ACR 060 010 200	R1.0X6	9	20	60	6
2ACR 060 010 400	R1.0X6	9	40	90	6
2ACR 060 015 200	R1.5X6	9	20	60	6
2ACR 060 015 400	R1.5X6	9	40	90	6
2ACR 080 002 240	R0.2X8	12	24	65	8
2ACR 080 002 400	R0.2X8	12	40	100	8
2ACR 080 003 240	R0.3X8	12	24	65	8
2ACR 080 003 400	R0.3X8	12	40	100	8
2ACR 080 005 240	R0.5X8	12	24	65	8
2ACR 080 005 80L	R0.5X8	12	24	80	8
2ACR 080 005 400	R0.5X8	12	40	100	8
2ACR 080 010 240	R1.0X8	12	24	65	8
2ACR 080 010 80L	R1.0X8	12	24	80	8
2ACR 080 010 400	R1.0X8	12	40	100	8
2ACR 080 015 240	R1.5X8	12	24	65	8
2ACR 080 015 400	R1.5X8	12	40	100	8
2ACR 080 020 240	R2.0X8	12	24	65	8
2ACR 100 002 300	R0.2X10	15	30	70	10
2ACR 100 002 400	R0.2X10	15	40	100	10
2ACR 100 003 300	R0.3X10	15	30	70	10
2ACR 100 003 400	R0.3X10	15	40	100	10
2ACR 100 005 300	R0.5X10	15	30	70	10
2ACR 100 005 400	R0.5X10	15	40	100	10
2ACR 100 010 300	R1.0X10	15	30	70	10
2ACR 100 010 400	R1.0X10	15	40	100	10
2ACR 100 015 300	R1.5X10	15	30	70	10
2ACR 100 015 400	R1.5X10	15	40	100	10
2ACR 100 020 300	R2.0X10	15	30	70	10
2ACR 100 020 400	R2.0X10	15	40	100	10
2ACR 120 002 300	R0.2X12	18	30	80	12
2ACR 120 002 500	R0.2X12	18	50	110	12
2ACR 120 003 300	R0.3X12	18	30	80	12
2ACR 120 003 500	R0.3X12	18	50	110	12
2ACR 120 005 300	R0.5X12	18	30	80	12
2ACR 120 005 500	R0.5X12	18	50	110	12
2ACR 120 010 300	R1.0X12	18	30	80	12
2ACR 120 010 500	R1.0X12	18	50	110	12
2ACR 120 015 300	R1.5X12	18	30	80	12
2ACR 120 015 500	R1.5X12	18	50	110	12
2ACR 120 020 300	R2.0X12	18	30	80	12
2ACR 120 020 500	R2.0X12	18	50	110	12
2ACR 120 030 300	R3.0X12	18	30	80	12
2ACR 120 030 500	R3.0X12	18	50	110	12
2ACR 160 005 400	R0.5X16	24	40	110	16
2ACR 160 005 150L	R0.5X16	24	40	150	16
2ACR 160 010 400	R1.0X16	24	40	110	16
2ACR 160 010 150L	R1.0X16	24	40	150	16

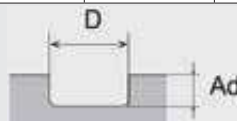
2ACR, 2ANR

• RPM : rev/min • Feed : mm/min

2ACR, Corner

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			COPPER ALLOYS		
	HRc30 ~ 45			HRc45 ~ 55					
Hardness (HRc)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.2	0.002 ~ 0.005	30,000 ~ 38,000	80 ~ 150	0.002 ~ 0.005	32,000 ~ 42,000	60 ~ 120	0.002 ~ 0.005	30,000 ~ 38,000	120 ~ 220
0.3	0.005 ~ 0.007	28,000 ~ 35,000	100 ~ 200	0.003 ~ 0.006	30,000 ~ 36,000	80 ~ 160	0.005 ~ 0.018	28,000 ~ 35,000	180 ~ 260
0.4	0.005 ~ 0.010	25,000 ~ 30,000	200 ~ 350	0.003 ~ 0.008	28,000 ~ 35,000	120 ~ 300	0.005 ~ 0.024	25,000 ~ 30,000	200 ~ 360
0.5	0.005 ~ 0.020	18,000 ~ 30,000	200 ~ 500	0.005 ~ 0.010	20,000 ~ 25,000	150 ~ 350	0.005 ~ 0.030	22,000 ~ 30,000	220 ~ 600
0.6	0.006 ~ 0.030	18,000 ~ 30,000	180 ~ 600	0.006 ~ 0.020	12,000 ~ 25,000	100 ~ 400	0.006 ~ 0.030	18,000 ~ 30,000	250 ~ 650
0.7	0.007 ~ 0.030	18,000 ~ 30,000	140 ~ 650	0.007 ~ 0.020	12,000 ~ 25,000	100 ~ 450	0.007 ~ 0.050	18,000 ~ 30,000	250 ~ 700
0.8	0.008 ~ 0.030	14,000 ~ 25,000	250 ~ 1,100	0.008 ~ 0.025	12,000 ~ 25,000	150 ~ 900	0.008 ~ 0.060	14,000 ~ 25,000	400 ~ 1,400
1	0.010 ~ 0.050	14,000 ~ 25,000	250 ~ 1,100	0.005 ~ 0.050	10,000 ~ 20,000	150 ~ 900	0.010 ~ 0.080	14,000 ~ 25,000	500 ~ 2,000
1.2	0.010 ~ 0.050	11,000 ~ 25,000	300 ~ 1,100	0.008 ~ 0.050	10,000 ~ 18,000	150 ~ 800	0.010 ~ 0.080	11,000 ~ 25,000	600 ~ 2,000
1.5	0.015 ~ 0.090	10,000 ~ 20,000	300 ~ 1,600	0.005 ~ 0.060	8,000 ~ 18,000	180 ~ 1,000	0.015 ~ 0.090	10,000 ~ 20,000	800 ~ 2,000
2	0.020 ~ 0.120	9,000 ~ 18,000	300 ~ 2,000	0.010 ~ 0.050	8,000 ~ 16,000	250 ~ 1,000	0.020 ~ 0.130	9,000 ~ 18,000	1,200 ~ 2,500
2.5	0.050 ~ 0.130	8,000 ~ 18,000	300 ~ 2,000	0.035 ~ 0.070	8,000 ~ 16,000	250 ~ 1,000	0.050 ~ 0.130	8,000 ~ 18,000	1,200 ~ 2,800
3	0.030 ~ 0.150	5,000 ~ 18,000	400 ~ 1,800	0.010 ~ 0.080	6,000 ~ 10,000	250 ~ 1,000	0.030 ~ 0.200	5,000 ~ 18,000	1,500 ~ 3,000
4	0.030 ~ 0.200	5,000 ~ 14,000	500 ~ 1,500	0.025 ~ 0.200	4,000 ~ 10,000	300 ~ 1,000	0.030 ~ 0.300	5,000 ~ 14,000	1,500 ~ 3,200
5	0.100 ~ 0.200	5,000 ~ 14,000	500 ~ 1,800	0.100 ~ 0.200	4,000 ~ 13,000	400 ~ 1,500	0.100 ~ 0.400	5,000 ~ 14,000	1,500 ~ 3,200
6	0.100 ~ 0.200	4,000 ~ 9,000	1,000 ~ 2,000	0.100 ~ 0.200	4,000 ~ 13,000	800 ~ 1,200	0.200 ~ 0.400	8,000 ~ 14,000	2,500 ~ 3,500
8	0.100 ~ 0.200	3,500 ~ 6,000	1,000 ~ 2,000	0.100 ~ 0.200	3,500 ~ 7,500	800 ~ 1,200	0.200 ~ 0.400	7,000 ~ 12,000	2,500 ~ 4,000
10	0.100 ~ 0.200	3,000 ~ 5,000	1,000 ~ 2,000	0.100 ~ 0.200	3,000 ~ 6,000	800 ~ 1,200	0.200 ~ 0.400	5,000 ~ 12,000	2,500 ~ 4,500
12	0.100 ~ 0.200	3,000 ~ 5,000	1,000 ~ 2,000	0.100 ~ 0.200	3,000 ~ 5,000	800 ~ 1,200	0.200 ~ 0.400	3,000 ~ 9,000	2,500 ~ 4,500
16	0.100 ~ 0.200	1,800 ~ 3,000	1,000 ~ 2,000	0.100 ~ 0.200	1,800 ~ 3,000	800 ~ 1,200	0.200 ~ 0.400	1,800 ~ 3,000	2,500 ~ 4,500
20	0.100 ~ 0.200	1,200 ~ 2,500	1,000 ~ 2,000	0.100 ~ 0.200	1,200 ~ 2,500	800 ~ 1,200	0.200 ~ 0.400	1,200 ~ 2,500	2,500 ~ 4,500

Depth of Cut

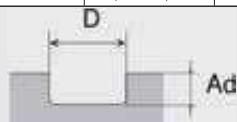


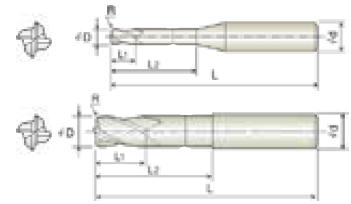
4ACR, 4ANR

• RPM : rev/min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Hardness (HRc)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.8	0.006 ~ 0.030	12,000 ~ 25,000	250 ~ 1,000	0.004 ~ 0.025	12,000 ~ 25,000	250 ~ 1,000	0.002 ~ 0.020	12,000 ~ 25,000	250 ~ 1,000
1	0.007 ~ 0.050	10,000 ~ 25,000	600 ~ 2,000	0.005 ~ 0.040	8,000 ~ 20,000	500 ~ 1,800	0.003 ~ 0.030	5,000 ~ 16,000	500 ~ 1,800
1.2	0.009 ~ 0.045	10,000 ~ 25,000	500 ~ 1,000	0.006 ~ 0.040	8,000 ~ 20,000	500 ~ 1,800	0.004 ~ 0.030	8,000 ~ 20,000	500 ~ 1,800
1.5	0.010 ~ 0.050	8,000 ~ 20,000	450 ~ 2,000	0.007 ~ 0.040	7,000 ~ 20,000	350 ~ 1,600	0.005 ~ 0.030	5,000 ~ 15,000	350 ~ 1,600
2	0.015 ~ 0.060	7,000 ~ 18,000	500 ~ 1,800	0.010 ~ 0.050	8,000 ~ 15,000	450 ~ 1,500	0.005 ~ 0.030	5,000 ~ 12,000	450 ~ 1,500
2.5	0.030 ~ 0.070	7,000 ~ 14,000	600 ~ 1,500	0.020 ~ 0.050	8,000 ~ 15,000	500 ~ 1,400	0.008 ~ 0.030	4,500 ~ 10,000	500 ~ 1,400
3	0.020 ~ 0.100	5,000 ~ 18,000	700 ~ 2,200	0.015 ~ 0.060	6,000 ~ 12,000	600 ~ 1,800	0.008 ~ 0.030	4,500 ~ 10,000	600 ~ 1,800
4	0.025 ~ 0.100	4,500 ~ 12,000	700 ~ 2,000	0.010 ~ 0.060	4,000 ~ 10,000	600 ~ 1,500	0.008 ~ 0.050	3,000 ~ 8,500	600 ~ 1,500
5	0.100 ~ 0.200	5,000 ~ 8,000	1,000 ~ 2,000	0.050 ~ 0.100	3,500 ~ 10,000	1,000 ~ 1,600	0.030 ~ 0.050	3,500 ~ 7,000	800 ~ 1,300
6	0.050 ~ 0.150	4,000 ~ 10,000	2,000 ~ 3,500	0.030 ~ 0.100	3,500 ~ 10,000	2,000 ~ 3,000	0.010 ~ 0.060	3,500 ~ 7,000	1,200 ~ 2,000
8	0.050 ~ 0.150	6,500 ~ 9,000	2,500 ~ 3,600	0.030 ~ 0.100	5,000 ~ 7,500	2,000 ~ 3,000	0.020 ~ 0.050	4,500 ~ 6,000	1,500 ~ 2,500
10	0.050 ~ 0.150	5,000 ~ 7,500	2,300 ~ 3,000	0.030 ~ 0.100	4,000 ~ 6,000	1,800 ~ 2,300	0.020 ~ 0.050	3,500 ~ 5,500	1,200 ~ 2,000
12	0.050 ~ 0.200	3,000 ~ 5,000	1,700 ~ 2,500	0.030 ~ 0.120	3,000 ~ 5,000	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600
16	0.050 ~ 0.200	1,500 ~ 2,800	1,500 ~ 3,000	0.030 ~ 0.120	1,500 ~ 2,800	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600
20	0.050 ~ 0.200	1,200 ~ 2,500	1,500 ~ 3,000	0.030 ~ 0.120	1,200 ~ 2,500	1,500 ~ 2,000	0.020 ~ 0.050	2,800 ~ 4,000	1,000 ~ 1,600

Depth of Cut





Size	D Tolerance
D < Ø6	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

4ACR, Corner

4 Flutes Rib Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRc52.
- Maximize the wear-resistance due to TiSiN coating.

Order Number	Diameter	Length of cut	Effective Length		Overall Length	Shank Dia
	R×D		L1	L2		
4ACR 008 0002 020	R0.02 X 0.8	1.2	2	45	4	
4ACR 008 0002 040	R0.02 X 0.8	1.2	4	45	4	
4ACR 008 0002 060	R0.02 X 0.8	1.2	6	45	4	
4ACR 008 0002 080	R0.02 X 0.8	1.2	8	45	4	
4ACR 008 0002 100	R0.02 X 0.8	1.2	10	45	4	
4ACR 008 0005 020	R0.05 X 0.8	1.2	2	45	4	
4ACR 008 0005 040	R0.05 X 0.8	1.2	4	45	4	
4ACR 008 0005 060	R0.05 X 0.8	1.2	6	45	4	
4ACR 008 0005 080	R0.05 X 0.8	1.2	8	45	4	
4ACR 008 0005 100	R0.05 X 0.8	1.2	10	45	4	
4ACR 008 001 020	R0.1 X 0.8	1.2	2	45	4	
4ACR 008 001 040	R0.1 X 0.8	1.2	4	45	4	
4ACR 008 001 060	R0.1 X 0.8	1.2	6	45	4	
4ACR 008 001 080	R0.1 X 0.8	1.2	8	45	4	
4ACR 008 001 100	R0.1 X 0.8	1.2	10	45	4	
4ACR 010 0002 040	R0.02 X 1	1.5	4	45	4	
4ACR 010 0002 060	R0.02 X 1	1.5	6	45	4	
4ACR 010 0002 080	R0.02 X 1	1.5	8	45	4	
4ACR 010 0002 100	R0.02 X 1	1.5	10	45	4	
4ACR 010 0002 120	R0.02 X 1	1.5	12	45	4	
4ACR 010 0002 160	R0.02 X 1	1.5	16	50	4	
4ACR 010 0002 200	R0.02 X 1	1.5	20	50	4	
4ACR 010 0005 040	R0.05 X 1	1.5	4	45	4	
4ACR 010 0005 060	R0.05 X 1	1.5	6	45	4	
4ACR 010 0005 080	R0.05 X 1	1.5	8	45	4	
4ACR 010 0005 100	R0.05 X 1	1.5	10	45	4	
4ACR 010 0005 120	R0.05 X 1	1.5	12	45	4	
4ACR 010 0005 160	R0.05 X 1	1.5	16	50	4	
4ACR 010 0005 200	R0.05 X 1	1.5	20	50	4	
4ACR 010 001 040	R0.1 X 1	1.5	4	45	4	
4ACR 010 001 060	R0.1 X 1	1.5	6	45	4	
4ACR 010 001 080	R0.1 X 1	1.5	8	45	4	
4ACR 010 001 100	R0.1 X 1	1.5	10	45	4	
4ACR 010 001 120	R0.1 X 1	1.5	12	45	4	
4ACR 010 001 160	R0.1 X 1	1.5	16	50	4	
4ACR 010 001 200	R0.1 X 1	1.5	20	50	4	
4ACR 010 002 040	R0.2 X 1	1.5	4	45	4	
4ACR 010 002 060	R0.2 X 1	1.5	6	45	4	
4ACR 010 002 080	R0.2 X 1	1.5	8	45	4	
4ACR 010 002 100	R0.2 X 1	1.5	10	45	4	
4ACR 010 002 120	R0.2 X 1	1.5	12	45	4	

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D				
4ACR 010 002 160	R0.2 X 1	1.5	16	50	4
4ACR 010 002 200	R0.2 X 1	1.5	20	50	4
4ACR 010 003 040	R0.3 X 1	1.5	4	45	4
4ACR 010 003 060	R0.3 X 1	1.5	6	45	4
4ACR 010 003 080	R0.3 X 1	1.5	8	45	4
4ACR 010 003 100	R0.3 X 1	1.5	10	45	4
4ACR 010 003 120	R0.3 X 1	1.5	12	45	4
4ACR 010 003 160	R0.3 X 1	1.5	16	50	4
4ACR 010 003 200	R0.3 X 1	1.5	20	50	4
4ACR 012 0002 040	R0.02 X 1.2	1.8	4	45	4
4ACR 012 0002 060	R0.02 X 1.2	1.8	6	45	4
4ACR 012 0002 080	R0.02 X 1.2	1.8	8	45	4
4ACR 012 0002 100	R0.02 X 1.2	1.8	10	45	4
4ACR 012 0002 120	R0.02 X 1.2	1.8	12	45	4
4ACR 012 0002 160	R0.02 X 1.2	1.8	16	50	4
4ACR 012 0002 200	R0.02 X 1.2	1.8	20	50	4
4ACR 012 0005 040	R0.05 X 1.2	1.8	4	45	4
4ACR 012 0005 060	R0.05 X 1.2	1.8	6	45	4
4ACR 012 0005 080	R0.05 X 1.2	1.8	8	45	4
4ACR 012 0005 100	R0.05 X 1.2	1.8	10	45	4
4ACR 012 0005 120	R0.05 X 1.2	1.8	12	45	4
4ACR 012 0005 160	R0.05 X 1.2	1.8	16	50	4
4ACR 012 0005 200	R0.05 X 1.2	1.8	20	50	4
4ACR 012 001 040	R0.1 X 1.2	1.8	4	45	4
4ACR 012 001 060	R0.1 X 1.2	1.8	6	45	4
4ACR 012 001 080	R0.1 X 1.2	1.8	8	45	4
4ACR 012 001 100	R0.1 X 1.2	1.8	10	45	4
4ACR 012 001 120	R0.1 X 1.2	1.8	12	45	4
4ACR 012 001 160	R0.1 X 1.2	1.8	16	50	4
4ACR 012 001 200	R0.1 X 1.2	1.8	20	50	4
4ACR 012 002 040	R0.2 X 1.2	1.8	4	45	4
4ACR 012 002 060	R0.2 X 1.2	1.8	6	45	4
4ACR 012 002 080	R0.2 X 1.2	1.8	8	45	4
4ACR 012 002 100	R0.2 X 1.2	1.8	10	45	4
4ACR 012 002 120	R0.2 X 1.2	1.8	12	45	4
4ACR 012 002 160	R0.2 X 1.2	1.8	16	50	4
4ACR 012 002 200	R0.2 X 1.2	1.8	20	50	4
4ACR 012 003 040	R0.3 X 1.2	1.8	4	45	4
4ACR 012 003 060	R0.3 X 1.2	1.8	6	45	4
4ACR 012 003 080	R0.3 X 1.2	1.8	8	45	4
4ACR 012 003 100	R0.3 X 1.2	1.8	10	45	4



0.02R-1.5R 2R-5R

Unit : mm

4ACR, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 012 003 120	R0.3X1.2	1.8	12	45	4
4ACR 012 003 160	R0.3X1.2	1.8	16	50	4
4ACR 012 003 200	R0.3X1.2	1.8	20	50	4
4ACR 015 0002 040	R0.02X1.5	2.3	4	45	4
4ACR 015 0002 060	R0.02X1.5	2.3	6	45	4
4ACR 015 0002 080	R0.02X1.5	2.3	8	45	4
4ACR 015 0002 100	R0.02X1.5	2.3	10	45	4
4ACR 015 0002 120	R0.02X1.5	2.3	12	45	4
4ACR 015 0002 160	R0.02X1.5	2.3	16	50	4
4ACR 015 0002 200	R0.02X1.5	2.3	20	50	4
4ACR 015 0002 220	R0.02X1.5	2.3	22	60	4
4ACR 015 0002 250	R0.02X1.5	2.3	25	60	4
4ACR 015 0005 040	R0.05X1.5	2.3	4	45	4
4ACR 015 0005 060	R0.05X1.5	2.3	6	45	4
4ACR 015 0005 080	R0.05X1.5	2.3	8	45	4
4ACR 015 0005 100	R0.05X1.5	2.3	10	45	4
4ACR 015 0005 120	R0.05X1.5	2.3	12	45	4
4ACR 015 0005 160	R0.05X1.5	2.3	16	50	4
4ACR 015 0005 200	R0.05X1.5	2.3	20	50	4
4ACR 015 0005 220	R0.05X1.5	2.3	22	60	4
4ACR 015 0005 250	R0.05X1.5	2.3	25	60	4
4ACR 015 001 040	R0.1X1.5	2.3	4	45	4
4ACR 015 001 060	R0.1X1.5	2.3	6	45	4
4ACR 015 001 080	R0.1X1.5	2.3	8	45	4
4ACR 015 001 100	R0.1X1.5	2.3	10	45	4
4ACR 015 001 120	R0.1X1.5	2.3	12	45	4
4ACR 015 001 160	R0.1X1.5	2.3	16	50	4
4ACR 015 001 200	R0.1X1.5	2.3	20	50	4
4ACR 015 001 220	R0.1X1.5	2.3	22	60	4
4ACR 015 001 250	R0.1X1.5	2.3	25	60	4
4ACR 015 002 040	R0.2X1.5	2.3	4	45	4
4ACR 015 002 060	R0.2X1.5	2.3	6	45	4
4ACR 015 002 080	R0.2X1.5	2.3	8	45	4
4ACR 015 002 100	R0.2X1.5	2.3	10	45	4
4ACR 015 002 120	R0.2X1.5	2.3	12	45	4
4ACR 015 002 160	R0.2X1.5	2.3	16	50	4
4ACR 015 002 200	R0.2X1.5	2.3	20	50	4
4ACR 015 002 220	R0.2X1.5	2.3	22	60	4
4ACR 015 002 250	R0.2X1.5	2.3	25	60	4
4ACR 015 003 040	R0.3X1.5	2.3	4	45	4
4ACR 015 003 060	R0.3X1.5	2.3	6	45	4
4ACR 015 003 080	R0.3X1.5	2.3	8	45	4
4ACR 015 003 100	R0.3X1.5	2.3	10	45	4
4ACR 015 003 120	R0.3X1.5	2.3	12	45	4
4ACR 015 003 160	R0.3X1.5	2.3	16	50	4
4ACR 015 003 200	R0.3X1.5	2.3	20	50	4
4ACR 015 003 220	R0.3X1.5	2.3	22	60	4
4ACR 015 003 250	R0.3X1.5	2.3	25	60	4
4ACR 015 005 040	R0.5X1.5	2.3	4	45	4
4ACR 015 005 060	R0.5X1.5	2.3	6	45	4
4ACR 015 005 080	R0.5X1.5	2.3	8	45	4
4ACR 015 005 100	R0.5X1.5	2.3	10	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 015 005 120	R0.5X1.5	2.3	12	45	4
4ACR 015 005 160	R0.5X1.5	2.3	16	50	4
4ACR 015 005 200	R0.5X1.5	2.3	20	50	4
4ACR 015 005 220	R0.5X1.5	2.3	22	60	4
4ACR 015 005 250	R0.5X1.5	2.3	25	60	4
4ACR 020 0002 040	R0.02X2	3	4	45	4
4ACR 020 0002 060	R0.02X2	3	6	45	4
4ACR 020 0002 080	R0.02X2	3	8	45	4
4ACR 020 0002 100	R0.02X2	3	10	45	4
4ACR 020 0002 120	R0.02X2	3	12	45	4
4ACR 020 0002 140	R0.02X2	3	14	50	4
4ACR 020 0002 160	R0.02X2	3	16	50	4
4ACR 020 0002 180	R0.02X2	3	18	50	4
4ACR 020 0002 200	R0.02X2	3	20	50	4
4ACR 020 0002 220	R0.02X2	3	22	60	4
4ACR 020 0002 250	R0.02X2	3	25	60	4
4ACR 020 0002 300	R0.02X2	3	30	70	4
4ACR 020 0002 350	R0.02X2	3	35	70	4
4ACR 020 0005 040	R0.05X2	3	4	45	4
4ACR 020 0005 060	R0.05X2	3	6	45	4
4ACR 020 0005 080	R0.05X2	3	8	45	4
4ACR 020 0005 100	R0.05X2	3	10	45	4
4ACR 020 0005 120	R0.05X2	3	12	45	4
4ACR 020 0005 140	R0.05X2	3	14	50	4
4ACR 020 0005 160	R0.05X2	3	16	50	4
4ACR 020 0005 180	R0.05X2	3	18	50	4
4ACR 020 0005 200	R0.05X2	3	20	50	4
4ACR 020 0005 220	R0.05X2	3	22	60	4
4ACR 020 0005 250	R0.05X2	3	25	60	4
4ACR 020 0005 300	R0.05X2	3	30	70	4
4ACR 020 0005 350	R0.05X2	3	35	70	4
4ACR 020 001 040	R0.1X2	3	4	45	4
4ACR 020 001 060	R0.1X2	3	6	45	4
4ACR 020 001 080	R0.1X2	3	8	45	4
4ACR 020 001 100	R0.1X2	3	10	45	4
4ACR 020 001 120	R0.1X2	3	12	45	4
4ACR 020 001 140	R0.1X2	3	14	50	4
4ACR 020 001 160	R0.1X2	3	16	50	4
4ACR 020 001 180	R0.1X2	3	18	50	4
4ACR 020 001 200	R0.1X2	3	20	50	4
4ACR 020 001 220	R0.1X2	3	22	60	4
4ACR 020 001 250	R0.1X2	3	25	60	4
4ACR 020 001 300	R0.1X2	3	30	70	4
4ACR 020 001 350	R0.1X2	3	35	70	4
4ACR 020 002 040	R0.2X2	3	4	45	4
4ACR 020 002 060	R0.2X2	3	6	45	4
4ACR 020 002 080	R0.2X2	3	8	45	4
4ACR 020 002 100	R0.2X2	3	10	45	4
4ACR 020 002 120	R0.2X2	3	12	45	4
4ACR 020 002 140	R0.2X2	3	14	50	4
4ACR 020 002 160	R0.2X2	3	16	50	4
4ACR 020 002 180	R0.2X2	3	18	50	4



DGR-15R

ZR-3R

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 020 002 200	R0.2X2	3	20	50	4
4ACR 020 002 220	R0.2X2	3	22	60	4
4ACR 020 002 250	R0.2X2	3	25	60	4
4ACR 020 002 300	R0.2X2	3	30	70	4
4ACR 020 002 350	R0.2X2	3	35	70	4
4ACR 020 003 040	R0.3X2	3	4	45	4
4ACR 020 003 060	R0.3X2	3	6	45	4
4ACR 020 003 080	R0.3X2	3	8	45	4
4ACR 020 003 100	R0.3X2	3	10	45	4
4ACR 020 003 120	R0.3X2	3	12	45	4
4ACR 020 003 140	R0.3X2	3	14	50	4
4ACR 020 003 160	R0.3X2	3	16	50	4
4ACR 020 003 180	R0.3X2	3	18	50	4
4ACR 020 003 200	R0.3X2	3	20	50	4
4ACR 020 003 220	R0.3X2	3	22	60	4
4ACR 020 003 250	R0.3X2	3	25	60	4
4ACR 020 003 300	R0.3X2	3	30	70	4
4ACR 020 003 350	R0.3X2	3	35	70	4
4ACR 020 005 040	R0.5X2	3	4	45	4
4ACR 020 005 060	R0.5X2	3	6	45	4
4ACR 020 005 080	R0.5X2	3	8	45	4
4ACR 020 005 100	R0.5X2	3	10	45	4
4ACR 020 005 120	R0.5X2	3	12	45	4
4ACR 020 005 140	R0.5X2	3	14	50	4
4ACR 020 005 160	R0.5X2	3	16	50	4
4ACR 020 005 180	R0.5X2	3	18	50	4
4ACR 020 005 200	R0.5X2	3	20	50	4
4ACR 020 005 220	R0.5X2	3	22	60	4
4ACR 020 005 250	R0.5X2	3	25	60	4
4ACR 020 005 300	R0.5X2	3	30	70	4
4ACR 020 005 350	R0.5X2	3	35	70	4
4ACR 025 001 060	R0.1X2.5	3.8	6	45	4
4ACR 025 001 080	R0.1X2.5	3.8	8	45	4
4ACR 025 001 100	R0.1X2.5	3.8	10	45	4
4ACR 025 001 120	R0.1X2.5	3.8	12	45	4
4ACR 025 001 160	R0.1X2.5	3.8	16	50	4
4ACR 025 001 200	R0.1X2.5	3.8	20	50	4
4ACR 025 001 250	R0.1X2.5	3.8	25	60	4
4ACR 025 001 300	R0.1X2.5	3.8	30	70	4
4ACR 025 002 060	R0.2X2.5	3.8	6	45	4
4ACR 025 002 080	R0.2X2.5	3.8	8	45	4
4ACR 025 002 100	R0.2X2.5	3.8	10	45	4
4ACR 025 002 120	R0.2X2.5	3.8	12	45	4
4ACR 025 002 160	R0.2X2.5	3.8	16	50	4
4ACR 025 002 200	R0.2X2.5	3.8	20	50	4
4ACR 025 002 250	R0.2X2.5	3.8	25	60	4
4ACR 025 002 300	R0.2X2.5	3.8	30	70	4
4ACR 025 003 060	R0.3X2.5	3.8	6	45	4
4ACR 025 003 080	R0.3X2.5	3.8	8	45	4
4ACR 025 003 100	R0.3X2.5	3.8	10	45	4
4ACR 025 003 120	R0.3X2.5	3.8	12	45	4
4ACR 025 003 160	R0.3X2.5	3.8	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 025 003 200	R0.3X2.5	3.8	20	50	4
4ACR 025 003 250	R0.3X2.5	3.8	25	60	4
4ACR 025 003 300	R0.3X2.5	3.8	30	70	4
4ACR 025 005 060	R0.5X2.5	3.8	6	45	4
4ACR 025 005 080	R0.5X2.5	3.8	8	45	4
4ACR 025 005 100	R0.5X2.5	3.8	10	45	4
4ACR 025 005 120	R0.5X2.5	3.8	12	45	4
4ACR 025 005 160	R0.5X2.5	3.8	16	50	4
4ACR 025 005 200	R0.5X2.5	3.8	20	50	4
4ACR 025 005 250	R0.5X2.5	3.8	25	60	4
4ACR 025 005 300	R0.5X2.5	3.8	30	70	4
4ACR 030 001 080	R0.1X3	4.5	8	50	6
4ACR 030 001 100	R0.1X3	4.5	10	50	4
4ACR 030 001 S06	R0.1X3	4.5	10	50	6
4ACR 030 001 120	R0.1X3	4.5	12	50	6
4ACR 030 001 160	R0.1X3	4.5	16	60	6
4ACR 030 001 200	R0.1X3	4.5	20	60	6
4ACR 030 001 250	R0.1X3	4.5	25	65	6
4ACR 030 001 300	R0.1X3	4.5	30	70	6
4ACR 030 001 350	R0.1X3	4.5	35	80	6
4ACR 030 001 400	R0.1X3	4.5	40	80	6
4ACR 030 001 500	R0.1X3	4.5	50	100	6
4ACR 030 002 080	R0.2X3	4.5	8	50	6
4ACR 030 002 100	R0.2X3	4.5	10	50	3
4ACR 030 002 S04	R0.2X3	4.5	10	50	4
4ACR 030 002 S06	R0.2X3	4.5	10	50	6
4ACR 030 002 120	R0.2X3	4.5	12	50	6
4ACR 030 002 160	R0.2X3	4.5	16	60	6
4ACR 030 002 200	R0.2X3	4.5	20	60	6
4ACR 030 002 250	R0.2X3	4.5	25	65	6
4ACR 030 002 300	R0.2X3	4.5	30	70	6
4ACR 030 002 350	R0.2X3	4.5	35	80	6
4ACR 030 002 400	R0.2X3	4.5	40	80	6
4ACR 030 002 500	R0.2X3	4.5	50	100	6
4ACR 030 003 080	R0.3X3	4.5	8	50	6
4ACR 030 003 100	R0.3X3	4.5	10	50	3
4ACR 030 003 S04	R0.3X3	4.5	10	50	4
4ACR 030 003 S06	R0.3X3	4.5	10	50	6
4ACR 030 003 120	R0.3X3	4.5	12	50	6
4ACR 030 003 160	R0.3X3	4.5	16	60	6
4ACR 030 003 200	R0.3X3	4.5	20	60	6
4ACR 030 003 250	R0.3X3	4.5	25	65	6
4ACR 030 003 300	R0.3X3	4.5	30	70	6
4ACR 030 003 350	R0.3X3	4.5	35	80	6
4ACR 030 003 400	R0.3X3	4.5	40	80	6
4ACR 030 003 500	R0.3X3	4.5	50	100	6
4ACR 030 005 080	R0.5X3	4.5	8	50	6
4ACR 030 005 100	R0.5X3	4.5	10	50	3
4ACR 030 005 S04	R0.5X3	4.5	10	50	4
4ACR 030 005 S06	R0.5X3	4.5	10	50	6
4ACR 030 005 120	R0.5X3	4.5	12	50	6
4ACR 030 005 160	R0.5X3	4.5	16	60	6

4ACR, Corner



0028-1SR 28-38

Unit : mm

4ACR, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 030 005 200	R0.5 X3	4.5	20	60	6
4ACR 030 005 250	R0.5 X3	4.5	25	65	6
4ACR 030 005 300	R0.5 X3	4.5	30	70	6
4ACR 030 005 350	R0.5 X3	4.5	35	75	6
4ACR 030 005 400	R0.5 X3	4.5	40	80	6
4ACR 030 005 500	R0.5 X3	4.5	50	100	6
4ACR 030 010 080	R1.0 X3	4.5	8	50	6
4ACR 030 010 100	R1.0 X3	4.5	10	50	3
4ACR 030 010 S04	R1.0 X3	4.5	10	50	4
4ACR 030 010 S06	R1.0 X3	4.5	10	50	6
4ACR 030 010 120	R1.0 X3	4.5	12	50	6
4ACR 030 010 160	R1.0 X3	4.5	16	60	6
4ACR 030 010 200	R1.0 X3	4.5	20	60	6
4ACR 030 010 250	R1.0 X3	4.5	25	65	6
4ACR 030 010 300	R1.0 X3	4.5	30	70	6
4ACR 030 010 350	R1.0 X3	4.5	35	80	6
4ACR 030 010 400	R1.0 X3	4.5	40	80	6
4ACR 030 010 500	R1.0 X3	4.5	50	100	6
4ACR 040 001 080	R0.1 X4	6	8	50	6
4ACR 040 001 100	R0.1 X4	6	10	50	6
4ACR 040 001 120	R0.1 X4	6	12	50	4
4ACR 040 001 S06	R0.1 X4	6	12	50	6
4ACR 040 001 160	R0.1 X4	6	16	60	6
4ACR 040 001 200	R0.1 X4	6	20	60	6
4ACR 040 001 250	R0.1 X4	6	25	65	6
4ACR 040 001 300	R0.1 X4	6	30	70	6
4ACR 040 001 350	R0.1 X4	6	35	80	6
4ACR 040 001 400	R0.1 X4	6	40	80	6
4ACR 040 001 450	R0.1 X4	6	45	90	6
4ACR 040 001 500	R0.1 X4	6	50	100	6
4ACR 040 002 080	R0.2 X4	6	8	50	6
4ACR 040 002 100	R0.2 X4	6	10	50	6
4ACR 040 002 120	R0.2 X4	6	12	50	4
4ACR 040 002 S06	R0.2 X4	6	12	50	6
4ACR 040 002 160	R0.2 X4	6	16	60	6
4ACR 040 002 200	R0.2 X4	6	20	60	6
4ACR 040 002 250	R0.2 X4	6	25	65	6
4ACR 040 002 300	R0.2 X4	6	30	70	6
4ACR 040 002 350	R0.2 X4	6	35	80	6
4ACR 040 002 400	R0.2 X4	6	40	80	6
4ACR 040 002 450	R0.2 X4	6	45	90	6
4ACR 040 002 500	R0.2 X4	6	50	100	6
4ACR 040 003 080	R0.3 X4	6	8	50	6
4ACR 040 003 100	R0.3 X4	6	10	50	6
4ACR 040 003 120	R0.3 X4	6	12	50	4
4ACR 040 003 S06	R0.3 X4	6	12	50	6
4ACR 040 003 160	R0.3 X4	6	16	60	6
4ACR 040 003 200	R0.3 X4	6	20	60	6
4ACR 040 003 250	R0.3 X4	6	25	65	6
4ACR 040 003 300	R0.3 X4	6	30	70	6
4ACR 040 003 350	R0.3 X4	6	35	80	6
4ACR 040 003 400	R0.3 X4	6	40	80	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 040 003 450	R0.3 X4	6	45	90	6
4ACR 040 003 500	R0.3 X4	6	50	100	6
4ACR 040 005 080	R0.5 X4	6	8	50	6
4ACR 040 005 100	R0.5 X4	6	10	50	6
4ACR 040 005 120	R0.5 X4	6	12	50	4
4ACR 040 005 S06	R0.5 X4	6	12	50	6
4ACR 040 005 160	R0.5 X4	6	16	50	4
4ACR 040 005 100L	R0.5 X4	6	16	100	4
4ACR 040 160 S06	R0.5 X4	6	16	60	6
4ACR 040 005 200	R0.5 X4	6	20	60	6
4ACR 040 005 250	R0.5 X4	6	25	65	6
4ACR 040 005 300	R0.5 X4	6	30	70	6
4ACR 040 005 350	R0.5 X4	6	35	80	6
4ACR 040 005 400	R0.5 X4	6	40	80	6
4ACR 040 005 450	R0.5 X4	6	45	90	6
4ACR 040 005 500	R0.5 X4	6	50	100	6
4ACR 040 010 080	R1.0 X4	6	8	50	6
4ACR 040 010 100	R1.0 X4	6	10	50	6
4ACR 040 010 120	R1.0 X4	6	12	50	4
4ACR 040 120 S06	R1.0 X4	6	12	50	6
4ACR 040 010 160	R1.0 X4	6	16	50	4
4ACR 040 010 S06	R1.0 X4	6	16	60	6
4ACR 040 010 200	R1.0 X4	6	20	60	6
4ACR 040 010 250	R1.0 X4	6	25	65	6
4ACR 040 010 300	R1.0 X4	6	30	70	6
4ACR 040 010 350	R1.0 X4	6	35	80	6
4ACR 040 010 400	R1.0 X4	6	40	80	6
4ACR 040 010 450	R1.0 X4	6	45	90	6
4ACR 040 010 500	R1.0 X4	6	50	100	6
4ACR 050 001 180	R0.1 X5	7.5	18	60	6
4ACR 050 001 300	R0.1 X5	7.5	30	70	6
4ACR 050 001 400	R0.1 X5	7.5	40	80	6
4ACR 050 001 500	R0.1 X5	7.5	50	100	6
4ACR 050 002 180	R0.2 X5	7.5	18	60	6
4ACR 050 002 300	R0.2 X5	7.5	30	70	6
4ACR 050 002 400	R0.2 X5	7.5	40	80	6
4ACR 050 002 500	R0.2 X5	7.5	50	100	6
4ACR 050 003 180	R0.3 X5	7.5	18	60	6
4ACR 050 003 300	R0.3 X5	7.5	30	70	6
4ACR 050 003 400	R0.3 X5	7.5	40	80	6
4ACR 050 003 500	R0.3 X5	7.5	50	100	6
4ACR 050 005 180	R0.5 X5	7.5	18	60	6
4ACR 050 005 300	R0.5 X5	7.5	30	70	6
4ACR 050 005 400	R0.5 X5	7.5	40	80	6
4ACR 050 005 500	R0.5 X5	7.5	50	100	6
4ACR 050 010 180	R1.0 X5	7.5	18	60	6
4ACR 050 010 300	R1.0 X5	7.5	30	70	6
4ACR 050 010 400	R1.0 X5	7.5	40	80	6
4ACR 050 010 500	R1.0 X5	7.5	50	100	6
4ACR 060 001 200	R0.1 X6	9	20	60	6
4ACR 060 001 400	R0.1 X6	9	40	90	6
4ACR 060 001 500	R0.1 X6	9	50	100	6



0.02R-1.5R 2R-3R

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 060 002 200	R0.2 X 6	9	20	60	6
4ACR 060 002 75L	R0.2 X 6	9	20	75	6
4ACR 060 002 100L	R0.2 X 6	9	20	100	6
4ACR 060 002 300	R0.2 X 6	9	30	80	6
4ACR 060 002 400	R0.2 X 6	9	40	90	6
4ACR 060 002 500	R0.2 X 6	9	50	100	6
4ACR 060 003 200	R0.3 X 6	9	20	60	6
4ACR 060 003 75L	R0.3 X 6	9	20	75	6
4ACR 060 003 100L	R0.3 X 6	9	20	100	6
4ACR 060 003 300	R0.3 X 6	9	30	80	6
4ACR 060 003 400	R0.3 X 6	9	40	90	6
4ACR 060 003 500	R0.3 X 6	9	50	100	6
4ACR 060 005 200	R0.5 X 6	9	20	60	6
4ACR 060 005 75L	R0.5 X 6	9	20	75	6
4ACR 060 005 100L	R0.5 X 6	9	20	100	6
4ACR 060 005 300	R0.5 X 6	9	30	80	6
4ACR 060 005 400	R0.5 X 6	9	40	90	6
4ACR 060 005 500	R0.5 X 6	9	50	100	6
4ACR 060 010 200	R1.0 X 6	9	20	60	6
4ACR 060 010 75L	R1.0 X 6	9	20	75	6
4ACR 060 010 100L	R1.0 X 6	9	20	100	6
4ACR 060 010 300	R1.0 X 6	9	30	80	6
4ACR 060 010 400	R1.0 X 6	9	40	90	6
4ACR 060 010 500	R1.0 X 6	9	50	100	6
4ACR 060 015 200	R1.5 X 6	9	20	60	6
4ACR 060 015 75L	R1.5 X 6	9	20	75	6
4ACR 060 015 100L	R1.5 X 6	9	20	100	6
4ACR 060 015 300	R1.5 X 6	9	30	80	6
4ACR 060 015 400	R1.5 X 6	9	40	90	6
4ACR 060 015 500	R1.5 X 6	9	50	100	6
4ACR 060 020 200	R2.0 X 6	9	20	60	6
4ACR 060 020 75L	R2.0 X 6	9	20	75	6
4ACR 060 020 100L	R2.0 X 6	9	20	100	6
4ACR 060 020 400	R2.0 X 6	9	40	90	6
4ACR 080 001 240	R0.1 X 8	12	24	65	8
4ACR 080 002 240	R0.2 X 8	12	24	65	8
4ACR 080 002 75L	R0.2 X 8	12	24	75	8
4ACR 080 002 100L	R0.2 X 8	12	24	100	8
4ACR 080 003 240	R0.3 X 8	12	24	65	8
4ACR 080 003 75L	R0.3 X 8	12	24	75	8
4ACR 080 003 100L	R0.3 X 8	12	24	100	8
4ACR 080 005 240	R0.5 X 8	12	24	65	8
4ACR 080 005 75L	R0.5 X 8	12	24	75	8
4ACR 080 005 100L	R0.5 X 8	12	24	100	8
4ACR 080 005 300	R0.5 X 8	12	30	90	8
4ACR 080 005 400	R0.5 X 8	12	40	100	8
4ACR 080 010 240	R1.0 X 8	12	24	65	8
4ACR 080 010 75L	R1.0 X 8	12	24	75	8
4ACR 080 010 100L	R1.0 X 8	12	24	100	8
4ACR 080 010 125L	R1.0 X 8	12	24	125	8
4ACR 080 010 300	R1.0 X 8	12	30	90	8
4ACR 080 010 400	R1.0 X 8	12	40	100	8

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
4ACR 080 015 240	R1.5 X 8	12	24	65	8
4ACR 080 015 75L	R1.5 X 8	12	24	75	8
4ACR 080 015 100L	R1.5 X 8	12	24	100	8
4ACR 080 015 400	R1.5 X 8	12	40	100	8
4ACR 080 020 240	R2.0 X 8	12	24	65	8
4ACR 080 020 75L	R2.0 X 8	12	24	75	8
4ACR 080 020 300	R2.0 X 8	12	30	90	8
4ACR 100 002 300	R0.2 X 10	15	30	70	10
4ACR 100 002 75L	R0.2 X 10	15	30	75	10
4ACR 100 002 100L	R0.2 X 10	15	30	100	10
4ACR 100 003 300	R0.3 X 10	15	30	70	10
4ACR 100 003 75L	R0.3 X 10	15	30	75	10
4ACR 100 003 100L	R0.3 X 10	15	30	100	10
4ACR 100 005 300	R0.5 X 10	15	30	70	10
4ACR 100 005 75L	R0.5 X 10	15	30	75	10
4ACR 100 005 100L	R0.5 X 10	15	30	100	10
4ACR 100 005 400	R0.5 X 10	15	40	100	10
4ACR 100 010 300	R1.0 X 10	15	30	70	10
4ACR 100 010 75L	R1.0 X 10	15	30	75	10
4ACR 100 010 100L	R1.0 X 10	15	30	100	10
4ACR 100 010 150L	R1.0 X 10	15	30	150	10
4ACR 100 010 400	R1.0 X 10	15	40	100	10
4ACR 100 015 300	R1.5 X 10	15	30	70	10
4ACR 100 015 75L	R1.5 X 10	15	30	75	10
4ACR 100 015 100L	R1.5 X 10	15	30	100	10
4ACR 100 015 400	R1.5 X 10	15	40	100	10
4ACR 100 020 300	R2.0 X 10	15	30	70	10
4ACR 100 020 75L	R2.0 X 10	15	30	75	10
4ACR 100 020 100L	R2.0 X 10	15	30	100	10
4ACR 100 020 400	R2.0 X 10	15	40	100	10
4ACR 100 025 300	R2.5 X 10	15	30	70	10
4ACR 120 003 300	R0.3 X 12	18	30	80	12
4ACR 120 003 110L	R0.3 X 12	18	30	110	12
4ACR 120 005 300	R0.5 X 12	18	30	80	12
4ACR 120 005 110L	R0.5 X 12	18	30	110	12
4ACR 120 005 150L	R0.5 X 12	18	30	150	12
4ACR 120 005 400	R0.5 X 12	18	40	110	12
4ACR 120 010 300	R1.0 X 12	18	30	80	12
4ACR 120 010 110L	R1.0 X 12	18	30	110	12
4ACR 120 010 150L	R1.0 X 12	18	30	150	12
4ACR 120 010 400	R1.0 X 12	18	40	110	12
4ACR 120 015 300	R1.5 X 12	18	30	80	12
4ACR 120 015 110L	R1.5 X 12	18	30	110	12
4ACR 120 015 400	R1.5 X 12	18	40	110	12
4ACR 120 020 300	R2.0 X 12	18	30	80	12
4ACR 120 020 110L	R2.0 X 12	18	30	110	12
4ACR 120 020 150L	R2.0 X 12	18	30	150	12
4ACR 120 020 200L	R2.0 X 12	18	30	200	12
4ACR 120 020 400	R2.0 X 12	18	40	110	12
4ACR 120 030 300	R3.0 X 12	18	30	80	12
4ACR 120 030 110L	R3.0 X 12	18	30	110	12

4ACR, Corner



2 Flutes Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.



Size	D Tolerance
D ≤ φ5	+0~-0.01
φ6~φ12	+0~-0.015
D ≥ φ14	+0~-0.02

Unit : mm

2ANR, Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ANR 002 0002 S04	0.2 XR0.02	0.4	45	4
2ANR 002 0005 S04	0.2 XR0.05	0.4	45	4
2ANR 003 0002 S04	0.3 XR0.02	0.6	45	4
2ANR 003 0005 S04	0.3 XR0.05	0.6	45	4
2ANR 003 001 S04	0.3 XR0.1	0.6	45	4
2ANR 004 0002 S04	0.4 XR0.02	0.8	45	4
2ANR 004 0005 S04	0.4 XR0.05	0.8	45	4
2ANR 004 001 S04	0.4 XR0.1	0.8	45	4
2ANR 005 0002 S04	0.5 XR0.02	1	45	4
2ANR 005 0005 S04	0.5 XR0.05	1	45	4
2ANR 005 001 S04	0.5 XR0.1	1	45	4
2ANR 006 0002 S04	0.6 XR0.02	1.2	45	4
2ANR 006 0005 S04	0.6 XR0.05	1.2	45	4
2ANR 006 001 S04	0.6 XR0.1	1.2	45	4
2ANR 006 002 S04	0.6 XR0.2	1.2	45	4
2ANR 007 0005 S04	0.7 XR0.05	1.4	45	4
2ANR 007 001 S04	0.7 XR0.1	1.4	45	4
2ANR 007 002 S04	0.7 XR0.2	1.4	45	4
2ANR 008 0002 S04	0.8 XR0.02	1.6	45	4
2ANR 008 0005 S04	0.8 XR0.05	1.6	45	4
2ANR 008 001 S04	0.8 XR0.1	1.6	45	4
2ANR 008 002 S04	0.8 XR0.2	1.6	45	4
2ANR 009 0005 S04	0.9 XR0.05	1.8	45	4
2ANR 009 001 S04	0.9 XR0.1	1.8	45	4
2ANR 010 0002 S04	1 XR0.02	2.5	45	4
2ANR 010 0005 S04	1 XR0.05	2.5	45	4
2ANR 010 001 S04	1 XR0.1	2.5	45	4
2ANR 010 002 S04	1 XR0.2	2.5	45	4
2ANR 010 003 S04	1 XR0.3	2.5	45	4
2ANR 012 0002 S04	1.2 XR0.02	3.2	45	4
2ANR 012 0005 S04	1.2 XR0.05	3.2	45	4
2ANR 012 001 S04	1.2 XR0.1	3.2	45	4
2ANR 012 002 S04	1.2 XR0.2	3.2	45	4
2ANR 012 003 S04	1.2 XR0.3	3.2	45	4
2ANR 015 0002 S04	1.5 XR0.02	4	45	4
2ANR 015 0005 S04	1.5 XR0.05	4	45	4
2ANR 015 001 S04	1.5 XR0.1	4	45	4
2ANR 015 002 S04	1.5 XR0.2	4	45	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ANR 015 003 S04	1.5 XR0.3	4	45	4
2ANR 015 005 S04	1.5 XR0.5	4	45	4
2ANR 020 0002 S04	2 XR0.02	6	45	4
2ANR 020 0005 S04	2 XR0.05	6	45	4
2ANR 020 001 S04	2 XR0.1	6	45	4
2ANR 020 002 S04	2 XR0.2	6	45	4
2ANR 020 003 S04	2 XR0.3	6	45	4
2ANR 020 005 S04	2 XR0.5	6	45	4
2ANR 025 0005 S04	2.5 XR0.05	6	50	4
2ANR 025 001 S04	2.5 XR0.1	6	50	4
2ANR 025 002 S04	2.5 XR0.2	6	50	4
2ANR 025 003 S04	2.5 XR0.3	6	50	4
2ANR 025 005 S04	2.5 XR0.5	6	50	4
2ANR 030 0005 S06	3 XR0.05	8	60	6
2ANR 030 001 S06	3 XR0.1	8	60	6
2ANR 030 002 S06	3 XR0.2	8	60	6
2ANR 030 003 S06	3 XR0.3	8	60	6
2ANR 030 005 S06	3 XR0.5	8	60	6
2ANR 030 010 S06	3 XR1.0	8	60	6
2ANR 035 001 S06	3.5 XR0.1	9	70	6
2ANR 035 002 S06	3.5 XR0.2	9	70	6
2ANR 035 003 S06	3.5 XR0.3	9	70	6
2ANR 035 005 S06	3.5 XR0.5	9	70	6
2ANR 035 010 S06	3.5 XR1.0	9	70	6
2ANR 040 0005 S06	4 XR0.05	10	60	4
2ANR 040 0005 S06	4 XR0.05	10	70	6
2ANR 040 001 S06	4 XR0.1	10	60	4
2ANR 040 001 S06	4 XR0.1	10	70	6
2ANR 040 002 S06	4 XR0.2	10	60	4
2ANR 040 002 S06	4 XR0.2	10	70	6
2ANR 040 003 S06	4 XR0.3	10	60	4
2ANR 040 003 S06	4 XR0.3	10	70	6
2ANR 040 005 S06	4 XR0.5	10	60	4
2ANR 040 005 S06	4 XR0.5	10	70	6
2ANR 040 010 S06	4 XR1.0	10	60	4
2ANR 040 010 S06	4 XR1.0	10	70	6
2ANR 045 001 S06	4.5 XR0.1	11	75	6
2ANR 045 002 S06	4.5 XR0.2	11	75	6



Unit : mm

2ANR, Corner

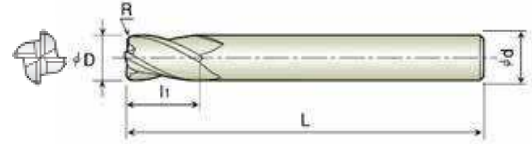
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ANR 045 003 S06	4.5 XR0.3	11	75	6
2ANR 045 005 S06	4.5 XR0.5	11	75	6
2ANR 050 001 S06	5 XR0.1	13	75	6
2ANR 050 002 S06	5 XR0.2	13	75	6
2ANR 050 003 S06	5 XR0.3	13	75	6
2ANR 050 005 S06	5 XR0.5	13	75	6
2ANR 050 010 S06	5 XR1.0	13	75	6
2ANR 060 0005 060	6 XR0.05	11	60	6
2ANR 060 0005 090	6 XR0.05	13	90	6
2ANR 060 001 060	6 XR0.1	11	60	6
2ANR 060 001 090	6 XR0.1	13	90	6
2ANR 060 002 060	6 XR0.2	11	60	6
2ANR 060 002 090	6 XR0.2	13	90	6
2ANR 060 003 060	6 XR0.3	11	60	6
2ANR 060 003 090	6 XR0.3	13	90	6
2ANR 060 005 060	6 XR0.5	11	60	6
2ANR 060 005 090	6 XR0.5	13	90	6
2ANR 060 010 060	6 XR1.0	11	60	6
2ANR 060 010 090	6 XR1.0	13	90	6
2ANR 060 015 060	6 XR1.5	11	60	6
2ANR 060 015 090	6 XR1.5	13	90	6
2ANR 060 020 060	6 XR2.0	11	60	6
2ANR 060 020 090	6 XR2.0	13	90	6
2ANR 060 025 090	6 XR2.5	13	90	6
2ANR 080 001 070	8 XR0.1	16	70	8
2ANR 080 001 100	8 XR0.1	19	100	8
2ANR 080 002 070	8 XR0.2	16	70	8
2ANR 080 002 100	8 XR0.2	19	100	8
2ANR 080 003 070	8 XR0.3	16	70	8
2ANR 080 003 100	8 XR0.3	19	100	8
2ANR 080 005 070	8 XR0.5	16	70	8
2ANR 080 005 100	8 XR0.5	19	100	8
2ANR 080 010 070	8 XR1.0	16	70	8
2ANR 080 010 100	8 XR1.0	19	100	8
2ANR 080 015 070	8 XR1.5	16	70	8
2ANR 080 015 100	8 XR1.5	19	100	8
2ANR 080 020 070	8 XR2.0	16	70	8
2ANR 080 020 100	8 XR2.0	19	100	8
2ANR 080 025 100	8 XR2.5	19	100	8
2ANR 080 030 100	8 XR3.0	19	100	8
2ANR 080 035 100	8 XR3.5	19	100	8
2ANR 100 001 075	10 XR0.1	19	75	10
2ANR 100 001 100	10 XR0.1	22	100	10
2ANR 100 002 075	10 XR0.2	19	75	10
2ANR 100 002 100	10 XR0.2	22	100	10
2ANR 100 003 075	10 XR0.3	19	75	10
2ANR 100 003 100	10 XR0.3	22	100	10
2ANR 100 005 075	10 XR0.5	19	75	10
2ANR 100 005 100	10 XR0.5	22	100	10
2ANR 100 010 075	10 XR1.0	19	75	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ANR 100 010 100	10 XR1.0	22	100	10
2ANR 100 015 075	10 XR1.5	19	75	10
2ANR 100 015 100	10 XR1.5	22	100	10
2ANR 100 020 075	10 XR2.0	19	75	10
2ANR 100 020 100	10 XR2.0	22	100	10
2ANR 100 025 100	10 XR2.5	22	100	10
2ANR 100 030 100	10 XR3.0	22	100	10
2ANR 100 040 100	10 XR4.0	22	100	10
2ANR 120 001 080	12 XR0.1	22	80	12
2ANR 120 001 110	12 XR0.1	26	110	12
2ANR 120 002 080	12 XR0.2	22	80	12
2ANR 120 002 110	12 XR0.2	26	110	12
2ANR 120 003 080	12 XR0.3	22	80	12
2ANR 120 003 110	12 XR0.3	26	110	12
2ANR 120 005 080	12 XR0.5	22	80	12
2ANR 120 005 110	12 XR0.5	26	110	12
2ANR 120 005 130	12 XR0.5	26	130	12
2ANR 120 010 080	12 XR1.0	22	80	12
2ANR 120 010 110	12 XR1.0	26	110	12
2ANR 120 010 130	12 XR1.0	26	130	12
2ANR 120 015 080	12 XR1.5	22	80	12
2ANR 120 015 110	12 XR1.5	26	110	12
2ANR 120 015 130	12 XR1.5	26	130	12
2ANR 120 020 080	12 XR2.0	22	80	12
2ANR 120 020 110	12 XR2.0	26	110	12
2ANR 120 020 130	12 XR2.0	26	130	12
2ANR 120 025 110	12 XR2.5	26	110	12
2ANR 120 030 110	12 XR3.0	26	110	12
2ANR 120 040 110	12 XR4.0	26	110	12
2ANR 120 050 110	12 XR5.0	26	110	12
2ANR 160 005 110	16 XR0.5	32	110	16
2ANR 160 005 150	16 XR0.5	32	150	16
2ANR 160 010 110	16 XR1.0	32	110	16
2ANR 160 010 150	16 XR1.0	32	150	16
2ANR 160 015 110	16 XR1.5	32	110	16
2ANR 160 020 110	16 XR2.0	32	110	16
2ANR 160 030 110	16 XR3.0	32	110	16
2ANR 200 005 110	20 XR0.5	38	110	20
2ANR 200 005 150	20 XR0.5	38	150	20
2ANR 200 010 110	20 XR1.0	38	110	20
2ANR 200 010 150	20 XR1.0	38	150	20
2ANR 200 015 110	20 XR1.5	38	110	20
2ANR 200 020 110	20 XR2.0	38	110	20
2ANR 200 030 110	20 XR3.0	38	110	20

4 Flutes Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
$D \leq \Phi 5$	+0~-0.01
$\Phi 6 \sim \Phi 12$	+0~-0.015
$D \geq \Phi 14$	+0~-0.02

Unit : mm

4ANR, Corner

Order Number	Diameter	Length of cut L1	Overall Length L	Shank Dia d
	R×D			
4ANR 010 0002 S04	R0.02 X 1	2.5	45	4
4ANR 010 0005 S04	R0.05 X 1	2.5	45	4
4ANR 010 001 S04	R0.1 X 1	2.5	45	4
4ANR 010 002 S04	R0.2 X 1	2.5	45	4
4ANR 010 003 S04	R0.3 X 1	2.5	45	4
4ANR 012 0002 S04	R0.02 X 1.2	3.2	45	4
4ANR 012 0005 S04	R0.05 X 1.2	3.2	45	4
4ANR 012 001 S04	R0.1 X 1.2	3.2	45	4
4ANR 012 002 S04	R0.2 X 1.2	3.2	45	4
4ANR 012 003 S04	R0.3 X 1.2	3.2	45	4
4ANR 015 0002 S04	R0.02 X 1.5	4	45	4
4ANR 015 0005 S04	R0.05 X 1.5	4	45	4
4ANR 015 001 S04	R0.1 X 1.5	4	45	4
4ANR 015 002 S04	R0.2 X 1.5	4	45	4
4ANR 015 003 S04	R0.3 X 1.5	4	45	4
4ANR 015 005 S04	R0.5 X 1.5	4	45	4
4ANR 020 0002 S04	R0.02 X 2	6	45	4
4ANR 020 0005 S04	R0.05 X 2	6	45	4
4ANR 020 001 S04	R0.1 X 2	6	45	4
4ANR 020 002 S04	R0.2 X 2	6	45	4
4ANR 020 003 S04	R0.3 X 2	6	45	4
4ANR 020 005 S04	R0.5 X 2	6	45	4
4ANR 025 0005 S04	R0.05 X 2.5	6	50	4
4ANR 025 001 S04	R0.1 X 2.5	6	50	4
4ANR 025 002 S04	R0.2 X 2.5	6	50	4
4ANR 025 003 S04	R0.3 X 2.5	6	50	4
4ANR 025 005 S04	R0.5 X 2.5	6	50	4
4ANR 030 0005 S06	R0.05 X 3	8	60	6
4ANR 030 001 S06	R0.1 X 3	8	60	6
4ANR 030 002 S06	R0.2 X 3	8	60	6
4ANR 030 003 S06	R0.3 X 3	8	60	6
4ANR 030 005 S06	R0.5 X 3	8	60	6
4ANR 030 010 S06	R1 X 3	8	60	6

Order Number	Diameter	Length of cut L1	Overall Length L	Shank Dia d
	R×D			
4ANR 035 001 S06	R0.1 X 3.5	9	70	6
4ANR 035 002 S06	R0.2 X 3.5	9	70	6
4ANR 035 003 S06	R0.3 X 3.5	9	70	6
4ANR 035 005 S06	R0.5 X 3.5	9	70	6
4ANR 035 010 S06	R1 X 3.5	9	70	6
4ANR 040 0005 060	R0.05 X 4	10	60	4
4ANR 040 0005 S06	R0.05 X 4	10	70	6
4ANR 040 001 060	R0.1 X 4	10	60	4
4ANR 040 001 S06	R0.1 X 4	10	70	6
4ANR 040 002 060	R0.2 X 4	10	60	4
4ANR 040 002 S06	R0.2 X 4	10	70	6
4ANR 040 003 060	R0.3 X 4	10	60	4
4ANR 040 003 S06	R0.3 X 4	10	70	6
4ANR 040 005 060	R0.5 X 4	10	60	4
4ANR 040 005 S06	R0.5 X 4	10	70	6
4ANR 040 010 060	R1 X 4	10	60	4
4ANR 040 010 S06	R1 X 4	10	70	6
4ANR 045 001 S06	R0.1 X 4.5	11	75	6
4ANR 045 002 S06	R0.2 X 4.5	11	75	6
4ANR 045 003 S06	R0.3 X 4.5	11	75	6
4ANR 045 005 S06	R0.5 X 4.5	11	75	6
4ANR 050 001 S06	R0.1 X 5	13	75	6
4ANR 050 002 S06	R0.2 X 5	13	75	6
4ANR 050 003 S06	R0.3 X 5	13	75	6
4ANR 050 005 S06	R0.5 X 5	13	75	6
4ANR 050 010 S06	R1 X 5	13	75	6
4ANR 060 0005 060	R0.05 X 6	11	60	6
4ANR 060 0005 090	R0.05 X 6	13	90	6
4ANR 060 001 060	R0.1 X 6	11	60	6
4ANR 060 001 090	R0.1 X 6	13	90	6
4ANR 060 002 060	R0.2 X 6	11	60	6
4ANR 060 002 090	R0.2 X 6	13	90	6
4ANR 060 003 060	R0.3 X 6	11	60	6



002R-15R 2R-3R

Unit : mm

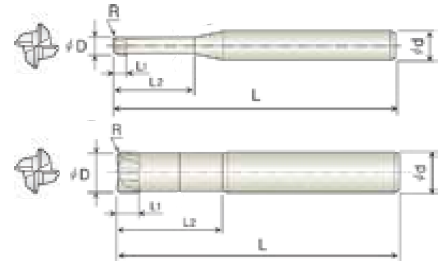
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
4ANR 060 003 090	R0.3 X 6	13	90	6
4ANR 060 005 060	R0.5 X 6	11	60	6
4ANR 060 005 090	R0.5 X 6	13	90	6
4ANR 060 010 060	R1 X 6	11	60	6
4ANR 060 010 090	R1 X 6	13	90	6
4ANR 060 015 060	R1.5 X 6	11	60	6
4ANR 060 015 090	R1.5 X 6	13	90	6
4ANR 060 020 060	R2 X 6	11	60	6
4ANR 060 020 090	R2 X 6	13	90	6
4ANR 060 025 090	R2.5 X 6	13	90	6
4ANR 080 001 070	R0.1 X 8	16	70	8
4ANR 080 001 100	R0.1 X 8	19	100	8
4ANR 080 002 070	R0.2 X 8	16	70	8
4ANR 080 002 100	R0.2 X 8	19	100	8
4ANR 080 003 070	R0.3 X 8	16	70	8
4ANR 080 003 100	R0.3 X 8	19	100	8
4ANR 080 005 070	R0.5 X 8	16	70	8
4ANR 080 005 100	R0.5 X 8	19	100	8
4ANR 080 010 070	R1 X 8	16	70	8
4ANR 080 010 100	R1 X 8	19	100	8
4ANR 080 015 070	R1.5 X 8	16	70	8
4ANR 080 015 100	R1.5 X 8	19	100	8
4ANR 080 020 070	R2 X 8	16	70	8
4ANR 080 020 100	R2 X 8	19	100	8
4ANR 080 025 100	R2.5 X 8	19	100	8
4ANR 080 030 100	R3 X 8	19	100	8
4ANR 080 350 100	R3.5 X 8	19	100	8
4ANR 100 001 075	R0.1 X 10	19	75	10
4ANR 100 001 100	R0.1 X 10	22	100	10
4ANR 100 002 075	R0.2 X 10	19	75	10
4ANR 100 002 100	R0.2 X 10	22	100	10
4ANR 100 003 075	R0.3 X 10	19	75	10
4ANR 100 003 100	R0.3 X 10	22	100	10
4ANR 100 005 075	R0.5 X 10	19	75	10
4ANR 100 005 100	R0.5 X 10	22	100	10
4ANR 100 010 075	R1 X 10	19	75	10
4ANR 100 010 100	R1 X 10	22	100	10
4ANR 100 015 075	R1.5 X 10	19	75	10
4ANR 100 015 100	R1.5 X 10	22	100	10
4ANR 100 020 075	R2 X 10	19	75	10
4ANR 100 020 100	R2 X 10	22	100	10
4ANR 100 025 100	R2.5 X 10	22	100	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
4ANR 100 030 100	R3 X 10	22	100	10
4ANR 100 040 100	R4 X 10	22	100	10
4ANR 120 001 080	R0.1 X 12	22	80	12
4ANR 120 001 110	R0.1 X 12	26	110	12
4ANR 120 002 080	R0.2 X 12	22	80	12
4ANR 120 002 110	R0.2 X 12	26	110	12
4ANR 120 003 080	R0.3 X 12	22	80	12
4ANR 120 003 110	R0.3 X 12	26	110	12
4ANR 120 005 080	R0.5 X 12	22	80	12
4ANR 120 005 110	R0.5 X 12	26	110	12
4ANR 120 005 130	R0.5 X 12	26	130	12
4ANR 120 010 080	R1 X 12	22	80	12
4ANR 120 010 110	R1 X 12	26	110	12
4ANR 120 010 130	R1 X 12	26	130	12
4ANR 120 015 080	R1.5 X 12	22	80	12
4ANR 120 015 110	R1.5 X 12	26	110	12
4ANR 120 015 130	R1.5 X 12	26	130	12
4ANR 120 020 080	R2 X 12	22	80	12
4ANR 120 020 110	R2 X 12	26	110	12
4ANR 120 020 130	R2 X 12	26	130	12
4ANR 120 025 110	R2.5 X 12	26	110	12
4ANR 120 030 110	R3 X 12	26	110	12
4ANR 120 040 110	R4 X 12	26	110	12
4ANR 120 050 110	R5 X 12	26	110	12
4ANR 160 005 110	R0.5 X 16	32	110	16
4ANR 160 005 150	R0.5 X 16	32	150	16
4ANR 160 010 110	R1 X 16	32	110	16
4ANR 160 010 150	R1 X 16	32	150	16
4ANR 160 015 110	R1.5 X 16	32	110	16
4ANR 160 020 110	R2 X 16	32	110	16
4ANR 160 030 110	R3 X 16	32	110	16
4ANR 200 005 110	R0.5 X 20	38	110	20
4ANR 200 005 150	R0.5 X 20	38	150	20
4ANR 200 010 110	R1 X 20	38	110	20
4ANR 200 010 150	R1 X 20	38	150	20
4ANR 200 015 110	R1.5 X 20	38	110	20
4ANR 200 020 110	R2 X 20	38	110	20
4ANR 200 030 110	R3 X 20	38	110	20

4ANR, Corner

4 Flutes Corner Radius for High Speed & Feedrate Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC50.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Ø6	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

4ACU, Corner

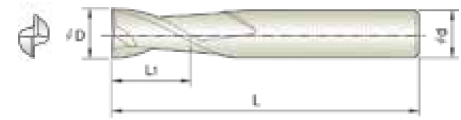
Order Number	Diameter	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
	R×D				
4ACU 015 003 040	R0.3 X 1.5	0.8	4	45	6
4ACU 020 005 060	R0.5 X 2	1	6	50	6
4ACU 020 005 70L	R0.5 X 2	1	6	70	6
4ACU 030 005 080	R0.5 X 3	1.5	8	50	6
4ACU 030 005 70L	R0.5 X 3	1.5	8	70	6
4ACU 030 010 080	R1.0 X 3	1.5	8	50	6
4ACU 030 010 200	R1.0 X 3	1.5	20	60	6
4ACU 040 005 120	R0.5 X 4	2	12	60	6
4ACU 040 005 70L	R0.5 X 4	2	12	70	6
4ACU 040 005 160	R0.5 X 4	2	16	60	6
4ACU 040 160 70L	R0.5 X 4	2	16	70	6
4ACU 040 010 120	R1.0 X 4	2	12	60	6
4ACU 040 010 70L	R1.0 X 4	2	12	70	6
4ACU 040 010 160	R1.0 X 4	2	16	60	6
4ACU 040 160 070	R1.0 X 4	2	16	70	6
4ACU 050 010 150	R1.0 X 5	2.5	15	60	6
4ACU 060 005 120	R0.5 X 6	3	12	60	6
4ACU 060 005 150	R0.5 X 6	3	15	60	6
4ACU 060 005 80L	R0.5 X 6	3	15	80	6
4ACU 060 005 200	R0.5 X 6	3	20	80	6
4ACU 060 005 300	R0.5 X 6	3	30	80	6
4ACU 060 010 150	R1.0 X 6	3	15	60	6
4ACU 060 010 80L	R1.0 X 6	3	15	80	6
4ACU 060 010 200	R1.0 X 6	3	20	80	6
4ACU 060 010 300	R1.0 X 6	3	30	80	6
4ACU 060 015 150	R1.5 X 6	3	15	60	6

Order Number	Diameter	Length of cut L1	Effective Length L2	Overall Length L	Shank Dia d
	R×D				
4ACU 080 005 200	R0.5 X 8	4	20	65	8
4ACU 080 005 90L	R0.5 X 8	4	20	90	8
4ACU 080 005 100L	R0.5 X 8	4	20	100	8
4ACU 080 005 400	R0.5 X 8	4	40	90	8
4ACU 080 010 200	R1.0 X 8	4	20	65	8
4ACU 080 010 90L	R1.0 X 8	4	20	90	8
4ACU 080 010 100L	R1.0 X 8	4	20	100	8
4ACU 080 010 300	R1.0 X 8	4	30	90	8
4ACU 080 010 400	R1.0 X 8	4	40	90	8
4ACU 080 020 200	R2.0 X 8	4	20	65	8
4ACU 080 020 100L	R2.0 X 8	4	20	100	8
4ACU 100 005 250	R0.5 X 10	5	25	70	10
4ACU 100 005 100L	R0.5 X 10	5	25	100	10
4ACU 100 010 250	R1.0 X 10	5	25	70	10
4ACU 100 010 100L	R1.0 X 10	5	25	100	10
4ACU 100 010 110L	R1.0 X 10	5	25	110	10
4ACU 100 010 400	R1.0 X 10	5	40	100	10
4ACU 100 020 200	R2.0 X 10	5	20	70	10
4ACU 100 020 250	R2.0 X 10	5	25	70	10
4ACU 100 020 110L	R2.0 X 10	5	25	110	10
4ACU 120 010 300	R1.0 X 12	6	30	80	12
4ACU 120 010 110L	R1.0 X 12	6	30	110	12
4ACU 120 010 400	R1.0 X 12	6	40	110	12
4ACU 120 020 300	R2.0 X 12	6	30	80	12
4ACU 120 020 110L	R2.0 X 12	6	30	110	12
4ACU 120 020 400	R2.0 X 12	6	40	110	12

2 Flutes Square End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D ≤ 6	+0~-0.010mm
D ≥ 6	+0~-0.015mm

Unit : mm

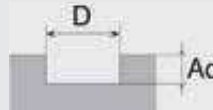
2ACE, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ACE 001 002 S04	0.1	0.2	45	4
2ACE 002 004 S04	0.2	0.4	45	4
2ACE 003 006 S04	0.3	0.6	45	4
2ACE 004 008 S04	0.4	0.8	45	4
2ACE 005 010 S03	0.5	1	45	3
2ACE 005 010 S04	0.5	1	45	4
2ACE 006 012 S03	0.6	1.2	45	3
2ACE 006 012 S04	0.6	1.2	45	4
2ACE 007 014 S04	0.7	1.4	45	4
2ACE 008 016 S03	0.8	1.6	45	3
2ACE 008 016 S04	0.8	1.6	45	4
2ACE 009 018 S04	0.9	1.8	45	4
2ACE 010 025 S03	1	2.5	45	3
2ACE 010 025 S04	1	2.5	45	4
2ACE 010 025 S06	1	2.5	45	6
2ACE 012 040 S03	1.2	4	45	3
2ACE 012 040 S04	1.2	4	45	4
2ACE 012 040 S06	1.2	4	45	6
2ACE 014 040 S06	1.4	4	45	6
2ACE 015 040 S03	1.5	4	45	3
2ACE 015 040 S04	1.5	4	45	4
2ACE 015 040 S06	1.5	4	45	6
2ACE 016 040 S06	1.6	4	45	6
2ACE 018 045 S06	1.8	4.5	45	6
2ACE 020 060 S03	2	6	45	3
2ACE 020 060 S04	2	6	45	4
2ACE 020 060 S06	2	6	45	6
2ACE 022 060 S06	2.2	6	45	6
2ACE 024 080 S06	2.4	8	50	6
2ACE 025 080 S03	2.5	8	50	3
2ACE 025 080 S04	2.5	8	50	4
2ACE 025 080 S06	2.5	8	50	6
2ACE 026 080 S06	2.6	8	50	6
2ACE 028 080 S06	2.8	8	50	6
2ACE 030 080 S04	3	8	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ACE 030 100 S03	3	10	50	3
2ACE 030 100 S06	3	10	50	6
2ACE 035 100 S06	3.5	10	50	6
2ACE 040 120 050	4	12	50	4
2ACE 040 120 S06	4	12	50	6
2ACE 045 120 S06	4.5	12	50	6
2ACE 050 150 S06	5	15	50	6
2ACE 055 150 S06	5.5	15	50	6
2ACE 060 150 050	6	15	50	6
2ACE 065 160 S08	6.5	16	60	8
2ACE 070 200 S08	7	20	65	8
2ACE 075 200 S08	7.5	20	65	8
2ACE 080 200 065	8	20	65	8
2ACE 085 200 S10	8.5	20	65	10
2ACE 090 250 S10	9	25	70	10
2ACE 095 250 S10	9.5	25	70	10
2ACE 100 250 070	10	25	70	10
2ACE 105 250 S12	10.5	25	75	12
2ACE 110 250 S12	11	25	75	12
2ACE 115 250 S12	11.5	25	75	12
2ACE 120 300 080	12	30	80	12
2ACE 130 350 S14	13	35	90	14
2ACE 140 350 090	14	35	90	14
2ACE 150 350 S16	15	35	100	16
2ACE 160 400 100	16	40	100	16
2ACE 180 450 100	18	45	100	18
2ACE 200 450 100	20	45	100	20

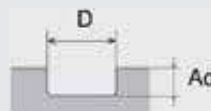
Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.1	0.01	38,000 ~ 50,000	50 ~ 80	0.005	32,000 ~ 45,000	50 ~ 80	0.003	30,000 ~ 40,000	50 ~ 80
0.2	0.02	30,000 ~ 50,000	60 ~ 240	0.01	28,000 ~ 42,000	60 ~ 240	0.005	25,000 ~ 38,000	50 ~ 100
0.3	0.03	30,000 ~ 48,000	60 ~ 350	0.015	25,000 ~ 40,000	60 ~ 350	0.008	22,000 ~ 35,000	60 ~ 150
0.4	0.04	25,000 ~ 40,000	150 ~ 500	0.02	20,000 ~ 35,000	150 ~ 500	0.01	18,000 ~ 32,000	70 ~ 150
0.5	0.05	16,000 ~ 30,000	150 ~ 500	0.025	12,000 ~ 25,000	150 ~ 500	0.013	15,000 ~ 30,000	70 ~ 150
0.6	0.06	16,000 ~ 30,000	230 ~ 620	0.03	12,000 ~ 25,000	230 ~ 620	0.02	12,000 ~ 25,000	80 ~ 150
0.7	0.07	16,000 ~ 30,000	330 ~ 650	0.04	12,000 ~ 25,000	330 ~ 650	0.02	12,000 ~ 25,000	80 ~ 150
0.8	0.08	16,000 ~ 30,000	250 ~ 900	0.04	12,000 ~ 25,000	250 ~ 900	0.02	12,000 ~ 25,000	80 ~ 150
1	0.1	25,000 ~ 32,000	150 ~ 500	0.05	16,000 ~ 24,000	150 ~ 500	0.03	12,000 ~ 20,000	90 ~ 120
1.5	0.15	18,000 ~ 25,000	200 ~ 500	0.08	10,000 ~ 15,000	200 ~ 500	0.04	8,000 ~ 15,000	100 ~ 150
2	0.2	16,000 ~ 20,000	200 ~ 500	0.1	8,000 ~ 13,000	200 ~ 500	0.05	7,000 ~ 12,000	100 ~ 150
2.5	0.25	10,000 ~ 15,000	200 ~ 500	0.13	7,000 ~ 12,000	200 ~ 500	0.06	6,000 ~ 12,000	120 ~ 230
3	0.3	8,000 ~ 13,000	200 ~ 500	0.15	6,000 ~ 11,000	200 ~ 500	0.08	5,000 ~ 10,000	150 ~ 250
4	0.4	7,000 ~ 12,000	200 ~ 600	0.2	5,000 ~ 10,000	200 ~ 600	0.1	4,000 ~ 9,000	150 ~ 250
5	0.5	6,500 ~ 10,000	200 ~ 500	0.25	4,000 ~ 8,500	200 ~ 500	0.13	3,500 ~ 7,500	150 ~ 230
6	0.6	6,500 ~ 10,000	200 ~ 600	0.3	4,000 ~ 8,500	200 ~ 600	0.15	3,500 ~ 7,500	150 ~ 230
8	1.2	4,500 ~ 8,000	200 ~ 400	0.4	2,500 ~ 6,500	150 ~ 400	0.2	2,500 ~ 5,000	120 ~ 200
10	1.5	3,000 ~ 6,000	200 ~ 400	0.5	2,000 ~ 5,500	150 ~ 400	0.25	2,000 ~ 4,500	120 ~ 200
12	1.8	2,500 ~ 5,000	200 ~ 400	0.6	1,500 ~ 3,500	150 ~ 400	0.3	1,500 ~ 3,200	120 ~ 200

Depth of Cut



Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
1.5	0.030 ~ 0.050	28,000 ~ 38,000	2,500 ~ 6,000	0.030 ~ 0.050	20,000 ~ 30,000	2,000 ~ 5,000	0.005 ~ 0.015	15,000 ~ 25,000	1,000 ~ 4,000
2	0.050 ~ 0.100	25,000 ~ 35,000	3,500 ~ 8,000	0.050 ~ 0.100	20,000 ~ 28,000	2,500 ~ 7,000	0.005 ~ 0.025	15,000 ~ 22,000	1,500 ~ 6,000
3	0.050 ~ 0.100	20,000 ~ 27,000	5,000 ~ 8,000	0.050 ~ 0.100	15,000 ~ 23,000	4,000 ~ 7,000	0.008 ~ 0.025	10,000 ~ 18,000	3,000 ~ 6,000
4	0.050 ~ 0.100	13,000 ~ 18,000	5,000 ~ 8,000	0.050 ~ 0.100	8,000 ~ 15,000	4,000 ~ 7,000	0.008 ~ 0.050	6,000 ~ 12,000	3,000 ~ 6,000
5	0.050 ~ 0.150	8,000 ~ 13,000	5,000 ~ 8,000	0.050 ~ 0.150	6,500 ~ 10,000	4,000 ~ 7,000	0.030 ~ 0.050	4,500 ~ 8,000	3,000 ~ 6,000
6	0.050 ~ 0.150	8,000 ~ 13,000	5,000 ~ 8,000	0.050 ~ 0.150	6,500 ~ 10,000	4,000 ~ 7,000	0.010 ~ 0.050	4,500 ~ 8,000	3,000 ~ 6,000
8	0.050 ~ 0.150	6,000 ~ 9,500	5,000 ~ 9,000	0.050 ~ 0.150	5,000 ~ 7,500	4,000 ~ 8,000	0.020 ~ 0.050	4,000 ~ 6,500	3,000 ~ 7,000
10	0.050 ~ 0.150	6,000 ~ 8,000	5,000 ~ 10,000	0.050 ~ 0.150	4,000 ~ 7,000	4,000 ~ 9,000	0.020 ~ 0.050	3,000 ~ 5,500	3,000 ~ 7,000
12	0.050 ~ 0.150	5,000 ~ 7,000	5,000 ~ 10,000	0.050 ~ 0.150	4,000 ~ 6,000	4,000 ~ 9,000	0.020 ~ 0.050	3,000 ~ 5,000	3,000 ~ 7,000

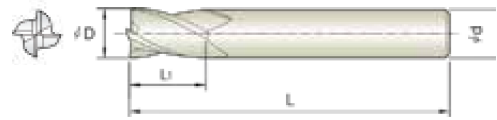
Depth of Cut



4 Flutes Square End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC52.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Ø6	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

4ACE, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4ACE 008 016 S04	0.8	1.6	45	4
4ACE 010 025 S04	1	2.5	45	4
4ACE 010 025 S06	1	2.5	45	6
4ACE 012 040 S04	1.2	4	45	4
4ACE 015 040 S04	1.5	4	45	4
4ACE 015 040 S06	1.5	4	45	6
4ACE 020 060 S04	2	6	45	4
4ACE 020 060 S06	2	6	45	6
4ACE 025 080 S04	2.5	8	45	4
4ACE 025 080 S06	2.5	8	45	6
4ACE 030 100 S03	3	10	50	3
4ACE 030 100 S04	3	10	50	4
4ACE 030 100 S06	3	10	50	6
4ACE 035 100 S06	3.5	10	50	6
4ACE 040 120 050	4	12	50	4
4ACE 040 120 S06	4	12	50	6
4ACE 045 120 S06	4.5	12	50	6
4ACE 050 150 S06	5	15	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4ACE 055 150 S06	5.5	15	50	6
4ACE 060 150 050	6	15	50	6
4ACE 060 150 075	6	15	75	6
4ACE 060 150 100	6	15	100	6
4ACE 070 200 S08	7	20	65	8
4ACE 080 200 065	8	20	65	8
4ACE 080 200 075	8	20	75	8
4ACE 080 200 100	8	20	100	8
4ACE 100 250 070	10	25	70	10
4ACE 100 250 075	10	25	75	10
4ACE 100 250 100	10	25	100	10
4ACE 120 300 080	12	30	80	12
4ACE 120 300 100	12	30	100	12
4ACE 140 350 090	14	35	90	14
4ACE 160 400 100	16	40	100	16
4ACE 180 450 100	18	45	100	18
4ACE 200 450 100	20	45	100	20

4ACE

• RPM : rev/min • Feed : mm/min

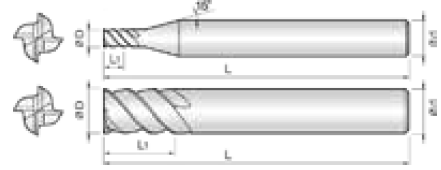
Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
0.8	0.04	15,000 ~ 28,000	250 ~ 900	0.04	12,000 ~ 25,000	250 ~ 900	0.01	10,000 ~ 20,000	100 ~ 650
1	0.05	12,000 ~ 25,000	400 ~ 2,000	0.05	10,000 ~ 20,000	300 ~ 1,800	0.02	8,000 ~ 18,000	200 ~ 1,200
1.2	0.06	10,000 ~ 25,000	500 ~ 2,000	0.06	9,000 ~ 20,000	300 ~ 1,600	0.02	7,000 ~ 18,000	200 ~ 1,200
1.5	0.08	9,000 ~ 23,000	700 ~ 2,000	0.08	8,000 ~ 20,000	400 ~ 1,600	0.03	7,000 ~ 18,000	200 ~ 1,200
2	0.1	7,000 ~ 20,000	800 ~ 2,000	0.1	6,000 ~ 18,000	400 ~ 1,600	0.04	5,000 ~ 15,000	200 ~ 1,200
3	0.3	5,000 ~ 16,000	800 ~ 2,000	0.3	5,000 ~ 15,000	400 ~ 1,600	0.06	4,000 ~ 10,000	200 ~ 1,200
4	0.4	4,500 ~ 14,000	800 ~ 2,000	0.4	4,000 ~ 10,000	400 ~ 2,000	0.08	3,000 ~ 8,000	200 ~ 1,200
5	0.5	3,500 ~ 12,000	600 ~ 1,500	0.5	3,000 ~ 8,000	400 ~ 1,000	0.1	2,500 ~ 6,000	250 ~ 800
6	0.6	3,500 ~ 12,000	600 ~ 1,500	0.6	3,000 ~ 8,000	400 ~ 1,000	0.12	2,500 ~ 6,000	250 ~ 800
8	1.2	2,500 ~ 10,000	450 ~ 1,000	0.8	2,500 ~ 7,000	350 ~ 900	0.16	2,000 ~ 5,000	300 ~ 700
10	1.5	2,000 ~ 7,500	500 ~ 1,000	1	2,000 ~ 5,000	300 ~ 800	0.2	2,000 ~ 4,500	300 ~ 700
12	1.8	1,800 ~ 7,000	500 ~ 1,000	1.2	2,000 ~ 4,000	300 ~ 800	0.24	1,500 ~ 4,000	300 ~ 650

Depth of Cut	Rd		
	Ad	Rd	Ad
	Ad = 1.5D Rd = 0.05D (0.8 ≤ D ≤ Φ2) Rd = 0.10D (3 ≤ D ≤ Φ6) Rd = 0.15D (7 ≤ D ≤ Φ12)		Rd = 0.03D

4 Flutes 43° Square End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Designed for high speed cutting of hardened steels over HRC50.
- Maximize the wear-resistance due to TiSiN coating.



Size	D Tolerance
D < Ø6	+0~-0.010mm
D ≥ Ø6	+0~-0.015mm

Unit : mm

4AEM, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AEM 010 020 S04	1	2	45	4
4AEM 010 020 S06	1	2	45	6
4AEM 015 040 S04	1.5	4	45	4
4AEM 015 040 S06	1.5	4	45	6
4AEM 020 050 S04	2	5	45	4
4AEM 020 050 S06	2	5	45	6
4AEM 030 080 S03	3	8	50	3
4AEM 030 080 S04	3	8	45	4
4AEM 030 080 S06	3	8	50	6
4AEM 040 100 060	4	10	60	4
4AEM 040 100 S06	4	10	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AEM 040 120 045	4	12	45	4
4AEM 050 130 S06	5	13	50	6
4AEM 060 150 050	6	15	50	6
4AEM 060 150 075	6	15	75	6
4AEM 080 200 065	8	20	65	8
4AEM 080 200 075	8	20	75	8
4AEM 100 250 070	10	25	70	10
4AEM 100 250 075	10	25	75	10
4AEM 120 300 080	12	30	80	12
4AEM 160 400 100	16	40	100	16
4AEM 200 450 100	20	45	100	20

4AEM

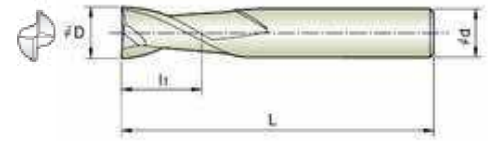
• RPM : rev./min • Feed : mm/min

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
1	0.05	12,000 ~ 25,000	400 ~ 2,000	0.05	10,000 ~ 20,000	300 ~ 1,800	0.02	8,000 ~ 18,000	200 ~ 1,200
1.2	0.06	10,000 ~ 25,000	500 ~ 2,000	0.06	9,000 ~ 20,000	300 ~ 1,600	0.02	7,000 ~ 18,000	200 ~ 1,200
1.5	0.08	9,000 ~ 23,000	700 ~ 2,000	0.08	8,000 ~ 20,000	400 ~ 1,600	0.03	7,000 ~ 18,000	200 ~ 1,200
2	0.1	7,000 ~ 20,000	800 ~ 2,000	0.1	6,000 ~ 18,000	400 ~ 1,600	0.04	5,000 ~ 15,000	200 ~ 1,200
3	0.3	5,000 ~ 16,000	800 ~ 2,000	0.3	5,000 ~ 15,000	400 ~ 1,600	0.06	4,000 ~ 10,000	200 ~ 1,200
4	0.4	4,500 ~ 14,000	800 ~ 2,000	0.4	4,000 ~ 10,000	400 ~ 2,000	0.08	3,000 ~ 8,000	200 ~ 1,200
5	0.5	3,500 ~ 12,000	600 ~ 1,500	0.5	3,000 ~ 8,000	400 ~ 1,000	0.1	2,500 ~ 6,000	250 ~ 800
6	0.6	3,500 ~ 12,000	600 ~ 1,500	0.6	3,000 ~ 8,000	400 ~ 1,000	0.12	2,500 ~ 6,000	250 ~ 800
8	1.2	2,500 ~ 10,000	450 ~ 1,000	1.2	2,500 ~ 7,000	350 ~ 900	0.16	2,000 ~ 5,000	300 ~ 700
10	1.5	2,000 ~ 7,500	500 ~ 1,000	1.5	2,000 ~ 5,000	300 ~ 800	0.2	2,000 ~ 4,500	300 ~ 700
12	1.8	1,800 ~ 7,000	500 ~ 1,000	1.8	2,000 ~ 4,000	300 ~ 800	0.24	1,500 ~ 4,000	300 ~ 650

Depth of Cut	<p>Ad = 1.5D Rd = 0.05D (0.8 ≤ D ≤ φ2) Rd = 0.10D (3 ≤ D ≤ φ6) Rd = 0.15D (7 ≤ D ≤ φ12)</p>	<p>Rd = 0.03D</p>
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Φ1-Φ5 Φ6-Φ12 Φ14-Φ25



Size	D Tolerance
D ≤ Φ5	+0~-0.01
Φ6~Φ12	+0~-0.02
D ≥ Φ14	+0~-0.03

Unit : mm

2ALE, Square

2 Flutes Long Length End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ALE 010 030 S06	1	3	60	6
2ALE 010 050 S06	1	5	60	6
2ALE 010 070 S06	1	7	60	6
2ALE 010 100 S06	1	10	60	6
2ALE 010 120 S06	1	12	60	6
2ALE 010 150 S06	1	15	60	6
2ALE 015 060 S06	1.5	6	60	6
2ALE 015 080 S06	1.5	8	60	6
2ALE 015 100 S06	1.5	10	60	6
2ALE 015 150 S06	1.5	15	60	6
2ALE 015 200 S06	1.5	20	60	6
2ALE 020 100 S06	2	10	60	6
2ALE 020 120 S06	2	12	60	6
2ALE 020 150 S06	2	15	60	6
2ALE 020 200 S06	2	20	60	6
2ALE 030 120 S06	3	12	70	6
2ALE 030 150 S06	3	15	70	6
2ALE 030 200 S06	3	20	70	6
2ALE 030 250 S06	3	25	70	6
2ALE 030 300 S06	3	30	70	6
2ALE 040 150 S06	4	15	70	6
2ALE 040 200 S06	4	20	70	6
2ALE 040 300 S06	4	30	75	6
2ALE 040 350 S06	4	35	75	6
2ALE 040 400 S06	4	40	80	6
2ALE 050 200 S06	5	20	70	6
2ALE 050 250 S06	5	25	70	6
2ALE 050 300 S06	5	30	75	6
2ALE 050 400 S06	5	40	80	6
2ALE 060 200 070	6	20	70	6
2ALE 060 200 100	6	20	100	6
2ALE 060 250 075	6	25	75	6
2ALE 060 300 080	6	30	80	6
2ALE 060 350 080	6	35	80	6
2ALE 060 400 090	6	40	90	6
2ALE 080 250 075	8	25	75	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2ALE 080 250 100	8	25	100	8
2ALE 080 300 080	8	30	80	8
2ALE 080 350 080	8	35	80	8
2ALE 080 400 090	8	40	90	8
2ALE 080 450 100	8	45	100	8
2ALE 080 500 100	8	50	100	8
2ALE 080 550 100	8	55	100	8
2ALE 100 300 080	10	30	80	10
2ALE 100 350 100	10	35	100	10
2ALE 100 400 100	10	40	100	10
2ALE 100 450 100	10	45	100	10
2ALE 100 500 100	10	50	100	10
2ALE 100 550 110	10	55	110	10
2ALE 100 600 110	10	60	110	10
2ALE 100 650 120	10	65	120	10
2ALE 100 700 120	10	70	120	10
2ALE 120 300 100	12	30	100	12
2ALE 120 350 100	12	35	100	12
2ALE 120 400 100	12	40	100	12
2ALE 120 450 100	12	45	100	12
2ALE 120 500 100	12	50	100	12
2ALE 120 550 110	12	55	110	12
2ALE 120 600 110	12	60	110	12
2ALE 120 700 130	12	70	130	12
2ALE 120 800 130	12	80	130	12
2ALE 140 500 110	14	50	110	14
2ALE 160 400 150	16	40	150	16
2ALE 160 550 120	16	55	120	16
2ALE 160 700 130	16	70	130	16
2ALE 160 800 150	16	80	150	16
2ALE 200 500 150	20	50	150	20
2ALE 200 600 130	20	60	130	20
2ALE 200 800 150	20	80	150	20
2ALE 200 1000 200	20	100	200	20
2ALE 250 750 150	25	75	150	25

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
1	1.0	10,000 ~ 15,000	40 ~ 80	1	7,000 ~ 12,000	40 ~ 80	0.5	7,000 ~ 12,000	40 ~ 80
1.5	1.5	9,000 ~ 13,000	40 ~ 80	1.5	6,000 ~ 10,000	40 ~ 80	0.75	6,000 ~ 10,000	40 ~ 80
2	2.0	5,000 ~ 8,000	40 ~ 80	2	3,000 ~ 6,000	40 ~ 80	1	3,000 ~ 6,000	40 ~ 80
2.5	2.5	4,500 ~ 7,000	40 ~ 80	2.5	2,500 ~ 5,000	40 ~ 80	1.25	2,500 ~ 5,000	40 ~ 80
3	3.0	4,000 ~ 6,000	40 ~ 80	3	2,000 ~ 4,000	40 ~ 80	1.5	2,000 ~ 4,000	40 ~ 80
4	4.0	3,000 ~ 5,000	50 ~ 100	4	1,500 ~ 3,000	50 ~ 100	2	1,500 ~ 3,000	50 ~ 100
5	5.0	2,500 ~ 4,500	50 ~ 100	5	1,500 ~ 2,500	50 ~ 100	2.5	1,500 ~ 2,500	50 ~ 100
6	6.0	2,000 ~ 4,000	50 ~ 100	6	1,500 ~ 2,000	50 ~ 100	3	1,500 ~ 2,000	50 ~ 100
8	8.0	1,800 ~ 2,500	50 ~ 100	8	1,800 ~ 2,500	50 ~ 100	4	1,800 ~ 2,500	50 ~ 100
10	10.0	1,500 ~ 2,000	50 ~ 100	10	1,500 ~ 2,000	50 ~ 100	5	1,500 ~ 2,000	50 ~ 100
12	12.0	1,200 ~ 1,800	40 ~ 80	12	600 ~ 1,000	40 ~ 80	6	600 ~ 1,000	40 ~ 80
16	16.0	800 ~ 1,500	40 ~ 80	16	400 ~ 800	40 ~ 80	8	400 ~ 800	40 ~ 80
20	20.0	700 ~ 1,200	40 ~ 80	20	300 ~ 700	40 ~ 80	10	300 ~ 700	40 ~ 80
25	25.0	500 ~ 800	40 ~ 80	25	250 ~ 600	40 ~ 80	12.5	250 ~ 600	40 ~ 80

Depth of Cut R_d
 Ad $R_d=0.05D$

Depth of Cut R_d
 Ad $R_d=0.02D$

Work Material	PREHARDENED STEELS NAK			HARDENED STEELS SKD61, STAVAX			HARDENED STEELS SKD11		
Hardness (HRc)	HRc30 ~ 45			HRc45 ~ 55			HRc55 ~ 65		
Outside Diameter	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)	Depth of Cut Ad(mm)	SPEED (min ⁻¹)	FEED (mm/min)
1.0	1.0	10,000 ~ 15,000	40 ~ 80	1	7,000 ~ 12,000	40 ~ 80	0.5	7,000 ~ 12,000	40 ~ 80
1.5	1.5	9,000 ~ 13,000	40 ~ 80	1.5	6,000 ~ 10,000	40 ~ 80	0.75	6,000 ~ 10,000	40 ~ 80
2.0	2.0	5,000 ~ 8,000	40 ~ 80	2	3,000 ~ 6,000	40 ~ 80	1	3,000 ~ 6,000	40 ~ 80
2.5	2.5	4,500 ~ 7,000	40 ~ 80	2.5	2,500 ~ 5,000	40 ~ 80	1.25	2,500 ~ 5,000	40 ~ 80
3.0	3.0	4,000 ~ 6,000	40 ~ 80	3	2,000 ~ 4,000	40 ~ 80	1.5	2,000 ~ 4,000	40 ~ 80
4.0	4.0	3,000 ~ 5,000	50 ~ 100	4	1,500 ~ 3,000	50 ~ 100	2	1,500 ~ 3,000	50 ~ 100
5.0	5.0	2,500 ~ 4,500	50 ~ 100	5	1,500 ~ 2,500	50 ~ 100	2.5	1,500 ~ 2,500	50 ~ 100
6.0	6.0	2,000 ~ 4,000	50 ~ 100	6	1,500 ~ 2,000	50 ~ 100	3	1,500 ~ 2,000	50 ~ 100
8.0	8.0	1,800 ~ 2,500	50 ~ 100	8	1,800 ~ 2,500	50 ~ 100	4	1,800 ~ 2,500	50 ~ 100
10.0	10.0	1,500 ~ 2,000	50 ~ 100	10	1,500 ~ 2,000	50 ~ 100	5	1,500 ~ 2,000	50 ~ 100
12.0	12.0	1,200 ~ 1,800	40 ~ 80	12	600 ~ 1,000	40 ~ 80	6	600 ~ 1,000	40 ~ 80
16.0	16.0	800 ~ 1,500	40 ~ 80	16	400 ~ 800	40 ~ 80	8	400 ~ 800	40 ~ 80
20.0	20.0	700 ~ 1,200	40 ~ 80	20	300 ~ 700	40 ~ 80	10	300 ~ 700	40 ~ 80
25.0	25.0	500 ~ 800	40 ~ 80	25	250 ~ 600	40 ~ 80	12.5	250 ~ 600	40 ~ 80

Depth of Cut R_d
 Ad $R_d=0.05D$

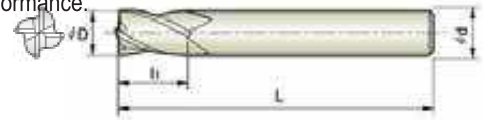
Depth of Cut R_d
 Ad $R_d=0.02D$



4 Flutes Long Length End Mills

Endmills for pre-hardened and hardened steel (HRC52~60)

- Maximize the wear-resistance due to TiSiN coating.
- Geometry design to protect the breakage of cutting edge and improve the cutting performance.



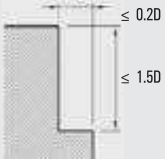
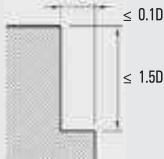
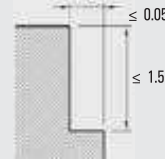
Size	D Tolerance
D ≤ Φ5	+0~-0.01
Φ6-Φ12	+0~-0.02
D ≥ Φ14	+0~-0.03

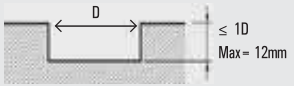

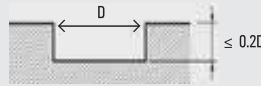
Unit : mm

4ALE, Square

Order Number	Diameter	Length of cut	Overall Length	Shank DiaV
	D	L1	L	d
4ALE 010 030 S06	1	3	60	6
4ALE 010 050 S06	1	5	60	6
4ALE 010 070 S06	1	7	60	6
4ALE 015 060 S06	1.5	6	60	6
4ALE 015 080 S06	1.5	8	60	6
4ALE 015 100 S06	1.5	10	60	6
4ALE 020 080 S06	2	8	60	6
4ALE 020 100 S06	2	10	60	6
4ALE 020 120 S06	2	12	60	6
4ALE 020 150 S06	2	15	60	6
4ALE 030 100 S06	3	10	70	6
4ALE 030 150 S06	3	15	70	6
4ALE 030 200 S06	3	20	70	6
4ALE 030 250 S06	3	25	70	6
4ALE 030 300 S06	3	30	70	6
4ALE 040 120 S06	4	12	70	6
4ALE 040 150 070	4	15	70	4
4ALE 040 150 S06	4	15	70	6
4ALE 040 200 070	4	20	70	4
4ALE 040 200 S06	4	20	70	6
4ALE 040 250 S06	4	25	70	6
4ALE 040 300 S06	4	30	75	6
4ALE 040 350 S06	4	35	75	6
4ALE 040 400 S06	4	40	80	6
4ALE 050 200 S06	5	20	70	6
4ALE 050 250 S06	5	25	70	6
4ALE 050 300 S06	5	30	75	6
4ALE 050 400 S06	5	40	80	6
4ALE 060 200 070	6	20	70	6
4ALE 060 200 100	6	20	100	6
4ALE 060 250 075	6	25	75	6
4ALE 060 250 100	6	25	100	6
4ALE 060 300 080	6	30	80	6
4ALE 060 350 080	6	35	80	6
4ALE 060 400 090	6	40	90	6
4ALE 080 250 075	8	25	75	8
4ALE 080 250 100	8	25	100	8
4ALE 080 300 080	8	30	80	8

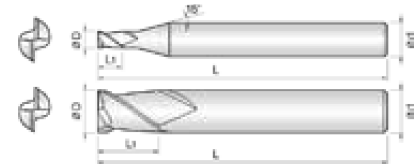
Order Number	Diameter	Length of cut	Overall Length	Shank DiaV
	D	L1	L	d
4ALE 080 300 100	8	30	100	8
4ALE 080 300 150	8	30	150	8
4ALE 080 350 080	8	35	80	8
4ALE 080 400 090	8	40	90	8
4ALE 080 450 100	8	45	100	8
4ALE 080 500 100	8	50	100	8
4ALE 080 550 100	8	55	100	8
4ALE 100 300 080	10	30	80	10
4ALE 100 350 100	10	35	100	10
4ALE 100 350 150	10	35	150	10
4ALE 100 400 100	10	40	100	10
4ALE 100 450 100	10	45	100	10
4ALE 100 500 100	10	50	100	10
4ALE 100 550 110	10	55	110	10
4ALE 100 600 110	10	60	110	10
4ALE 100 650 120	10	65	120	10
4ALE 100 700 120	10	70	120	10
4ALE 120 300 100	12	30	100	12
4ALE 120 350 100	12	35	100	12
4ALE 120 400 100	12	40	100	12
4ALE 120 400 150	12	40	150	12
4ALE 120 450 100	12	45	100	12
4ALE 120 500 100	12	50	100	12
4ALE 120 550 110	12	55	110	12
4ALE 120 600 110	12	60	110	12
4ALE 120 700 130	12	70	130	12
4ALE 120 800 150	12	80	150	12
4ALE 140 500 110	14	50	110	14
4ALE 160 400 150	16	40	150	16
4ALE 160 550 120	16	55	120	16
4ALE 160 700 130	16	70	130	16
4ALE 160 900 150	16	90	150	16
4ALE 200 1000 200	20	100	200	20
4ALE 200 500 150	20	50	150	20
4ALE 200 600 130	20	60	130	20
4ALE 200 800 150	20	80	150	20
4ALE 250 750 150	25	75	150	25

Side Cutting						
Material	Alloy Steels / Tools steel SKD61 / SK / NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	21,000	1,100	14,000	560	4,800	130
3mm	15,000	1,250	10,600	850	4,200	200
4mm	11,000	1,400	8,000	960	3,200	220
5mm	9,600	1,900	6,400	1,000	2,500	250
6mm	8,000	2,200	5,300	1,000	2,100	250
7mm	6,800	1,900	4,500	1,000	1,800	260
8mm	6,000	1,600	4,000	960	1,600	260
9mm	5,300	1,480	3,500	840	1,400	220
10mm	4,800	1,440	3,200	770	1,300	210
11mm	4,400	1,350	2,900	760	1,200	190
12mm	4,000	1,250	2,700	760	1,100	180
16mm	3,000	1,140	2,000	560	800	130
20mm	2,400	860	1,600	510	600	100
Depth of Cut						

Slotting						
Material	Alloy Steels / Tools steel SKD61 / SK / NAK		SUS304 / SUS316 / Ti6A		Hardened Steels Inconel 718	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
2mm	10,000	400	9,600	310	3,200	80
3mm	6,900	410	7,400	380	2,700	110
4mm	5,600	490	5,600	400	2,000	120
5mm	4,500	630	4,500	410	1,600	130
6mm	3,700	740	3,700	440	1,300	160
7mm	3,200	700	3,200	410	1,100	140
8mm	2,800	670	2,800	390	1,000	130
9mm	2,500	600	2,500	350	900	130
10mm	2,200	530	2,200	350	800	130
11mm	2,000	530	2,000	320	720	120
12mm	1,900	530	1,900	300	660	110
16mm	1,400	390	1,400	280	500	80
20mm	1,100	350	1,100	260	400	60
Depth of Cut						



Ø0.05 - Ø0.95 Ø1 - Ø5.5 Ø6 - Ø20



Size	D Tolerance
D < Ø1	+0 -0.005mm
D ≤ Ø5.5	+0 -0.01mm
D > Ø5.5	+0 -0.02mm

Unit : mm

2 Flutes High Speed Standard Length End Mills


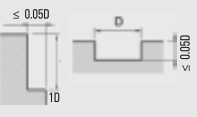
Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKE 0005 0008 S04	0.05	0.08	38	4
2AKE 0006 001 S04	0.06	0.1	38	4
2AKE 0007 0012 S04	0.07	0.12	38	4
2AKE 0008 0015 S04	0.08	0.15	38	4
2AKE 0009 0017 S04	0.09	0.17	38	4
2AKE 001 002 S04	0.1	0.2	38	4
2AKE 0015 003 S04	0.15	0.3	38	4
2AKE 002 004 S04	0.2	0.4	38	4
2AKE 0025 005 S04	0.25	0.5	38	4
2AKE 003 006 S04	0.3	0.6	38	4
2AKE 0035 007 S04	0.35	0.7	38	4
2AKE 004 008 S04	0.4	0.8	38	4
2AKE 0045 009 S04	0.45	0.9	38	4
2AKE 005 010 S04	0.5	1	38	4
2AKE 0055 011 S04	0.55	1.1	38	4
2AKE 006 012 S04	0.6	1.2	38	4
2AKE 0065 013 S04	0.65	1.3	38	4
2AKE 007 014 S04	0.7	1.4	38	4
2AKE 0075 015 S04	0.75	1.5	38	4
2AKE 008 016 S04	0.8	1.6	38	4
2AKE 0085 017 S04	0.85	1.7	38	4
2AKE 009 020 S04	0.9	2	38	4
2AKE 0095 020 S04	0.95	2	38	4
2AKE 010 025 S04	1	2.5	40	4
2AKE 010 025 S06	1	2.5	40	6
2AKE 010 025 060	1	2.5	60	6
2AKE 011 027 S04	1.1	2.7	40	4
2AKE 012 030 S04	1.2	3	40	4
2AKE 012 030 060	1.2	3	60	6
2AKE 013 032 S04	1.3	3.2	40	4
2AKE 014 035 S04	1.4	3.5	40	4
2AKE 015 040 S04	1.5	4	40	4
2AKE 015 040 S06	1.5	4	40	6
2AKE 015 040 060	1.5	4	60	6
2AKE 016 040 S04	1.6	4	40	4
2AKE 017 042 S04	1.7	4.2	40	4
2AKE 018 045 S04	1.8	4.5	40	4
2AKE 019 050 S04	1.9	5	40	4
2AKE 020 060 S04	2	6	40	4
2AKE 020 060 S06	2	6	40	6
2AKE 020 060 060	2	6	60	6
2AKE 021 060 S04	2.1	6	40	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKE 022 060 S04	2.2	6	40	4
2AKE 023 060 S04	2.3	6	40	4
2AKE 024 080 S04	2.4	8	45	4
2AKE 025 080 S04	2.5	8	45	4
2AKE 025 080 S06	2.5	8	45	6
2AKE 025 080 070	2.5	8	70	6
2AKE 026 080 S04	2.6	8	45	4
2AKE 027 080 S04	2.7	8	45	4
2AKE 028 080 S04	2.8	8	45	4
2AKE 029 080 S04	2.9	8	45	4
2AKE 030 080 S04	3	8	45	3
2AKE 030 080 S04	3	8	45	4
2AKE 030 080 S06	3	8	45	6
2AKE 030 080 070	3	8	70	6
2AKE 035 100 S06	3.5	10	45	6
2AKE 040 100 S04	4	10	45	4
2AKE 040 110 S06	4	11	45	6
2AKE 040 110 070	4	11	70	6
2AKE 045 110 S06	4.5	11	45	6
2AKE 050 130 S06	5	13	50	6
2AKE 050 130 080	5	13	80	6
2AKE 055 130 S06	5.5	13	50	6
2AKE 060 130 S06	6	13	50	6
2AKE 060 130 080	6	13	80	6
2AKE 065 160 S08	6.5	16	60	8
2AKE 070 160 S08	7	16	60	8
2AKE 075 160 S08	7.5	16	60	8
2AKE 080 190 S08	8	19	60	8
2AKE 085 190 S10	8.5	19	70	10
2AKE 090 190 S10	9	19	70	10
2AKE 095 190 S10	9.5	19	70	10
2AKE 100 220 S10	10	22	70	10
2AKE 105 220 S12	10.5	22	75	12
2AKE 110 220 S12	11	22	75	12
2AKE 115 220 S12	11.5	22	75	12
2AKE 120 260 S12	12	26	75	12
2AKE 140 260 S14	14	26	80	14
2AKE 140 260 S16	14	26	90	16
2AKE 160 350 S16	16	35	100	16
2AKE 180 350 S18	18	35	100	18
2AKE 200 400 S20	20	40	100	20

2AKE, Square

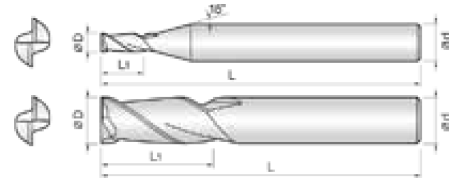
Material	Carbon Steels / Alloy Steels S45C / S50C / SK / SCM		Hardened Steels/ Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD11 / SKD61 / SKT		High Speed Spindle Milling
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	
0.05mm	40,000	40	40,000	35	40,000	30	40,000	20	o
0.08mm	40,000	70	40,000	60	40,000	55	40,000	40	o
0.1mm	40,000	90	40,000	80	40,000	70	40,000	60	o
0.3mm	40,000	140	40,000	130	40,000	130	40,000	80	o
0.5mm	40,000	300	40,000	280	30,000	220	30,000	100	o
1mm	28,000 (18,000)	550 (120)	18,000 (11,000)	350 (70)	14,000 (9,000)	28 (60)	14,000 (8,500)	140 (30)	o
2mm	14,000 (10,000)	850 (180)	9,000 (6800)	550 (110)	7,000 (5,500)	420 (90)	7,200 (4,500)	140 (45)	o
3mm	8,000	200	5,000	130	4,200	110	3,000	55	x
4mm	7,000	290	4,000	180	3,400	110	2,500	60	x
5mm	5,600	300	3,200	180	2,400	110	2,200	65	x
6mm	4,900	340	2,900	190	2,200	130	1,800	80	x
8mm	3,600	360	2,200	190	1,600	130	1,300	95	x
10mm	2,800	310	1,700	150	1,300	110	1,200	80	x
12mm	2,400	260	1,400	130	1,000	90	950	70	x
14mm	2,000	230	1,250	110	900	80	800	60	x
16mm	1,800	190	1,100	100	800	70	700	50	x
18mm	1,600	175	1,000	90	710	65	650	45	x
20mm	1,400	160	900	80	640	60	600	40	x
Depth of Cut	$\leq 0.1D$ ($D \leq \varnothing 3$) $\leq 0.2D$ ($D > \varnothing 3$)				$0.1D$ ($D < \varnothing 2$) $0.3D$ ($\varnothing 2D \varnothing 3$) $0.5D$ ($D > \varnothing 3$)		$\leq 0.05D$ 		$0.05D$ ($D < \varnothing 2$) $0.1D$ ($D \geq 2$)



2 Flutes Long Length End Mills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron. (~HRC52)

- Improve tool performance by even run-out and tolerance control.
- Minimize edge chipping by improving corner strength.



Size	D Tolerance
D ≤ Ø5	+0 -0.01mm
D > Ø5	-0.01 ~ +0.03mm

Unit : mm

2AKL, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKL 010 030 S06	1	3	60	6
2AKL 010 050 S06	1	5	60	6
2AKL 010 070 S06	1	7	60	6
2AKL 010 100 S06	1	10	60	6
2AKL 015 060 S06	1.5	6	60	6
2AKL 015 075 S06	1.5	7.5	60	6
2AKL 015 100 S06	1.5	10	60	6
2AKL 015 150 S06	1.5	15	60	6
2AKL 020 060 S06	2	6	60	6
2AKL 020 100 S06	2	10	60	6
2AKL 020 150 S06	2	15	60	6
2AKL 030 120 S06	3	12	70	6
2AKL 030 150 S06	3	15	70	6
2AKL 030 200 S06	3	20	70	6
2AKL 030 250 S06	3	25	70	6
2AKL 040 150 S06	4	15	70	6
2AKL 040 200 S06	4	20	70	6
2AKL 040 300 S06	4	30	75	6
2AKL 050 200 S06	5	20	70	6
2AKL 050 250 S06	5	25	75	6
2AKL 050 300 S06	5	30	80	6
2AKL 060 200 S06	6	20	75	6
2AKL 060 200 100	6	20	100	6
2AKL 060 250 S06	6	25	75	6
2AKL 060 300 S06	6	30	80	6
2AKL 080 250 S08	8	25	75	8
2AKL 080 250 100	8	25	100	8
2AKL 080 300 S08	8	30	80	8
2AKL 080 350 S08	8	35	80	8

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKL 080 400 S08	8	40	90	8
2AKL 080 500 S08	8	50	100	8
2AKL 100 300 S10	10	30	80	10
2AKL 100 300 110	10	30	110	10
2AKL 100 350 S10	10	35	90	10
2AKL 100 400 S10	10	40	90	10
2AKL 100 500 S10	10	50	100	10
2AKL 100 600 S10	10	60	110	10
2AKL 120 300 S12	12	30	90	12
2AKL 120 350 110	12	35	110	12
2AKL 120 400 S12	12	40	100	12
2AKL 120 500 S12	12	50	100	12
2AKL 120 600 S12	12	60	110	12
2AKL 120 700 S12	12	70	130	12
2AKL 140 500 S14	14	50	110	14
2AKL 160 400 160	16	40	160	16
2AKL 160 550 S16	16	55	120	16
2AKL 160 700 S16	16	70	130	16
2AKL 160 800 S16	16	80	160	16
2AKL 200 500 160	20	50	160	20
2AKL 200 600 S20	20	60	130	20
2AKL 200 1000 S20	20	100	200	20
2AKL 250 750 S25	25	75	160	25

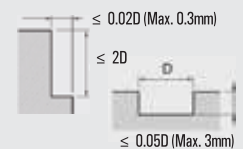
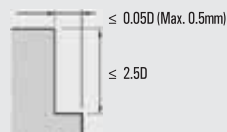
Side Milling

Material	Carbon Steels / Alloy Steels S45C / S50C / SK / SCM		Hardened Steels / Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	9,400	40	7,700	30	5,500	15	4,900	15
1.5mm	6,000	45	5,500	35	4,000	20	3,500	18
2mm	5,100	50	4,100	40	3,000	25	2,600	20
3mm	3,600	55	2,900	50	2,200	35	1,800	25
4mm	2,900	70	2,300	55	1,800	45	1,400	30
5mm	2,500	85	2,000	70	1,500	50	1,300	35
6mm	2,100	100	1,700	85	1,300	65	1,100	45
8mm	1,600	110	1,300	85	1,000	70	900	45
10mm	1,400	110	1,100	85	800	65	700	45
12mm	1,100	85	950	80	700	50	600	35
16mm	900	70	700	55	500	40	430	25
20mm	700	55	550	40	400	35	340	20
25mm	600	40	440	35	300	25	300	15

Slotting

1mm	9,400	40	7,700	30	5,500	15	4,900	12
1.5mm	6,000	45	5,500	35	4,000	20	3,500	12
2mm	5,100	45	4,100	40	3,000	25	2,600	12
3mm	3,600	55	2,900	50	2,200	35	1,800	15
4mm	2,900	35	2,300	25	1,400	15	1,400	15
5mm	2,500	40	2,000	35	1,200	20	1,300	15
6mm	2,100	50	1,700	45	1,000	25	1,100	20
8mm	1,600	55	1,300	45	800	30	900	20
10mm	1,400	55	1,100	45	650	25	700	20
12mm	1,100	40	950	40	550	20	600	15
16mm	900	35	700	25	400	15	430	12
20mm	700	25	550	20	320	13	340	11
25mm	600	20	440	15	250	10	300	8

Depth of Cut



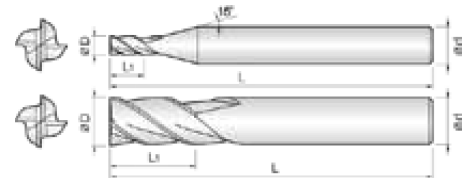


Ø0.8 - Ø6.5 Ø6 - Ø20

4 Flutes High Speed Standard Length End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.



Size	D Tolerance
D ≤ Ø5.5	+0 -0.01mm
D > Ø5.5	+0 -0.02mm

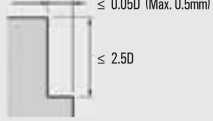

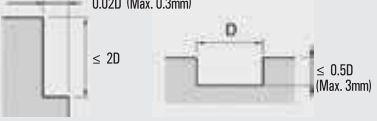
Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKE 008 020 S04	0.8	2	38	4
4AKE 010 025 S04	1	2.5	40	4
4AKE 010 025 S06	1	2.5	40	6
4AKE 010 025 060	1	2.5	60	6
4AKE 010 025 080	1	2.5	80	6
4AKE 012 030 S04	1.2	3	40	4
4AKE 012 030 S06	1.2	3	40	6
4AKE 012 030 060	1.2	3	60	6
4AKE 015 040 S04	1.5	4	40	4
4AKE 015 040 S06	1.5	4	40	6
4AKE 015 040 060	1.5	4	60	6
4AKE 015 040 080	1.5	4	80	6
4AKE 020 060 S04	2	6	40	4
4AKE 020 060 S06	2	6	40	6
4AKE 020 060 060	2	6	60	6
4AKE 020 060 100	2	6	100	6
4AKE 025 080 S04	2.5	8	45	4
4AKE 025 080 S06	2.5	8	45	6
4AKE 025 080 070	2.5	8	70	6
4AKE 025 080 100	2.5	8	100	6
4AKE 030 080 S03	3	8	45	3
4AKE 030 080 S04	3	8	45	4
4AKE 030 080 S06	3	8	45	6
4AKE 030 080 070	3	8	70	6
4AKE 030 080 100	3	8	100	6
4AKE 035 100 S06	3.5	10	45	6
4AKE 040 110 S04	4	11	45	4
4AKE 040 110 S06	4	11	45	6
4AKE 040 110 070	4	11	70	6
4AKE 040 110 100	4	11	100	6
4AKE 045 110 S06	4.5	11	45	6
4AKE 050 130 S06	5	13	50	6
4AKE 050 130 080	5	13	80	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKE 050 130 100	5	13	100	6
4AKE 055 130 S06	5.5	13	50	6
4AKE 060 130 S06	6	13	50	6
4AKE 060 130 080	6	13	80	6
4AKE 060 130 100	6	13	100	6
4AKE 065 160 S08	6.5	16	60	8
4AKE 070 160 S08	7	16	60	8
4AKE 075 160 S08	7.5	16	60	8
4AKE 080 190 S08	8	19	60	8
4AKE 085 190 S10	8.5	19	70	10
4AKE 090 190 S10	9	19	70	10
4AKE 095 190 S10	9.5	19	70	10
4AKE 100 220 S10	10	22	70	10
4AKE 105 220 S12	10.5	22	75	12
4AKE 110 220 S12	11	22	75	12
4AKE 115 220 S12	11.5	22	75	12
4AKE 120 260 S12	12	26	75	12
4AKE 140 260 S14	14	26	80	14
4AKE 140 260 S16	14	26	90	16
4AKE 160 350 S16	16	35	100	16
4AKE 180 350 S18	18	35	100	18
4AKE 200 400 S20	20	40	100	20

4AKE, Square

Material	Carbon Steels/ Alloy Steels S45C / S50C / SK / SCM		Hardened Steels/Prehardened Steels NAK / SKD		Stainless Steels SUS304 / SUS316		Hardened Steels SKD11 / SKD61 / SKT		Hardened Steels SKD / SKT	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.8mm	14,000	220	8,000	120	7,600	90	6,000	40	3,500	18
1mm	13,000	230	7,500	140	7,200	100	5,500	50	3,000	20
1.5mm	11,000	240	7,000	150	6,000	110	5,000	55	2,600	23
2mm	10,000	250	6,800	160	5,800	120	4,500	60	2,200	25
3mm	7,500	270	4,900	180	4,000	150	3,000	75	1,700	50
4mm	6,800	500	4,000	300	3,400	250	2,500	100	1,300	65
5mm	5,600	540	3,200	320	2,800	270	2,000	110	1,100	65
6mm	5,000	580	3,000	320	2,500	290	1,800	120	900	65
8mm	3,700	650	2,100	320	1,800	300	1,400	150	700	60
10mm	2,800	540	1,700	260	1,400	270	1,200	130	600	60
12mm	2,700	470	1,400	220	1,200	210	1,000	120	490	50
14mm	2,200	390	1,300	190	1,050	180	850	100	420	40
16mm	1,800	340	1,100	160	910	160	700	90	380	35
18mm	1,600	280	900	140	750	130	600	70	300	25
20mm	1,200	220	700	110	590	100	490	50	230	20

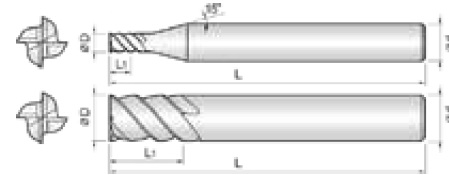
Depth of Cut			
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■ The table is based on side machining. In case of slotting, please refer to only 80% of Feed and as for slotting for sus, RPM is 60% of above table / 40% of Feed.



4 Flutes High Speed 45° Helix End Mills Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.
- 45° degree helix design for high speed, feed condition.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.01mm
D > Ø5	+0 ~ -0.02mm

Unit : mm

4AKM, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKM 010 025 S06	1	2.5	40	6
4AKM 010 035 S06	1	3.5	40	6
4AKM 015 040 S06	1.5	4	40	6
4AKM 015 060 S06	1.5	6	40	6
4AKM 020 050 S06	2	5	40	6
4AKM 020 080 S06	2	8	45	6
4AKM 030 080 S06	3	8	45	6
4AKM 030 120 S06	3	12	50	6
4AKM 040 110 S06	4	11	45	6
4AKM 040 160 S06	4	16	55	6
4AKM 050 130 S06	5	13	50	6
4AKM 050 180 S06	5	18	60	6
4AKM 060 130 S06	6	13	50	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKM 060 200 S06	6	20	60	6
4AKM 080 200 S08	8	20	60	8
4AKM 080 250 S08	8	25	70	8
4AKM 100 220 S10	10	22	70	10
4AKM 100 300 S10	10	30	80	10
4AKM 120 260 S12	12	26	75	12
4AKM 120 400 S12	12	40	90	12
4AKM 120 500 S12	12	50	100	12
4AKM 160 350 S16	16	35	90	16
4AKM 160 500 S16	16	50	110	16
4AKM 200 400 S20	20	40	100	20
4AKM 200 500 S20	20	50	110	20

4AKM

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels / Tool Steels Prehardened Steels SKD11 / SKD61 / NAK		Hardened Steels SKD61 / SKD11 / STAVAX		Hardened Steels SKD11 / SKD / SKS	
	~ 55HRC		55 ~ 65HRC		60 ~ 65HRC	
Hardness						
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED
1mm	32,000	800	16,000	400	8,000	200
1.5mm	28,000	1,000	14,000	500	7,000	250
2mm	25,600	1,200	12,800	600	6,400	300
3mm	21,600	2,500	10,400	1,300	5,500	660
4mm	16,800	3,000	8,000	1,400	4,500	800
5mm	14,400	3,400	7,100	1,700	3,600	900
6mm	12,800	4,600	6,400	2,300	3,200	1,120
8mm	9,600	4,600	4,800	2,300	2,400	1,120
10mm	7,600	4,600	3,800	2,300	1,900	1,120
12mm	6,400	3,800	3,200	1,900	1,600	960
16mm	4,800	2,900	2,400	1,400	1,200	720
20mm	3,800	2,300	1,900	1,100	1,000	570
Depth of Cut						

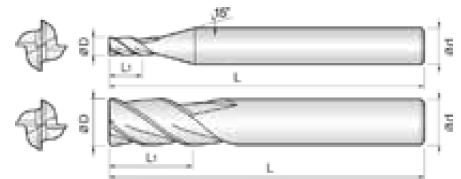


Ø3-Ø5 Ø6-Ø25

4Flutes Long Length End Mills

Endmills for various work materials, hardened steel, pre-hardened steel, tool steel and cast iron. (~HRC55)

- Improve tool performance by even run-out and tolerance control.
- Minimize edge chipping by improving corner strength.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.01mm
D > Ø5	-0.01 ~ -0.03mm

Unit : mm

4AKL, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKL 010 030 S06	1	3	60	6
4AKL 010 050 S06	1	5	60	6
4AKL 015 060 S06	1.5	6	60	6
4AKL 015 080 S06	1.5	8	60	6
4AKL 020 080 S06	2	8	60	6
4AKL 020 100 S06	2	10	60	6
4AKL 030 100 S06	3	10	70	6
4AKL 030 150 S06	3	15	70	6
4AKL 030 200 S06	3	20	70	6
4AKL 030 250 S06	3	25	70	6
4AKL 040 120 S06	4	12	70	6
4AKL 040 150 S04	4	15	70	4
4AKL 040 150 S06	4	15	70	6
4AKL 040 200 S04	4	20	70	4
4AKL 040 200 S06	4	20	70	6
4AKL 040 250 S06	4	25	70	6
4AKL 040 300 S06	4	30	75	6
4AKL 050 200 S06	5	20	70	6
4AKL 050 250 S06	5	25	75	6
4AKL 050 300 S06	5	30	80	6
4AKL 060 200 S06	6	20	75	6
4AKL 060 200 100	6	20	100	6
4AKL 060 250 S06	6	25	75	6
4AKL 060 300 S06	6	30	80	6
4AKL 060 350 S06	6	35	80	6
4AKL 080 250 S08	8	25	75	8
4AKL 080 250 100	8	25	100	8
4AKL 080 300 S08	8	30	80	8
4AKL 080 350 S08	8	35	90	8
4AKL 080 400 S08	8	40	90	8
4AKL 080 450 S08	8	45	100	8
4AKL 100 300 S10	10	30	80	10
4AKL 100 300 110	10	30	110	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
4AKL 100 350 S10	10	35	90	10
4AKL 100 400 S10	10	40	90	10
4AKL 100 500 S10	10	50	100	10
4AKL 100 600 S10	10	60	110	10
4AKL 120 300 S12	12	30	90	12
4AKL 120 350 110	12	35	110	12
4AKL 120 400 S12	12	40	100	12
4AKL 120 500 S12	12	50	100	12
4AKL 120 600 S12	12	60	110	12
4AKL 120 700 S12	12	70	130	12
4AKL 140 500 S14	14	50	110	14
4AKL 160 400 160	16	40	160	16
4AKL 160 550 S16	16	55	120	16
4AKL 160 700 S16	16	70	130	16
4AKL 200 500 160	20	50	160	20
4AKL 200 600 S20	20	60	130	20
4AKL 200 1000 S20	20	100	200	20
4AKL 250 750 S25	25	75	160	25

Material	Carbon Steels S50 / SCM		Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61		Hardened Steels SKD11	
Hardness	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	4,500	60	4,000	50	3,000	40	2,500	20	2,000	15
1.5mm	4,200	70	3,600	60	2,700	45	2,200	25	1,800	18
2mm	4,000	80	3,300	70	2,500	50	2,000	30	1,600	20
3mm	3,600	90	2,900	80	2,200	60	1,800	40	1,500	25
4mm	2,900	120	2,300	90	1,800	70	1,400	50	1,200	30
5mm	2,500	150	2,000	120	1,500	90	1,300	60	1,000	30
6mm	2,100	170	1,700	150	1,300	110	1,100	70	900	40
8mm	1,600	190	1,300	150	1,000	130	900	70	680	40
10mm	1,400	190	1,100	150	800	110	700	70	550	40
12mm	1,100	150	900	120	700	90	570	60	450	30
16mm	900	120	700	90	500	70	420	40	340	25
20mm	680	90	550	70	400	60	340	35	270	20
25mm	550	70	450	60	300	40	270	30	210	17
Depth of Cut										

- In case of slotting, decrease feed rate more than 50% the table.
60% of speed and 40% of feed on the table , when to slotting SUS.



06 ~ 08 010 ~ 025

6&8 Flutes High Speed 45° Helix End Mills Endmills for pre-hardened and hardened steel (HRC50~)

- Precise run-out and tolerance for finish machining.
- Reinforced edge design for preventing edge chipping.
- 45° degree helix design for high speed, feed condition.



Size	D Tolerance
D ≤ Ø8	+0 ~ -0.02mm
D > Ø8	-0.01 ~ -0.03mm

Unit : mm

6&8AKM, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
6AKM 030 100 S06	3	10	50	6
6AKM 040 120 S06	4	12	50	6
6AKM 050 150 S06	5	15	50	6
6AKM 060 150 S06	6	15	50	6
6AKM 060 200 S06	6	20	60	6
6AKM 060 250 S06	6	25	65	6
6AKM 080 200 S08	8	20	60	8
6AKM 080 250 S08	8	25	65	8
6AKM 080 300 S08	8	30	75	8
6AKM 080 350 S08	8	35	80	8
6AKM 100 250 S10	10	25	70	10
6AKM 100 350 S10	10	35	90	10
6AKM 100 450 S10	10	45	100	10
6AKM 120 300 S12	12	30	80	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
6AKM 120 400 S12	12	40	90	12
6AKM 120 500 S12	12	50	100	12
6AKM 160 350 S16	16	35	90	16
6AKM 160 500 S16	16	50	110	16
6AKM 160 650 S16	16	65	120	16
6AKM 160 800 S16	16	80	150	16
6AKM 160 900 S16	16	90	160	16
6AKM 200 450 S20	20	45	100	20
6AKM 200 600 S20	20	60	120	20
6AKM 200 800 S20	20	80	150	20
6AKM 200 900 S20	20	90	160	20
6AKM 200 1000 S20	20	100	160	20
6AKM 200 1100 S20	20	110	170	20
6AKM 250 1250 S25	25	125	200	25

6AKM/8AKM

• RPM : rev/min • Feed : mm/min

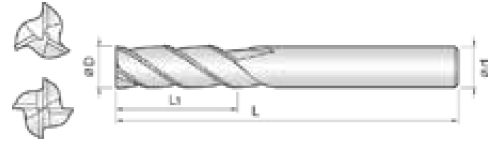
Material		Alloy Steels / Tools Steels / Prehardened Steels SKD11 / SKD61 / NAK		Hardened Steels SKD61 / SKD11 / SUS420		Hardened Steels SKD11 / SKH / SKS		Hardened Steels SKD11 / SKH / SKS	
Hardness		~ 45HRC		45HRC ~ 55HRC		55HRC ~ 60HRC		60HRC ~ 65HRC	
Outside Diameter	Length of Cut	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	15	3,200	820	2,600	600	2,200	540	2,000	500
	25	1,700	360	1,300	260	1,100	190	900	150
8mm	20	2,400	750	2,000	600	1,700	510	1,500	470
	30	1,300	340	1,000	250	800	180	700	170
10mm	25	1,900	680	1,600	480	1,400	400	1,200	360
	45	1,000	330	800	230	700	180	500	120
12mm	30	1,600	650	1,300	500	1,100	440	1,000	380
	50	650	250	500	170	400	130	320	100
16mm	35	1,200	570	1,000	430	900	360	740	330
	65	640	250	500	180	400	130	320	100
20mm	45	1,000	500	800	370	660	320	600	290
	80	510	220	400	150	320	110	300	90
25mm (8F)	125	510	230	400	160	320	120	300	90
Depth of Cut	Short type	≤ 0.03D ≤ 1D		≤ 0.02D ≤ 1D		≤ 0.015D ≤ 1D		≤ 0.01D ≤ 1D	
	Long type	≤ 0.01D 3D ~ 4D		≤ 0.005D 3D ~ 4D		≤ 0.005D 3D ~ 4D		≤ 0.005D 3D ~ 4D	



3&4 Flutes Roughing End Mills

Roughing Endmills for tool steel, alloy steel

- Reduce machining time by excellent chip control.
- Maximize work efficiency by high speed machining.



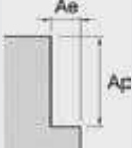
Size	D Tolerance
D ≤ Ø9	-0.01 ~ -0.03mm
D > Ø9	-0.01 ~ -0.04mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3RSI 040 100 S06	4	10	50	6
3RSI 050 130 S06	5	13	50	6
3RSI 060 100 050	6	10	50	6
3RSI 060 150 055	6	15	55	6
3RSI 060 200 060	6	20	60	6
3RSI 070 180 S08	7	18	65	8
3RSI 080 120 060	8	12	60	8
3RSI 080 190 065	8	19	65	8
3RSI 080 250 070	8	25	70	8
4RSI 090 220 S10	9	22	70	10
4RSI 100 150 070	10	15	70	10
4RSI 100 220 070	10	22	70	10
4RSI 100 300 080	10	30	80	10
4RSI 110 270 S12	11	27	80	12
4RSI 120 200 075	12	20	75	12
4RSI 120 260 080	12	26	80	12
4RSI 120 350 090	12	35	90	12
4RSI 160 320 090	16	32	90	16
4RSI 160 400 100	16	40	100	16
4RSI 200 380 110	20	38	110	20
4RSI 200 500 110	20	50	110	20


3&4RSI, Roughing

Side Cutting

Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD									
Hardness	~ 750N/mm ²		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC									
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED								
6mm	4,200	510	3,600	290	2,800	220	2,100	170								
8mm	3,200	510	2,700	330	2,100	250	1,600	190								
10mm	2,600	510	2,200	345	1,600	260	1,300	210								
12mm	2,100	510	1,800	360	1,400	270	1,100	215								
16mm	1,600	510	1,400	385	1,000	290	800	220								
20mm	1,300	480	1,100	375	800	280	640	210								
Depth of Cut	<table border="1"> <tr> <td>Ap</td> <td>Ae</td> </tr> <tr> <td>1.5D</td> <td>0.4D</td> </tr> </table> 				Ap	Ae	1.5D	0.4D	<table border="1"> <tr> <td>Ap</td> <td>Ae</td> </tr> <tr> <td>1.5D</td> <td>0.3D</td> </tr> </table>				Ap	Ae	1.5D	0.3D
Ap	Ae															
1.5D	0.4D															
Ap	Ae															
1.5D	0.3D															

3&4RSI,
Roughing

Slotting

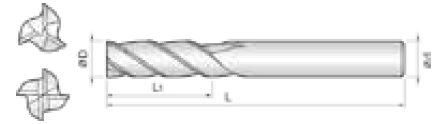
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD	
Hardness	~ 750N/mm ²		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	3,600	430	3,000	240	2,300	185	1,920	150
8mm	2,700	430	2,200	270	1,800	210	1,440	180
10mm	2,200	430	1,800	290	1,400	220	1,160	185
12mm	1,800	430	1,500	300	1,200	230	960	190
16mm	1,400	430	1,100	310	900	250	720	200
20mm	1,100	410	900	310	700	240	560	185
Depth of Cut	<p>Ap: 0.75D ApMax = 12mm</p> 				<p>Ap: 0.5D</p>			



3&4 Flutes 45° Helix Fine Pitch Roughing End Mills

Roughing Endmills for hard to cut materials, alloy steel, SUS, Inconel and structural steel.

- Long tool life with low cutting force by 45° degree helix design.
- Fine pitch shape design for high speed roughing application.



Size	D Tolerance
D ≤ Ø9	-0.01 ~ -0.03mm
D > Ø9	-0.01 ~ -0.04mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3MRSI 040 100 S06	4	10	50	6
3MRSI 050 130 S06	5	13	50	6
3MRSI 060 100 050	6	10	50	6
3MRSI 060 160 055	6	16	55	6
3MRSI 060 200 060	6	20	60	6
3MRSI 070 180 S08	7	18	65	8
3MRSI 080 120 060	8	12	60	8
3MRSI 080 190 065	8	19	65	8
3MRSI 080 250 070	8	25	70	8
4MRSI 090 220 S10	9	22	70	10
4MRSI 100 150 070	10	15	70	10
4MRSI 100 220 070	10	22	70	10
4MRSI 100 300 080	10	30	80	10
4MRSI 110 270 S12	11	27	80	12
4MRSI 120 200 075	12	20	75	12
4MRSI 120 250 080	12	25	80	12
4MRSI 120 350 090	12	35	90	12
4MRSI 160 320 090	16	32	90	16
4MRSI 160 400 110	16	40	110	16
4MRSI 200 380 110	20	38	110	20
4MRSI 200 500 120	20	50	120	20

3&4RMSI, Roughing

Side Cutting																				
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD													
Hardness	~ 750N/mm ²		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC													
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED												
4mm	5,800	600	4,800	300	4,100	200	3,200	150												
5mm	5,800	600	4,800	310	3,700	230	2,800	170												
6mm	4,800	600	4,200	330	3,200	250	2,400	200												
8mm	3,700	600	3,100	380	2,400	290	1,800	220												
10mm	3,000	600	2,500	400	1,800	300	1,500	250												
12mm	2,400	600	2,100	410	1,600	310	1,300	250												
16mm	1,850	600	1,600	440	1,200	330	1,000	250												
20mm	1,500	550	1,300	430	900	320	750	240												
Depth of Cut	<table border="1"> <tr> <td>Ap</td> <td>Ae</td> </tr> <tr> <td>1.5D</td> <td>0.4D</td> </tr> </table>		Ap	Ae	1.5D	0.4D			<table border="1"> <tr> <td>Ap</td> <td>Ae</td> </tr> <tr> <td>1.5D</td> <td>0.3D</td> </tr> </table>		Ap	Ae	1.5D	0.3D	<table border="1"> <tr> <td>Ap</td> <td>Ae</td> </tr> <tr> <td>1.5D</td> <td>0.3D</td> </tr> </table>		Ap	Ae	1.5D	0.3D
	Ap	Ae																		
1.5D	0.4D																			
Ap	Ae																			
1.5D	0.3D																			
Ap	Ae																			
1.5D	0.3D																			

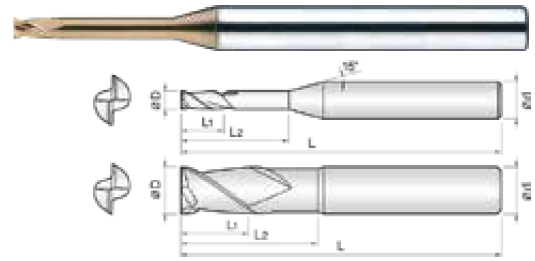
Slotting								
Material	Mild Steels/ Carbon Steels SS400 / S55C		Alloy Steels/ Tool Steels SCM / SKT / SKD		Tool Steels/ Prehardened Steels SKD / SKT / NAK55 / HPM1		Tool Steels/ Stainless Steels SUS304 / SKD	
Hardness	~ 750N/mm ²		~ 30HRC		30 ~ 38HRC		38 ~ 45HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
4mm	4,600	500	4,400	230	3,200	160	2,800	130
5mm	4,600	500	4,000	250	2,900	180	2,500	150
6mm	4,100	500	3,500	280	2,700	210	2,200	170
8mm	3,100	500	2,500	310	2,100	240	1,700	210
10mm	2,500	500	2,100	330	1,600	250	1,300	210
12mm	2,100	500	1,700	350	1,400	270	1,100	220
16mm	1,600	500	1,300	360	1,000	290	800	230
20mm	1,300	480	1,000	360	800	270	650	210
Depth of Cut	<p>Ap: 0.75D ApMax = 12mm</p>				<p>Ap: 0.5D</p>		<p>Ap: 0.5D</p>	



2 Flutes High Speed Rib End Mills

Endmills for pre-hardened and hardened steel (HRc50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.



Size	D Tolerance
D ≤ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

Unit: mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-2AKR 001 003 S04	0.1	0.3	-	40	4
S-2AKR 001 005 S04	0.1	0.5	-	40	4
S-2AKR 002 005 S04	0.2	0.2	0.5	40	4
S-2AKR 002 010 S04	0.2	0.2	1	40	4
S-2AKR 002 015 S04	0.2	0.2	1.5	40	4
S-2AKR 002 020 S04	0.2	0.2	2	40	4
S-2AKR 003 010 S04	0.3	0.3	1	40	4
S-2AKR 003 015 S04	0.3	0.3	1.5	40	4
S-2AKR 003 020 S04	0.3	0.3	2	40	4
S-2AKR 003 030 S04	0.3	0.3	3	40	4
S-2AKR 003 040 S04	0.3	0.3	4	40	4
S-2AKR 003 050 S04	0.3	0.3	5	40	4
S-2AKR 004 010 S04	0.4	0.4	1	40	4
S-2AKR 004 020 S04	0.4	0.4	2	40	4
S-2AKR 004 030 S04	0.4	0.4	3	40	4
S-2AKR 004 040 S04	0.4	0.4	4	40	4
S-2AKR 004 050 S04	0.4	0.4	5	40	4
S-2AKR 004 060 S04	0.4	0.4	6	40	4
S-2AKR 004 080 S04	0.4	0.4	8	40	4
S-2AKR 004 100 S04	0.4	0.4	10	40	4
S-2AKR 005 020 S04	0.5	0.5	2	40	4
S-2AKR 005 030 S04	0.5	0.5	3	40	4
S-2AKR 005 040 S04	0.5	0.5	4	40	4
S-2AKR 005 050 S04	0.5	0.5	5	40	4
S-2AKR 005 060 S04	0.5	0.5	6	40	4
S-2AKR 005 080 S04	0.5	0.5	8	40	4
S-2AKR 005 100 S04	0.5	0.5	10	40	4
S-2AKR 005 120 S04	0.5	0.5	12	45	4
S-2AKR 005 140 S04	0.5	0.5	14	45	4
S-2AKR 006 020 S04	0.6	0.6	2	40	4
S-2AKR 006 030 S04	0.6	0.6	3	40	4
S-2AKR 006 040 S04	0.6	0.6	4	40	4
S-2AKR 006 050 S04	0.6	0.6	5	40	4
S-2AKR 006 060 S04	0.6	0.6	6	40	4
S-2AKR 006 080 S04	0.6	0.6	8	40	4
S-2AKR 006 100 S04	0.6	0.6	10	40	4
S-2AKR 006 120 S04	0.6	0.6	12	45	4
S-2AKR 006 140 S04	0.6	0.6	14	45	4
S-2AKR 006 160 S04	0.6	0.6	16	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-2AKR 007 020 S04	0.7	0.7	2	40	4
S-2AKR 007 040 S04	0.7	0.7	4	40	4
S-2AKR 007 060 S04	0.7	0.7	6	40	4
S-2AKR 007 080 S04	0.7	0.7	8	40	4
S-2AKR 007 100 S04	0.7	0.7	10	40	4
S-2AKR 007 120 S04	0.7	0.7	12	45	4
S-2AKR 008 020 S04	0.8	0.8	2	40	4
S-2AKR 008 040 S04	0.8	0.8	4	40	4
S-2AKR 008 060 S04	0.8	0.8	6	40	4
S-2AKR 008 080 S04	0.8	0.8	8	40	4
S-2AKR 008 100 S04	0.8	0.8	10	40	4
S-2AKR 008 120 S04	0.8	0.8	12	45	4
S-2AKR 008 140 S04	0.8	0.8	14	45	4
S-2AKR 009 060 S04	0.9	0.8	6	40	4
S-2AKR 009 080 S04	0.9	0.9	8	40	4
S-2AKR 009 100 S04	0.9	0.9	10	40	4
S-2AKR 010 020 S04	1	1	2	45	4
S-2AKR 010 030 S04	1	1	3	45	4
S-2AKR 010 040 S04	1	1	4	45	4
S-2AKR 010 050 S04	1	1	5	45	4
S-2AKR 010 060 S04	1	1	6	45	4
S-2AKR 010 080 S04	1	1	8	45	4
S-2AKR 010 100 S04	1	1	10	45	4
S-2AKR 010 120 S04	1	1	12	45	4
S-2AKR 010 140 S04	1	1	14	45	4
S-2AKR 010 160 S04	1	1	16	50	4
S-2AKR 010 180 S04	1	1	18	50	4
S-2AKR 010 200 S04	1	1	20	50	4
S-2AKR 010 250 S04	1	1	25	60	4
S-2AKR 010 300 S04	1	1	30	70	4
S-2AKR 012 040 S04	1.2	1.2	4	45	4
S-2AKR 012 060 S04	1.2	1.2	6	45	4
S-2AKR 012 080 S04	1.2	1.2	8	45	4
S-2AKR 012 100 S04	1.2	1.2	10	45	4
S-2AKR 012 120 S04	1.2	1.2	12	45	4
S-2AKR 012 160 S04	1.2	1.2	16	50	4
S-2AKR 012 200 S04	1.2	1.2	20	50	4
S-2AKR 012 250 S04	1.2	1.2	25	60	4
S-2AKR 012 300 S04	1.2	1.2	30	70	4

S-2AKR,
Square



00.1-06 08-012

Unit : mm

S-2AKR, Square

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-2AKR 014 060 S04	1.4	1.4	6	45	4
S-2AKR 014 080 S04	1.4	1.4	8	45	4
S-2AKR 014 100 S04	1.4	1.4	10	45	4
S-2AKR 014 140 S04	1.4	1.4	14	45	4
S-2AKR 014 160 S04	1.4	1.4	16	50	4
S-2AKR 014 200 S04	1.4	1.4	20	50	4
S-2AKR 015 040 S04	1.5	1.5	4	45	4
S-2AKR 015 060 S04	1.5	1.5	6	45	4
S-2AKR 015 080 S04	1.5	1.5	8	45	4
S-2AKR 015 100 S04	1.5	1.5	10	45	4
S-2AKR 015 120 S04	1.5	1.5	12	45	4
S-2AKR 015 140 S04	1.5	1.5	14	50	4
S-2AKR 015 160 S04	1.5	1.5	16	50	4
S-2AKR 015 180 S04	1.5	1.5	18	50	4
S-2AKR 015 200 S04	1.5	1.5	20	50	4
S-2AKR 015 250 S04	1.5	1.5	25	60	4
S-2AKR 015 300 S04	1.5	1.5	30	70	4
S-2AKR 016 100 S04	1.6	1.6	10	45	4
S-2AKR 016 140 S04	1.6	1.6	14	45	4
S-2AKR 016 180 S04	1.6	1.6	18	60	4
S-2AKR 018 100 S04	1.8	1.8	10	45	4
S-2AKR 018 140 S04	1.8	1.8	14	45	4
S-2AKR 018 180 S04	1.8	1.8	18	50	4
S-2AKR 020 040 S04	2	2	4	45	4
S-2AKR 020 060 S04	2	2	6	45	4
S-2AKR 020 080 S04	2	2	8	45	4
S-2AKR 020 100 S04	2	2	10	45	4
S-2AKR 020 120 S04	2	2	12	45	4
S-2AKR 020 140 S04	2	2	14	45	4
S-2AKR 020 160 S04	2	2	16	50	4
S-2AKR 020 180 S04	2	2	18	50	4
S-2AKR 020 200 S04	2	2	20	50	4
S-2AKR 020 220 S04	2	2	22	60	4
S-2AKR 020 250 S04	2	2	25	60	4
S-2AKR 020 300 S04	2	2	30	60	4
S-2AKR 020 350 S04	2	2	35	70	4
S-2AKR 020 400 S04	2	2	40	80	4
S-2AKR 020 450 S04	2	2	45	80	4
S-2AKR 020 500 S04	2	2	50	90	4
S-2AKR 025 080 S04	2.5	2.5	8	45	4
S-2AKR 025 100 S04	2.5	2.5	10	45	4
S-2AKR 025 120 S04	2.5	2.5	12	45	4
S-2AKR 025 160 S04	2.5	2.5	16	50	4
S-2AKR 025 200 S04	2.5	2.5	20	50	4
S-2AKR 025 250 S04	2.5	2.5	25	60	4
S-2AKR 025 300 S04	2.5	2.5	30	70	4
S-2AKR 025 350 S04	2.5	2.5	35	70	4
S-2AKR 025 400 S04	2.5	2.5	40	80	4
S-2AKR 025 500 S04	2.5	2.5	50	90	4

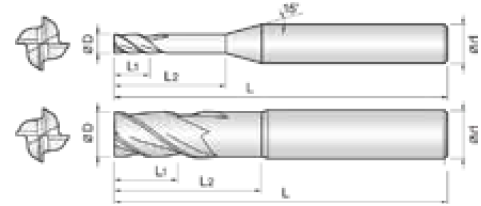
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-2AKR 030 060 S06	3	3	6	45	6
S-2AKR 030 080 S06	3	3	8	45	6
S-2AKR 030 100 S06	3	3	10	45	6
S-2AKR 030 120 S06	3	3	12	50	6
S-2AKR 030 160 S06	3	3	16	55	6
S-2AKR 030 200 S06	3	3	20	60	6
S-2AKR 030 250 S06	3	3	25	65	6
S-2AKR 030 300 S06	3	3	30	70	6
S-2AKR 030 350 S06	3	3	35	75	6
S-2AKR 030 400 S06	3	3	40	80	6
S-2AKR 030 450 S06	3	3	45	90	6
S-2AKR 030 500 S06	3	3	50	100	6
S-2AKR 030 600 S06	3	3	60	100	6
S-2AKR 040 080 S06	4	4	8	50	6
S-2AKR 040 100 S06	4	4	10	50	6
S-2AKR 040 120 S06	4	4	12	50	6
S-2AKR 040 160 S06	4	4	16	55	6
S-2AKR 040 200 S06	4	4	20	60	6
S-2AKR 040 250 S06	4	4	25	65	6
S-2AKR 040 300 S06	4	4	30	70	6
S-2AKR 040 350 S06	4	4	35	75	6
S-2AKR 040 400 S06	4	4	40	80	6
S-2AKR 040 450 S06	4	4	45	90	6
S-2AKR 040 500 S06	4	4	50	100	6
S-2AKR 040 550 S06	4	4	55	100	6
S-2AKR 040 600 S06	4	4	60	100	6
S-2AKR 050 160 S06	5	6	16	55	6
S-2AKR 050 200 S06	5	6	20	60	6
S-2AKR 050 250 S06	5	6	25	65	6
S-2AKR 050 300 S06	5	6	30	70	6
S-2AKR 050 350 S06	5	6	35	75	6
S-2AKR 050 400 S06	5	6	40	80	6
S-2AKR 050 500 S06	5	6	50	100	6
S-2AKR 050 600 S06	5	6	60	100	6
S-2AKR 060 200 S06	6	10	20	60	6
S-2AKR 060 300 S06	6	10	30	75	6
S-2AKR 060 400 S06	6	10	40	80	6
S-2AKR 060 500 S06	6	10	50	90	6
S-2AKR 060 600 S06	6	10	60	110	6
S-2AKR 080 200 S08	8	12	20	65	8
S-2AKR 080 300 S08	8	12	30	80	8
S-2AKR 080 400 S08	8	12	40	100	8
S-2AKR 100 250 S10	10	15	25	70	10
S-2AKR 100 350 S10	10	15	35	80	10
S-2AKR 100 450 S10	10	15	45	100	10
S-2AKR 120 300 S12	12	18	30	80	12
S-2AKR 120 400 S12	12	18	40	100	12
S-2AKR 120 500 S12	12	18	50	120	12



4 Flutes High Speed Rib End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Reinforced edge design for preventing edge chipping.



Size	D Tolerance
D ≤ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

Unit : mm

S-4AKR, Square

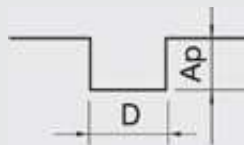
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-4AKR 008 020 S04	0.8	0.8	2	45	4
S-4AKR 008 040 S04	0.8	0.8	4	45	4
S-4AKR 008 060 S04	0.8	0.8	6	45	4
S-4AKR 008 080 S04	0.8	0.8	8	45	4
S-4AKR 008 100 S04	0.8	0.8	10	45	4
S-4AKR 008 120 S04	0.8	0.8	12	45	4
S-4AKR 008 160 S04	0.8	0.8	16	50	4
S-4AKR 009 020 S04	0.9	0.9	2	45	4
S-4AKR 009 060 S04	0.9	0.9	6	45	4
S-4AKR 009 080 S04	0.9	0.9	8	45	4
S-4AKR 009 100 S04	0.9	0.9	10	45	4
S-4AKR 010 030 S04	1	1	3	45	4
S-4AKR 010 040 S04	1	1	4	45	4
S-4AKR 010 060 S04	1	1	6	45	4
S-4AKR 010 080 S04	1	1	8	45	4
S-4AKR 010 100 S04	1	1	10	45	4
S-4AKR 010 120 S04	1	1	12	45	4
S-4AKR 010 160 S04	1	1	16	50	4
S-4AKR 010 200 S04	1	1	20	50	4
S-4AKR 010 250 S04	1	1	25	60	4
S-4AKR 012 060 S04	1.2	1.2	6	45	4
S-4AKR 012 080 S04	1.2	1.2	8	45	4
S-4AKR 012 100 S04	1.2	1.2	10	45	4
S-4AKR 012 120 S04	1.2	1.2	12	45	4
S-4AKR 012 160 S04	1.2	1.2	16	50	4
S-4AKR 015 060 S04	1.5	1.5	6	45	4
S-4AKR 015 080 S04	1.5	1.5	8	45	4
S-4AKR 015 100 S04	1.5	1.5	10	45	4
S-4AKR 015 120 S04	1.5	1.5	12	45	4
S-4AKR 015 160 S04	1.5	1.5	16	50	4
S-4AKR 015 200 S04	1.5	1.5	20	50	4
S-4AKR 015 250 S04	1.5	1.5	25	60	4
S-4AKR 020 060 S04	2	2	6	45	4
S-4AKR 020 080 S04	2	2	8	45	4
S-4AKR 020 100 S04	2	2	10	45	4
S-4AKR 020 120 S04	2	2	12	45	4
S-4AKR 020 160 S04	2	2	16	50	4
S-4AKR 020 200 S04	2	2	20	50	4
S-4AKR 020 250 S04	2	2	25	60	4
S-4AKR 020 300 S04	2	2	30	70	4
S-4AKR 025 100 S04	2.5	2.5	10	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
S-4AKR 025 120 S04	2.5	2.5	12	45	4
S-4AKR 025 160 S04	2.5	2.5	16	50	4
S-4AKR 025 200 S04	2.5	2.5	20	50	4
S-4AKR 025 250 S04	2.5	2.5	25	60	4
S-4AKR 025 300 S04	2.5	2.5	30	70	4
S-4AKR 030 100 S06	3	3	10	45	6
S-4AKR 030 120 S06	3	3	12	50	6
S-4AKR 030 160 S06	3	3	16	55	6
S-4AKR 030 200 S06	3	3	20	60	6
S-4AKR 030 250 S06	3	3	25	65	6
S-4AKR 030 300 S06	3	3	30	70	6
S-4AKR 030 350 S06	3	3	35	75	6
S-4AKR 030 400 S06	3	3	40	80	6
S-4AKR 040 100 S06	4	4	10	50	6
S-4AKR 040 120 S06	4	4	12	50	6
S-4AKR 040 160 S06	4	4	16	55	6
S-4AKR 040 200 S06	4	4	20	60	6
S-4AKR 040 250 S06	4	4	25	65	6
S-4AKR 040 300 S06	4	4	30	70	6
S-4AKR 040 400 S06	4	4	40	80	6
S-4AKR 040 450 S06	4	4	45	90	6
S-4AKR 040 500 S06	4	4	50	100	6
S-4AKR 050 160 S06	5	5	16	55	6
S-4AKR 050 200 S06	5	5	20	60	6
S-4AKR 050 250 S06	5	5	25	65	6
S-4AKR 050 300 S06	5	5	30	70	6
S-4AKR 050 400 S06	5	5	40	80	6
S-4AKR 050 500 S06	5	5	50	100	6
S-4AKR 060 200 S06	6	6	20	60	6
S-4AKR 060 300 S06	6	6	30	75	6
S-4AKR 060 400 S06	6	6	40	80	6
S-4AKR 060 500 S06	6	6	50	90	6
S-4AKR 080 200 S08	8	10	20	65	8
S-4AKR 080 300 S08	8	10	30	80	8
S-4AKR 080 400 S08	8	10	40	100	8
S-4AKR 100 250 S10	10	15	25	70	10
S-4AKR 100 350 S10	10	15	35	90	10
S-4AKR 100 450 S10	10	15	45	110	10
S-4AKR 120 300 S12	12	18	30	80	12
S-4AKR 120 400 S12	12	18	40	100	12
S-4AKR 120 500 S12	12	18	50	120	12

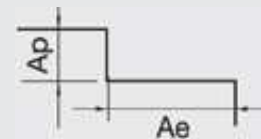
Material		Carbon Steels / Alloy Steels S45C / S50C / SK / SCM / SUS				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness		~ 325HB				30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
0.8mm	4	21,000	950	0.015	0.150	21,500	640	0.010	0.160	17,200	450	0.010	0.150	9,800	220	0.005	0.100
	8	17,800	710	0.010	0.020	13,800	480	0.007	0.019	11,000	340	0.005	0.018	8,500	170	0.003	0.012
	12	14,700	500	0.007	0.006	11,000	360	0.006	0.006	8,800	250	0.004	0.006	7,200	120	0.002	0.003
1mm	4	19,800	900	0.030	0.300	20,500	620	0.020	0.300	16,200	440	0.015	0.250	9,100	210	0.008	0.185
	10	15,800	620	0.012	0.020	12,000	430	0.010	0.020	9,400	300	0.008	0.018	7,300	140	0.004	0.010
	16	10,500	300	0.007	0.005	10,000	200	0.006	0.005	8,000	140	0.004	0.004	5,300	70	0.002	0.002
1.2mm	6	17,200	1,000	0.034	0.200	15,200	700	0.025	0.190	12,000	500	0.018	0.170	8,800	250	0.010	0.110
	10	15,000	750	0.025	0.040	12,000	520	0.020	0.030	9,500	360	0.012	0.035	7,000	180	0.007	0.026
	16	10,700	320	0.012	0.010	9,700	250	0.006	0.008	7,500	170	0.004	0.008	5,100	80	0.004	0.005
1.5mm	6	14,800	1,100	0.065	0.450	13,300	740	0.050	0.440	10,400	570	0.030	0.400	7,600	290	0.020	0.250
	10	13,100	850	0.041	0.100	10,300	600	0.038	0.100	8,500	430	0.025	0.080	6,500	210	0.015	0.050
	20	8,500	260	0.010	0.010	7,500	200	0.010	0.010	6,000	130	0.007	0.010	3,800	38	0.003	0.007
2mm	6	14,300	1,500	0.065	0.070	11,900	1,000	0.050	0.050	9,500	760	0.030	0.050	7,000	380	0.020	0.040
	10	12,000	980	0.050	0.340	9,500	800	0.040	0.300	7,500	570	0.025	0.250	6,000	280	0.015	0.200
	20	8,100	380	0.015	0.040	6,700	250	0.010	0.035	5,100	180	0.008	0.030	3,200	40	0.003	0.020
	30	6,300	220	0.006	0.010	5,400	160	0.005	0.010	4,300	110	0.003	0.010	2,200	10	0.001	0.005
2.5mm	12	10,000	800	0.050	0.450	7,600	680	0.040	0.420	6,000	480	0.025	0.400	5,300	310	0.016	0.250
	20	7,300	480	0.025	0.090	6,300	400	0.020	0.090	4,800	280	0.015	0.080	3,300	270	0.010	0.050
	30	5,600	300	0.010	0.025	4,200	330	0.009	0.025	3,300	230	0.006	0.025	2,100	200	0.002	0.015
3mm	10	8,600	820	0.070	0.925	6,800	710	0.050	0.900	5,200	500	0.030	0.800	4,800	380	0.020	0.550
	20	6,400	540	0.040	0.200	5,800	480	0.030	0.200	4,500	330	0.020	0.150	3,200	320	0.012	0.110
	30	5,000	370	0.020	0.060	4,100	400	0.015	0.055	3,200	270	0.012	0.050	2,100	240	0.008	0.035
	40	4,400	260	0.010	0.022	3,900	300	0.012	0.025	3,000	220	0.008	0.022	1,800	150	0.005	0.014
4mm	12	7,000	940	0.100	2.700	4,700	720	0.100	2.500	3,900	500	0.070	2.300	3,900	440	0.040	1.400
	20	5,100	600	0.060	0.650	4,100	540	0.074	0.612	3,400	380	0.060	0.500	3,100	360	0.032	0.350
	30	4,000	440	0.040	0.200	3,600	440	0.050	0.165	2,800	310	0.040	0.160	2,100	270	0.025	0.100
	40	3,400	340	0.025	0.080	2,800	360	0.040	0.070	2,200	250	0.025	0.070	1,700	170	0.015	0.050
5mm	16	5,000	850	0.120	2.800	3,900	650	0.100	2.700	3,100	460	0.070	2.600	3,100	460	0.043	1.530
	35	3,000	440	0.070	0.300	2,700	470	0.055	0.255	2,100	320	0.040	0.240	1,800	250	0.020	0.162
	50	2,300	280	0.030	0.090	1,800	300	0.020	0.090	1,400	210	0.012	0.080	1,300	100	0.009	0.055
6mm	20	3,700	760	0.150	3.220	3,100	680	0.120	3.200	2,400	480	0.090	3.000	3,100	570	0.050	2.000
	40	2,100	400	0.075	0.400	1,900	440	0.050	0.380	1,600	310	0.040	0.350	1,600	220	0.025	0.230
8mm	20	3,500	800	0.170	3.540	2,900	690	0.140	3.500	2,400	490	0.100	3.200	2,900	580	0.052	2.100
	40	2,000	430	0.085	0.550	1,800	450	0.055	0.350	1,400	320	0.040	0.420	1,800	230	0.027	0.240
10mm	25	2,700	820	0.175	3.620	2,500	700	0.150	3.560	2,100	490	0.110	3.250	2,500	580	0.055	2.250
	45	1,600	400	0.090	0.554	1,400	430	0.050	0.354	1,100	310	0.045	0.430	1,400	240	0.028	0.255
12mm	30	2,300	790	0.188	3.660	2,100	730	0.155	3.600	1,700	490	0.120	3.330	2,100	590	0.058	2.450
	50	1,300	360	0.094	0.560	1,050	380	0.052	0.360	1,000	320	0.050	0.440	1,000	250	0.029	0.260

Depth of Cut

Slotting
 • Ap : Axial Depth
 • D : Outside Diameter



Side Milling
 • Ap : Axial Depth
 • Ae : Radial Depth

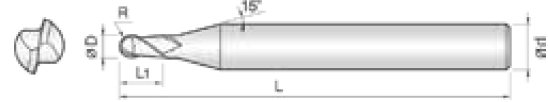




2 Flutes High Speed Short Length Ball End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Short overall length for easy use with shrinking chuck.
- Very nice work surface finish.



Size	D Tolerance
D ≤ Ø6	+0~ -0.01mm
D > Ø6	+0~ -0.015mm

Unit : mm

2AKB, Ball

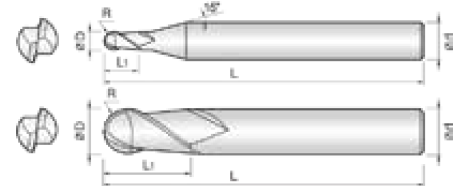
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2AKB 002 002 S04	0.1R X 0.2	0.2	38	4
2AKB 003 003 S04	0.15R X 0.3	0.3	38	4
2AKB 004 004 S04	0.2R X 0.4	0.4	38	4
2AKB 005 005 S04	0.25R X 0.5	0.5	38	4
2AKB 006 006 S04	0.3R X 0.6	0.6	38	4
2AKB 007 007 S04	0.35R X 0.7	0.7	38	4
2AKB 008 008 S04	0.4R X 0.8	0.8	38	4
2AKB 009 009 S04	0.45R X 0.9	0.9	38	4
2AKB 010 010 S04	0.5R X 1	1	40	4
2AKB 010 010 S06	0.5R X 1	1	40	6
2AKB 015 015 S04	0.75R X 1.5	1.5	40	4
2AKB 015 015 S06	0.75R X 1.5	1.5	40	6
2AKB 020 020 S04	1R X 2	2	45	4
2AKB 020 020 S06	1R X 2	2	45	6
2AKB 030 030 S04	1.5R X 3	3	45	4
2AKB 030 030 S06	1.5R X 3	3	45	6
2AKB 040 040 S04	2R X 4	4	45	4
2AKB 040 040 S06	2R X 4	4	45	6
2AKB 050 050 S06	2.5R X 5	5	50	6
2AKB 060 060 050	3R X 6	6	50	6
2AKB 060 060 060	3R X 6	6	60	6
2AKB 080 080 050	4R X 8	8	50	8
2AKB 080 080 060	4R X 8	8	60	8
2AKB 100 100 060	5R X 10	10	60	10
2AKB 100 100 070	5R X 10	10	70	10
2AKB 120 120 060	6R X 12	12	60	12
2AKB 120 120 070	6R X 12	12	70	12



2 Flutes High Speed Standard Length Ball End Mills

Endmills for pre-hardened and hardened steel(HRC50~62)

- High precise edge tolerance.
- Very nice work surface finish.



Size	D Tolerance
D ≤ Ø6	+0~-0.01mm
D > Ø6	+0~-0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2AKLB 001 002 S04	0.05R X 0.1	0.2	40	4
2AKLB 0015 003 S04	0.075R X 0.15	0.3	40	4
2AKLB 002 004 S04	0.1R X 0.2	0.4	40	4
2AKLB 003 006 S04	0.15R X 0.3	0.6	40	4
2AKLB 004 008 S04	0.2R X 0.4	0.8	40	4
2AKLB 005 010 S04	0.25R X 0.5	1	45	4
2AKLB 006 012 S04	0.3R X 0.6	1.2	45	4
2AKLB 007 015 S04	0.35R X 0.7	1.5	45	4
2AKLB 008 020 S04	0.4R X 0.8	2	45	4
2AKLB 009 020 S04	0.45R X 0.9	2	45	4
2AKLB 010 025 S04	0.5R X 1	2.5	50	4
2AKLB 010 025 S06	0.5R X 1	2.5	50	6
2AKLB 010 025 070	0.5R X 1	2.5	70	6
2AKLB 010 025 100	0.5R X 1	2.5	100	6
2AKLB 012 030 S04	0.6R X 1.2	3	50	4
2AKLB 015 040 S04	0.75R X 1.5	4	50	4
2AKLB 015 040 S06	0.75R X 1.5	4	50	6
2AKLB 015 040 070	0.75R X 1.5	4	70	6
2AKLB 015 040 100	0.75R X 1.5	4	100	6
2AKLB 020 050 S04	1R X 2	5	50	4
2AKLB 020 050 S06	1R X 2	5	50	6
2AKLB 020 050 075	1R X 2	5	75	6
2AKLB 020 050 100	1R X 2	5	100	6
2AKLB 025 060 S04	1.25R X 2.5	6	50	4
2AKLB 025 060 S06	1.25R X 2.5	6	75	6
2AKLB 025 060 100	1.25R X 2.5	6	100	6
2AKLB 030 080 S03	1.5R X 3	8	60	3
2AKLB 030 080 S04	1.5R X 3	8	50	4
2AKLB 030 080 S06	1.5R X 3	8	60	6
2AKLB 030 080 080	1.5R X 3	8	80	6
2AKLB 030 080 100	1.5R X 3	8	100	6
2AKLB 035 080 S06	1.75R X 3.5	8	60	6
2AKLB 040 080 060	2R X 4	8	60	4
2AKLB 040 080 080	2R X 4	8	80	4
2AKLB 040 080 S06	2R X 4	8	70	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2AKLB 040 080 090	2R X 4	8	90	6
2AKLB 040 080 120	2R X 4	8	120	6
2AKLB 045 080 S06	2.25R X 4.5	8	70	6
2AKLB 050 080 S05	2.5R X 5	8	80	5
2AKLB 050 100 S06	2.5R X 5	10	75	6
2AKLB 055 100 S06	2.75R X 5.5	10	75	6
2AKLB 060 100 060	3R X 6	10	60	6
2AKLB 060 120 080	3R X 6	12	80	6
2AKLB 060 120 100	3R X 6	12	100	6
2AKLB 060 120 120	3R X 6	12	120	6
2AKLB 070 140 S08	3.5R X 7	14	80	8
2AKLB 080 140 090	4R X 8	14	90	8
2AKLB 080 140 110	4R X 8	14	110	8
2AKLB 080 140 150	4R X 8	14	150	8
2AKLB 090 160 S10	4.5R X 9	16	100	10
2AKLB 100 180 100	5R X 10	18	100	10
2AKLB 100 180 120	5R X 10	18	120	10
2AKLB 100 180 150	5R X 10	18	150	10
2AKLB 100 180 180	5R X 10	18	180	10
2AKLB 110 200 S12	5.5R X 11	20	110	12
2AKLB 120 220 110	6R X 12	22	110	12
2AKLB 120 220 130	6R X 12	22	130	12
2AKLB 120 220 150	6R X 12	22	150	12
2AKLB 120 220 200	6R X 12	22	200	12
2AKLB 130 240 S14	6.5R X 13	24	110	14
2AKLB 140 240 S14	7R X 14	24	110	14
2AKLB 160 300 130	8R X 16	30	130	16
2AKLB 160 300 160	8R X 16	30	160	16
2AKLB 160 300 200	8R X 16	30	200	16
2AKLB 200 380 160	10R X 20	38	160	20
2AKLB 200 380 200	10R X 20	38	200	20

2AKLB, Ball

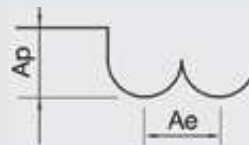
2AKLB/2AKB

• RPM : rev/min • Feed : mm/min

2AKLB, Ball

Material		Copper				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness						30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Radius	Cutting Length	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth	RPM	FEED	Ae Radial Depth	Ap Axial Depth
R0.05	0.2	40,000	250	0.040	0.008	40,000	250	0.040	0.004	30,000	180	0.030	0.003	X	X	X	X
R0.1	0.2	50,000	400	0.006	0.010	50,000	600	0.050	0.015	41,300	450	0.040	0.012	30,000	300	0.023	0.008
	0.4	50,000	400	0.005	0.004	50,000	230	0.035	0.015	41,300	240	0.030	0.080	30,000	220	0.018	0.006
R0.15	0.3	50,000	680	0.010	0.015	50,000	680	0.080	0.025	41,300	550	0.062	0.020	30,000	410	0.035	0.012
	0.6	50,000	680	0.010	0.010	50,000	620	0.065	0.022	41,300	530	0.045	0.020	30,000	380	0.025	0.010
R0.2	0.4	50,000	790	0.014	0.023	50,000	910	0.110	0.035	41,300	750	0.086	0.028	30,000	540	0.050	0.015
	0.8	50,000	790	0.014	0.010	50,000	800	0.100	0.035	41,300	600	0.080	0.028	30,000	490	0.044	0.015
R0.25	0.5	52,000	1,050	0.017	0.030	49,000	1,050	0.140	0.045	40,800	900	0.110	0.035	28,800	700	0.065	0.021
	1	52,000	1,050	0.017	0.018	46,000	950	0.120	0.040	38,300	700	0.080	0.030	26,600	550	0.053	0.020
R0.3	0.6	54,000	1,210	0.021	0.038	48,000	1,180	0.150	0.055	39,600	1,000	0.120	0.043	27,500	750	0.078	0.025
	1.2	54,000	1,210	0.020	0.020	45,500	920	0.145	0.050	37,500	720	0.110	0.040	27,000	520	0.067	0.020
R0.4	0.8	48,000	1,570	0.030	0.050	45,000	1,200	0.180	0.070	36,500	1,100	0.180	0.060	26,500	810	0.100	0.035
	2	48,000	1,570	0.025	0.030	42,000	980	0.150	0.060	33,500	800	0.150	0.050	23,800	550	0.080	0.035
R0.5	1	32,800	1,300	0.032	0.050	36,000	1,200	0.240	0.080	29,500	1,000	0.192	0.064	21,840	750	0.112	0.040
	2.5	32,800	1,300	0.032	0.020	33,600	1,000	0.204	0.080	28,000	800	0.160	0.064	20,700	600	0.094	0.040
R0.6	3	21,760	1,120	0.032	0.014	25,600	640	0.141	0.077	20,160	520	0.112	0.061	14,700	380	0.079	0.038
R0.75	1.5	21,600	1,500	0.054	0.070	28,000	1,280	0.360	0.120	23,000	1,024	0.288	0.096	17,200	760	0.168	0.060
	4	21,600	1,500	0.054	0.042	27,200	800	0.260	0.120	20,800	640	0.208	0.096	15,400	480	0.122	0.060
R1	2	16,000	1,500	0.071	0.090	24,000	1,480	0.480	0.160	20,000	1,184	0.360	0.128	14,600	890	0.224	0.080
	5	16,000	1,400	0.071	0.054	21,200	1,080	0.348	0.160	17,600	864	0.278	0.128	13,000	650	0.162	0.080
R1.25	6	12,800	1,500	0.012	0.054	20,400	1,280	0.434	0.200	16,800	1,024	0.344	0.160	12,400	760	0.201	0.100
R1.5	3	10,400	1,800	0.137	0.158	20,400	2,010	0.766	0.240	16,800	1,640	0.613	0.192	12,400	1,200	0.358	0.120
	8	10,400	1,800	0.137	0.080	20,400	1,900	0.612	0.240	16,800	1,500	0.490	0.192	12,400	1,100	0.286	0.120
R2	4	8,000	1,700	0.166	0.213	16,800	1,960	0.880	0.320	14,000	1,560	0.880	0.256	10,200	1,200	0.512	0.160
	8	8,000	1,700	0.166	0.107	16,800	1,880	0.800	0.320	14,000	1,500	0.653	0.256	10,200	1,120	0.381	0.160
R2.5	5	6,600	1,600	0.192	0.172	14,400	2,040	1.328	0.400	11,800	1,600	1.064	0.320	8,800	1,200	0.616	0.200
	10	6,600	1,600	0.192	0.160	14,400	1,960	1.200	0.400	11,800	1,600	0.960	0.320	8,800	1,170	0.560	0.200
R3	6	5,500	1,500	0.225	0.232	12,800	2,160	1.872	0.480	10,400	1,720	1.496	0.384	7,700	1,200	1.520	0.240
	12	5,500	1,500	0.225	0.184	12,800	1,920	1.224	0.480	10,400	1,500	0.980	0.384	7,700	1,150	0.572	0.240
R4	8	4,500	800	0.140	0.320	10,000	1,840	2.480	0.640	8,200	1,400	1.984	0.512	6,000	1,100	1.157	0.320
	14	4,500	800	0.140	0.320	10,000	1,600	2.000	0.640	8,200	1,200	1.312	0.512	6,000	960	0.766	0.320
R5	10	3,600	560	0.123	0.400	8,400	1,760	3.000	0.800	6,900	1,400	2.400	0.640	5,100	1,070	1.400	0.400
	18	3,600	560	0.123	0.400	8,400	1,300	2.040	0.800	6,900	1,100	1.632	0.640	5,100	810	0.952	0.400
R6	22	3,000	480	0.127	0.480	7,200	1,400	3.530	0.960	5,900	1,180	2.224	0.768	4,300	890	1.648	0.480
R8	30	2,200	460	0.115	0.450	6,800	1,630	3.870	1.120	4,900	1,100	2.350	0.790	4,000	810	1.742	0.500
R10	38	2,000	470	0.100	0.400	6,200	1,450	4.120	1.100	3,900	1,100	2.530	0.840	3,100	800	1.866	0.520

Depth of Cut



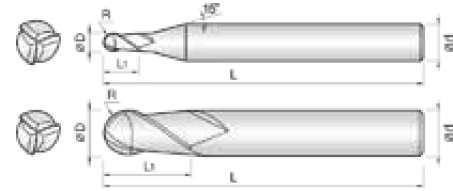
■ In case of slotting, decrease feed rate more than 50% the table.



3 Flutes High Speed Standard Length Ball End Mills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- High speed, feed applicable by 3 flute ball edge.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R × D	L1	L	d
3AKB 020 050 S06	1R X 2	5	50	6
3AKB 030 080 S06	1.5R X 3	8	65	6
3AKB 040 080 S04	2R X 4	8	60	4
3AKB 040 080 S06	2R X 4	8	70	6
3AKB 050 100 S06	2.5R X 5	10	75	6
3AKB 060 120 S06	3R X 6	12	80	6
3AKB 080 140 S08	4R X 8	14	90	8
3AKB 100 180 S10	5R X 10	18	100	10
3AKB 120 220 S12	6R X 12	22	110	12

3AKB, Ball

3AKB

• RPM : rev./min • Feed : mm/min

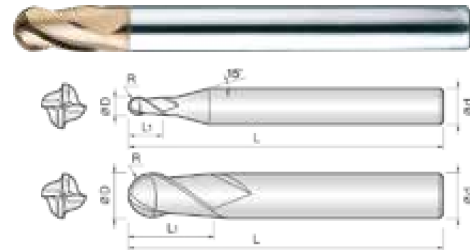
Material	for Roughing								for Finishing							
	Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK				Hardened Steels SKD61				Alloy Steels/ Tool Steels/ Prehardened Steels SKD61 / NAK				Hardened Steels SKD61			
	~ 45HRC				45 ~ 55HRC				~ 45HRC				45 ~ 55HRC			
Radius	α ≤ 15°		α > 15°		α ≤ 15°		α > 15°		α ≤ 15°		α > 15°		α ≤ 15°		α > 15°	
	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R1	28,800	2,700	22,500	1,100	16,200	1,300	14,400	580	28,800	2,900	23,400	1,400	22,500	1,800	18,000	700
R1.5	22,800	3,000	18,000	1,200	13,100	1,500	11,400	630	22,900	3,700	23,400	1,600	18,900	2,100	14,900	800
R2	16,700	3,300	13,000	1,300	10,000	1,600	8,300	670	23,000	4,500	18,000	1,800	15,300	2,400	11,700	900
R2.5	14,200	3,500	11,000	1,300	8,500	1,700	7,100	700	21,000	5,000	15,800	1,900	13,500	2,500	10,400	1,000
R3	11,700	3,600	9,000	1,400	6,900	1,700	5,800	720	18,000	5,500	13,500	2,000	11,700	2,900	9,000	1,100
R4	9,000	4,500	7,000	1,800	5,400	2,100	4,300	830	13,500	6,800	10,000	2,400	9,000	3,400	6,800	1,300
R5	7,200	4,500	5,900	1,800	4,300	2,000	3,400	780	10,800	6,800	8,100	2,400	7,200	3,400	5,400	1,300
R6	5,900	4,100	4,800	1,600	3,600	1,900	2,900	760	9,000	6,300	6,800	2,300	6,000	3,200	4,500	1,200
Depth of Cut																



4 Flutes High Speed Standard Length Ball End Mills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- High speed, feed applicable by 4 flute ball edge.



Size	D Tolerance
D ≤ Ø6	+0~-0.01mm
D > Ø6	+0~-0.015mm

Unit : mm

4AKB, Ball

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
4AKB 030 080 S06	1.5R X 3	8	60	6
4AKB 040 080 S04	2R X 4	8	60	4
4AKB 040 080 S06	2R X 4	8	70	6
4AKB 050 100 S06	2.5R X 5	10	80	6
4AKB 060 120 S06	3R X 6	12	90	6
4AKB 080 140 S08	4R X 8	14	100	8
4AKB 100 180 S10	5R X 10	18	100	10
4AKB 120 220 S12	6R X 12	22	110	12
4AKB 160 300 S16	8R X 16	30	130	16

4AKB

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels/ Prehardened Steels SCM / SKD61 / SKD11 / NAK		Hardened Steels SKD61 / SUS420		Hardened Steels SKD11 / SKH / SKS	
	~ 45HRC		45 ~ 55HRC		55 ~ 62HRC	
Hardness	RPM	FEED	RPM	FEED	RPM	FEED
R1	28,000	1600 ~ 4800	20,000	1040 ~ 2880	12,800	640 ~ 1200
R1.5	26,400	1600 ~ 4800	16,000	960 ~ 2720	10,400	640 ~ 1200
R2	20,000	1600 ~ 4800	13,600	960 ~ 2720	8,000	640 ~ 1200
R2.5	18,400	1600 ~ 4800	12,000	960 ~ 2720	7,200	640 ~ 1200
R3	16,000	1440 ~ 4400	10,400	960 ~ 2960	6,600	560 ~ 1200
R4	12,000	1760 ~ 4000	8,000	1120 ~ 2720	5,000	560 ~ 1040
R5	9,600	1840 ~ 3680	6,400	1200 ~ 2400	4,000	560 ~ 800
R6	8,000	1520 ~ 3280	5,300	1040 ~ 2160	3,300	560 ~ 800
R8	6,000	1280 ~ 2560	4,000	880 ~ 1760	2,500	480 ~ 640

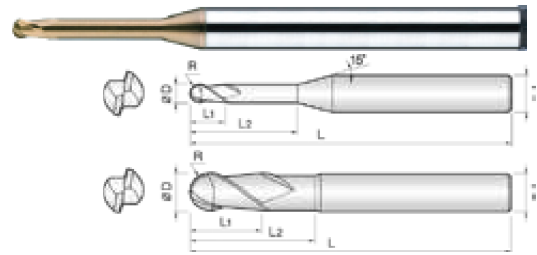
Depth of Cut	Alloy Steels/ Prehardened Steels	Hardened Steels	Hardened Steels



2 Flutes High Speed Rib Ball End Mills

Endmills for pre-hardened and hardened steel (HRC50~65)

- High precise edge tolerance.
- Very nice work surface finish.



Size	D Tolerance
D ≤ Ø6	+0 -0.01mm
D > Ø6	+0 -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 001 003 S04	0.05R X 0.1	0.3	-	40	4
2AKR 001 005 S04	0.05R X 0.1	0.5	-	40	4
2AKR 002 005 S04	0.1R X 0.2	0.2	0.5	40	4
2AKR 002 010 S04	0.1R X 0.2	0.2	1	40	4
2AKR 002 015 S04	0.1R X 0.2	0.2	1.5	40	4
2AKR 002 020 S04	0.1R X 0.2	0.2	2	40	4
2AKR 003 010 S04	0.15R X 0.3	0.3	1	40	4
2AKR 003 015 S04	0.15R X 0.3	0.3	1.5	40	4
2AKR 003 020 S04	0.15R X 0.3	0.3	2	40	4
2AKR 003 030 S04	0.15R X 0.3	0.3	3	40	4
2AKR 003 040 S04	0.15R X 0.3	0.3	4	40	4
2AKR 003 050 S04	0.15R X 0.3	0.3	5	40	4
2AKR 004 010 S04	0.2R X 0.4	0.4	1	40	4
2AKR 004 020 S04	0.2R X 0.4	0.4	2	40	4
2AKR 004 030 S04	0.2R X 0.4	0.4	3	40	4
2AKR 004 040 S04	0.2R X 0.4	0.4	4	40	4
2AKR 004 050 S04	0.2R X 0.4	0.4	5	40	4
2AKR 004 060 S04	0.2R X 0.4	0.4	6	40	4
2AKR 004 080 S04	0.2R X 0.4	0.4	8	40	4
2AKR 004 100 S04	0.2R X 0.4	0.4	10	40	4
2AKR 005 010 S04	0.25R X 0.5	0.5	1	45	4
2AKR 005 020 S04	0.25R X 0.5	0.5	2	45	4
2AKR 005 030 S04	0.25R X 0.5	0.5	3	45	4
2AKR 005 040 S04	0.25R X 0.5	0.5	4	45	4
2AKR 005 050 S04	0.25R X 0.5	0.5	5	45	4
2AKR 005 060 S04	0.25R X 0.5	0.5	6	45	4
2AKR 005 080 S04	0.25R X 0.5	0.5	8	45	4
2AKR 005 100 S04	0.25R X 0.5	0.5	10	45	4
2AKR 005 120 S04	0.25R X 0.5	0.5	12	45	4
2AKR 005 140 S04	0.25R X 0.5	0.5	14	45	4
2AKR 006 010 S04	0.3R X 0.6	0.6	1	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 006 020 S04	0.3R X 0.6	0.6	2	45	4
2AKR 006 030 S04	0.3R X 0.6	0.6	3	45	4
2AKR 006 040 S04	0.3R X 0.6	0.6	4	45	4
2AKR 006 050 S04	0.3R X 0.6	0.6	5	45	4
2AKR 006 060 S04	0.3R X 0.6	0.6	6	45	4
2AKR 006 080 S04	0.3R X 0.6	0.6	8	45	4
2AKR 006 100 S04	0.3R X 0.6	0.6	10	45	4
2AKR 006 120 S04	0.3R X 0.6	0.6	12	45	4
2AKR 006 140 S04	0.3R X 0.6	0.6	14	45	4
2AKR 006 160 S04	0.3R X 0.6	0.6	16	45	4
2AKR 007 020 S04	0.35R X 0.7	0.7	2	45	4
2AKR 007 040 S04	0.35R X 0.7	0.7	4	45	4
2AKR 007 080 S04	0.35R X 0.7	0.7	8	45	4
2AKR 007 100 S04	0.35R X 0.7	0.7	10	45	4
2AKR 007 120 S04	0.35R X 0.7	0.7	12	45	4
2AKR 008 020 S04	0.4R X 0.8	0.8	2	45	4
2AKR 008 040 S04	0.4R X 0.8	0.8	4	45	4
2AKR 008 060 S04	0.4R X 0.8	0.8	6	45	4
2AKR 008 080 S04	0.4R X 0.8	0.8	8	45	4
2AKR 008 100 S04	0.4R X 0.8	0.8	10	45	4
2AKR 008 120 S04	0.4R X 0.8	0.8	12	45	4
2AKR 008 140 S04	0.4R X 0.8	0.8	14	45	4
2AKR 008 160 S04	0.4R X 0.8	0.8	16	45	4
2AKR 009 040 S04	0.45R X 0.9	0.9	4	45	4
2AKR 010 020 S04	0.5R X 1	1	2	45	4
2AKR 010 020 S06	0.5R X 1	1	2	50	6
2AKR 010 030 S04	0.5R X 1	1	3	45	4
2AKR 010 030 S06	0.5R X 1	1	3	50	6
2AKR 010 040 S04	0.5R X 1	1	4	45	4
2AKR 010 040 S06	0.5R X 1	1	4	50	6
2AKR 010 050 S04	0.5R X 1	1	5	45	4

2AKR, Ball



0.05R - 3R 4R - 8R

Unit : mm

2AKR, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 010 050 S06	0.5R X 1	1	5	50	6
2AKR 010 060 S04	0.5R X 1	1	6	45	4
2AKR 010 060 S06	0.5R X 1	1	6	50	6
2AKR 010 080 S04	0.5R X 1	1	8	45	4
2AKR 010 080 S06	0.5R X 1	1	8	50	6
2AKR 010 100 S04	0.5R X 1	1	10	50	4
2AKR 010 100 S06	0.5R X 1	1	10	50	6
2AKR 010 120 S04	0.5R X 1	1	12	50	4
2AKR 010 120 S06	0.5R X 1	1	12	50	6
2AKR 010 140 S04	0.5R X 1	1	14	50	4
2AKR 010 140 S06	0.5R X 1	1	14	50	6
2AKR 010 160 S04	0.5R X 1	1	16	50	4
2AKR 010 160 S06	0.5R X 1	1	16	60	6
2AKR 010 180 S04	0.5R X 1	1	18	50	4
2AKR 010 180 S06	0.5R X 1	1	18	60	6
2AKR 010 200 S04	0.5R X 1	1	20	50	4
2AKR 010 200 S06	0.5R X 1	1	20	60	6
2AKR 010 220 S04	0.5R X 1	1	22	60	4
2AKR 010 220 S06	0.5R X 1	1	22	65	6
2AKR 010 250 S04	0.5R X 1	1	25	60	4
2AKR 012 040 S04	0.6R X 1.2	1.2	4	45	4
2AKR 012 040 S06	0.6R X 1.2	1.2	4	50	6
2AKR 012 060 S04	0.6R X 1.2	1.2	6	45	4
2AKR 012 060 S06	0.6R X 1.2	1.2	6	50	6
2AKR 012 080 S04	0.6R X 1.2	1.2	8	45	4
2AKR 012 080 S06	0.6R X 1.2	1.2	8	50	6
2AKR 012 100 S04	0.6R X 1.2	1.2	10	50	4
2AKR 012 100 S06	0.6R X 1.2	1.2	10	50	6
2AKR 012 120 S04	0.6R X 1.2	1.2	12	50	4
2AKR 012 120 S06	0.6R X 1.2	1.2	12	50	6
2AKR 012 160 S04	0.6R X 1.2	1.2	16	50	4
2AKR 012 160 S06	0.6R X 1.2	1.2	16	60	6
2AKR 012 200 S04	0.6R X 1.2	1.2	20	50	4
2AKR 012 200 S06	0.6R X 1.2	1.2	20	60	6
2AKR 012 240 S04	0.6R X 1.2	1.2	24	60	4
2AKR 012 240 S06	0.6R X 1.2	1.2	24	65	6
2AKR 014 060 S04	0.7R X 1.4	1.4	6	45	4
2AKR 014 080 S04	0.7R X 1.4	1.4	8	45	4
2AKR 014 120 S04	0.7R X 1.4	1.4	12	50	4
2AKR 014 160 S04	0.7R X 1.4	1.4	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 015 030 S04	0.75R X 1.5	1.5	3	45	4
2AKR 015 030 S06	0.75R X 1.5	1.5	3	50	6
2AKR 015 040 S04	0.75R X 1.5	1.5	4	45	4
2AKR 015 040 S06	0.75R X 1.5	1.5	4	50	6
2AKR 015 060 S04	0.75R X 1.5	1.5	6	45	4
2AKR 015 060 S06	0.75R X 1.5	1.5	6	50	6
2AKR 015 080 S04	0.75R X 1.5	1.5	8	45	4
2AKR 015 080 S06	0.75R X 1.5	1.5	8	50	6
2AKR 015 100 S04	0.75R X 1.5	1.5	10	50	4
2AKR 015 100 S06	0.75R X 1.5	1.5	10	50	6
2AKR 015 120 S04	0.75R X 1.5	1.5	12	50	4
2AKR 015 120 S06	0.75R X 1.5	1.5	12	50	6
2AKR 015 140 S04	0.75R X 1.5	1.5	14	50	4
2AKR 015 140 S06	0.75R X 1.5	1.5	14	50	6
2AKR 015 160 S04	0.75R X 1.5	1.5	16	50	4
2AKR 015 160 S06	0.75R X 1.5	1.5	16	60	6
2AKR 015 180 S04	0.75R X 1.5	1.5	18	50	4
2AKR 015 180 S06	0.75R X 1.5	1.5	18	60	6
2AKR 015 200 S04	0.75R X 1.5	1.5	20	50	4
2AKR 015 200 S06	0.75R X 1.5	1.5	20	60	6
2AKR 015 220 S04	0.75R X 1.5	1.5	22	60	4
2AKR 015 220 S06	0.75R X 1.5	1.5	22	65	6
2AKR 015 250 S04	0.75R X 1.5	1.5	25	60	4
2AKR 015 250 S06	0.75R X 1.5	1.5	25	65	6
2AKR 015 300 S04	0.75R X 1.5	1.5	30	70	4
2AKR 015 300 S06	0.75R X 1.5	1.5	30	70	6
2AKR 015 350 S04	0.75R X 1.5	1.5	35	70	4
2AKR 016 060 S04	0.8R X 1.6	1.6	6	45	4
2AKR 016 080 S04	0.8R X 1.6	1.6	8	45	4
2AKR 016 120 S04	0.8R X 1.6	1.6	12	50	4
2AKR 016 160 S04	0.8R X 1.6	1.6	16	50	4
2AKR 016 200 S04	0.8R X 1.6	1.6	20	50	4
2AKR 018 060 S04	0.9R X 1.8	1.8	6	45	4
2AKR 018 080 S04	0.9R X 1.8	1.8	8	45	4
2AKR 018 120 S04	0.9R X 1.8	1.8	12	50	4
2AKR 018 160 S04	0.9R X 1.8	1.8	16	50	4
2AKR 018 200 S04	0.9R X 1.8	1.8	20	50	4
2AKR 020 040 S04	1R X 2	2	4	45	4
2AKR 020 040 S06	1R X 2	2	4	50	6
2AKR 020 060 S04	1R X 2	2	6	45	4



0.05R - 3R 4R - 6R

Unit : mm

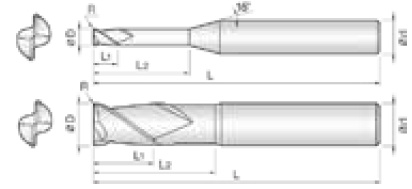
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 020 060 S06	1R X 2	2	6	50	6
2AKR 020 080 S04	1R X 2	2	8	45	4
2AKR 020 080 S06	1R X 2	2	8	50	6
2AKR 020 100 S04	1R X 2	2	10	50	4
2AKR 020 100 S06	1R X 2	2	10	50	6
2AKR 020 120 S04	1R X 2	2	12	50	4
2AKR 020 120 S06	1R X 2	2	12	50	6
2AKR 020 140 S04	1R X 2	2	14	50	4
2AKR 020 140 S06	1R X 2	2	14	50	6
2AKR 020 160 S04	1R X 2	2	16	50	4
2AKR 020 160 S06	1R X 2	2	16	60	6
2AKR 020 180 S04	1R X 2	2	18	50	4
2AKR 020 180 S06	1R X 2	2	18	60	6
2AKR 020 200 S04	1R X 2	2	20	50	4
2AKR 020 200 S06	1R X 2	2	20	60	6
2AKR 020 220 S04	1R X 2	2	22	60	4
2AKR 020 220 S06	1R X 2	2	22	65	6
2AKR 020 250 S04	1R X 2	2	25	60	4
2AKR 020 250 S06	1R X 2	2	25	65	6
2AKR 020 300 S04	1R X 2	2	30	70	4
2AKR 020 300 S06	1R X 2	2	30	70	6
2AKR 020 350 S04	1R X 2	2	35	70	4
2AKR 020 350 S06	1R X 2	2	35	75	6
2AKR 020 400 S04	1R X 2	2	40	80	4
2AKR 020 400 S06	1R X 2	2	40	80	6
2AKR 020 450 S04	1R X 2	2	45	80	4
2AKR 025 080 S04	1.25R X 2.5	2.5	8	45	4
2AKR 025 100 S04	1.25R X 2.5	2.5	10	50	4
2AKR 025 160 S04	1.25R X 2.5	2.5	16	50	4
2AKR 025 200 S04	1.25R X 2.5	2.5	20	60	4
2AKR 025 250 S04	1.25R X 2.5	2.5	25	60	4
2AKR 025 300 S04	1.25R X 2.5	2.5	30	70	4
2AKR 025 350 S04	1.25R X 2.5	2.5	35	70	4
2AKR 030 060 S06	1.5R X 3	3	6	50	6
2AKR 030 080 S06	1.5R X 3	3	8	50	6
2AKR 030 100 S06	1.5R X 3	3	10	50	6
2AKR 030 120 S06	1.5R X 3	3	12	50	6
2AKR 030 160 S06	1.5R X 3	3	16	60	6
2AKR 030 200 S06	1.5R X 3	3	20	60	6
2AKR 030 250 S06	1.5R X 3	3	25	65	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKR 030 300 S06	1.5R X 3	3	30	70	6
2AKR 030 350 S06	1.5R X 3	3	35	75	6
2AKR 030 400 S06	1.5R X 3	3	40	80	6
2AKR 030 450 S06	1.5R X 3	3	45	90	6
2AKR 030 500 S06	1.5R X 3	3	50	100	6
2AKR 030 600 S06	1.5R X 3	3	60	100	6
2AKR 040 080 S06	2R X 4	4	8	50	6
2AKR 040 100 S06	2R X 4	4	10	50	6
2AKR 040 120 S06	2R X 4	4	12	50	6
2AKR 040 160 S06	2R X 4	4	16	60	6
2AKR 040 200 S06	2R X 4	4	20	60	6
2AKR 040 250 S06	2R X 4	4	25	65	6
2AKR 040 300 S06	2R X 4	4	30	70	6
2AKR 040 350 S06	2R X 4	4	35	75	6
2AKR 040 400 S06	2R X 4	4	40	80	6
2AKR 040 450 S06	2R X 4	4	45	90	6
2AKR 040 500 S06	2R X 4	4	50	100	6
2AKR 040 550 S06	2R X 4	4	55	100	6
2AKR 040 600 S06	2R X 4	4	60	100	6
2AKR 050 160 S06	2.5R X 5	6	16	60	6
2AKR 050 200 S06	2.5R X 5	6	20	60	6
2AKR 050 250 S06	2.5R X 5	6	25	70	6
2AKR 050 300 S06	2.5R X 5	6	30	75	6
2AKR 050 400 S06	2.5R X 5	6	40	80	6
2AKR 050 450 S06	2.5R X 5	6	45	90	6
2AKR 050 500 S06	2.5R X 5	6	50	100	6
2AKR 050 600 S06	2.5R X 5	6	60	100	6
2AKR 060 150 S06	3R X 6	10	15	55	6
2AKR 060 300 S06	3R X 6	10	30	110	6
2AKR 080 250 060	4R X 8	12	25	60	8
2AKR 080 300 100	4R X 8	12	30	100	8
2AKR 100 300 070	5R X 10	16	30	70	10
2AKR 100 350 100	5R X 10	16	35	100	10
2AKR 120 300 075	6R X 12	18	30	75	12
2AKR 120 400 110	6R X 12	18	40	110	12

2AKR, Ball



∅0.2-∅6 ∅8-∅16



Size	D Tolerance
D ≤ ∅6	+0 ~ -0.01mm
D > ∅6	+0 ~ -0.015mm

Unit : mm

2 Flutes Rib Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 002 0002 010	0.2 X R0.02	0.2	1	40	4
2RAK 002 0002 015	0.2 X R0.02	0.2	1.5	40	4
2RAK 002 0005 010	0.2 X R0.05	0.2	1	40	4
2RAK 002 0005 015	0.2 X R0.05	0.2	1.5	40	4
2RAK 003 0005 010	0.3 X R0.05	0.3	1	40	4
2RAK 003 0005 020	0.3 X R0.05	0.3	2	40	4
2RAK 003 0005 030	0.3 X R0.05	0.3	3	40	4
2RAK 004 0005 010	0.4 X R0.05	0.4	1	40	4
2RAK 004 0005 020	0.4 X R0.05	0.4	2	40	4
2RAK 004 0005 030	0.4 X R0.05	0.4	3	40	4
2RAK 004 0005 040	0.4 X R0.05	0.4	4	40	4
2RAK 004 001 010	0.4 X R0.1	0.4	1	40	4
2RAK 004 001 015	0.4 X R0.1	0.4	1.5	40	4
2RAK 004 001 020	0.4 X R0.1	0.4	2	40	4
2RAK 004 001 030	0.4 X R0.1	0.4	3	40	4
2RAK 004 001 040	0.4 X R0.1	0.4	4	40	4
2RAK 005 0005 010	0.5 X R0.05	0.5	1	45	4
2RAK 005 0005 015	0.5 X R0.05	0.5	1.5	45	4
2RAK 005 0005 020	0.5 X R0.05	0.5	2	45	4
2RAK 005 0005 025	0.5 X R0.05	0.5	2.5	45	4
2RAK 005 0005 030	0.5 X R0.05	0.5	3	45	4
2RAK 005 0005 040	0.5 X R0.05	0.5	4	45	4
2RAK 005 0005 050	0.5 X R0.05	0.5	5	45	4
2RAK 005 0005 060	0.5 X R0.05	0.5	6	45	4
2RAK 005 001 010	0.5 X R0.1	0.5	1	45	4
2RAK 005 001 015	0.5 X R0.1	0.5	1.5	45	4
2RAK 005 001 020	0.5 X R0.1	0.5	2	45	4
2RAK 005 001 025	0.5 X R0.1	0.5	2.5	45	4
2RAK 005 001 030	0.5 X R0.1	0.5	3	45	4
2RAK 005 001 040	0.5 X R0.1	0.5	4	45	4
2RAK 005 001 050	0.5 X R0.1	0.5	5	45	4
2RAK 005 001 060	0.5 X R0.1	0.5	6	45	4
2RAK 006 0005 020	0.6 X R0.05	0.6	2	45	4
2RAK 006 0005 030	0.6 X R0.05	0.6	3	45	4
2RAK 006 0005 040	0.6 X R0.05	0.6	4	45	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 006 0005 060	0.6 X R0.05	0.6	6	45	4
2RAK 006 0005 080	0.6 X R0.05	0.6	8	45	4
2RAK 006 001 020	0.6 X R0.1	0.6	2	45	4
2RAK 006 001 030	0.6 X R0.1	0.6	3	45	4
2RAK 006 001 040	0.6 X R0.1	0.6	4	45	4
2RAK 006 001 060	0.6 X R0.1	0.6	6	45	4
2RAK 006 001 080	0.6 X R0.1	0.6	8	45	4
2RAK 007 001 020	0.7 X R0.1	0.7	2	45	4
2RAK 007 001 040	0.7 X R0.1	0.7	4	45	4
2RAK 007 001 060	0.7 X R0.1	0.7	6	45	4
2RAK 008 001 020	0.8 X R0.1	0.8	2	45	4
2RAK 008 001 040	0.8 X R0.1	0.8	4	45	4
2RAK 008 001 060	0.8 X R0.1	0.8	6	45	4
2RAK 008 001 080	0.8 X R0.1	0.8	8	45	4
2RAK 008 002 020	0.8 X R0.2	0.8	2	45	4
2RAK 008 002 040	0.8 X R0.2	0.8	4	45	4
2RAK 008 002 060	0.8 X R0.2	0.8	6	45	4
2RAK 008 002 080	0.8 X R0.2	0.8	8	45	4
2RAK 010 001 040	1 X R0.1	1	4	45	4
2RAK 010 001 060	1 X R0.1	1	6	45	4
2RAK 010 001 080	1 X R0.1	1	8	45	4
2RAK 010 001 100	1 X R0.1	1	10	50	4
2RAK 010 001 120	1 X R0.1	1	12	50	4
2RAK 010 001 160	1 X R0.1	1	16	50	4
2RAK 010 001 200	1 X R0.1	1	20	50	4
2RAK 010 002 040	1 X R0.2	1	4	45	4
2RAK 010 002 060	1 X R0.2	1	6	45	4
2RAK 010 002 080	1 X R0.2	1	8	45	4
2RAK 010 002 100	1 X R0.2	1	10	50	4
2RAK 010 002 120	1 X R0.2	1	12	50	4
2RAK 010 002 160	1 X R0.2	1	16	50	4
2RAK 010 002 200	1 X R0.2	1	20	50	4
2RAK 010 003 040	1 X R0.3	1	4	45	4
2RAK 010 003 060	1 X R0.3	1	6	45	4
2RAK 010 003 080	1 X R0.3	1	8	45	4

2RAK, Corner



002~06 08~016

Unit : mm

2RAK, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 010 003 100	1 X R0.3	1	10	50	4
2RAK 010 003 120	1 X R0.3	1	12	50	4
2RAK 010 003 160	1 X R0.3	1	16	50	4
2RAK 010 003 200	1 X R0.3	1	20	50	4
2RAK 012 001 040	1.2 X R0.1	1.2	4	45	4
2RAK 012 001 060	1.2 X R0.1	1.2	6	45	4
2RAK 012 001 080	1.2 X R0.1	1.2	8	45	4
2RAK 012 001 100	1.2 X R0.1	1.2	10	50	4
2RAK 012 001 120	1.2 X R0.1	1.2	12	50	4
2RAK 012 001 160	1.2 X R0.1	1.2	16	50	4
2RAK 012 001 200	1.2 X R0.1	1.2	20	50	4
2RAK 012 002 040	1.2 X R0.2	1.2	4	45	4
2RAK 012 002 060	1.2 X R0.2	1.2	6	45	4
2RAK 012 002 080	1.2 X R0.2	1.2	8	45	4
2RAK 012 002 100	1.2 X R0.2	1.2	10	50	4
2RAK 012 002 120	1.2 X R0.2	1.2	12	50	4
2RAK 012 002 160	1.2 X R0.2	1.2	16	50	4
2RAK 012 002 200	1.2 X R0.2	1.2	20	50	4
2RAK 012 003 040	1.2 X R0.3	1.2	4	45	4
2RAK 012 003 060	1.2 X R0.3	1.2	6	45	4
2RAK 012 003 080	1.2 X R0.3	1.2	8	45	4
2RAK 012 003 100	1.2 X R0.3	1.2	10	50	4
2RAK 012 003 120	1.2 X R0.3	1.2	12	50	4
2RAK 012 003 160	1.2 X R0.3	1.2	16	50	4
2RAK 012 003 200	1.2 X R0.3	1.2	20	50	4
2RAK 015 001 040	1.5 X R0.1	1.5	4	45	4
2RAK 015 001 060	1.5 X R0.1	1.5	6	45	4
2RAK 015 001 080	1.5 X R0.1	1.5	8	45	4
2RAK 015 001 100	1.5 X R0.1	1.5	10	50	4
2RAK 015 001 120	1.5 X R0.1	1.5	12	50	4
2RAK 015 001 160	1.5 X R0.1	1.5	16	50	4
2RAK 015 001 200	1.5 X R0.1	1.5	20	50	4
2RAK 015 001 220	1.5 X R0.1	1.5	22	60	4
2RAK 015 001 250	1.5 X R0.1	1.5	25	60	4
2RAK 015 002 040	1.5 X R0.2	1.5	4	45	4
2RAK 015 002 060	1.5 X R0.2	1.5	6	45	4
2RAK 015 002 080	1.5 X R0.2	1.5	8	45	4
2RAK 015 002 100	1.5 X R0.2	1.5	10	50	4
2RAK 015 002 120	1.5 X R0.2	1.5	12	50	4
2RAK 015 002 160	1.5 X R0.2	1.5	16	50	4
2RAK 015 002 200	1.5 X R0.2	1.5	20	50	4
2RAK 015 002 220	1.5 X R0.2	1.5	22	60	4
2RAK 015 002 250	1.5 X R0.2	1.5	25	60	4
2RAK 015 003 040	1.5 X R0.3	1.5	4	45	4
2RAK 015 003 060	1.5 X R0.3	1.5	6	45	4
2RAK 015 003 080	1.5 X R0.3	1.5	8	45	4
2RAK 015 003 100	1.5 X R0.3	1.5	10	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 015 003 120	1.5 X R0.3	1.5	12	50	4
2RAK 015 003 160	1.5 X R0.3	1.5	16	50	4
2RAK 015 003 200	1.5 X R0.3	1.5	20	50	4
2RAK 015 003 220	1.5 X R0.3	1.5	22	60	4
2RAK 015 003 250	1.5 X R0.3	1.5	25	60	4
2RAK 015 005 040	1.5 X R0.5	1.5	4	45	4
2RAK 015 005 060	1.5 X R0.5	1.5	6	45	4
2RAK 015 005 080	1.5 X R0.5	1.5	8	45	4
2RAK 015 005 100	1.5 X R0.5	1.5	10	50	4
2RAK 015 005 120	1.5 X R0.5	1.5	12	50	4
2RAK 015 005 160	1.5 X R0.5	1.5	16	50	4
2RAK 015 005 200	1.5 X R0.5	1.5	20	50	4
2RAK 015 005 220	1.5 X R0.5	1.5	22	60	4
2RAK 015 005 250	1.5 X R0.5	1.5	25	60	4
2RAK 020 001 060	2 X R0.1	2	6	45	4
2RAK 020 001 080	2 X R0.1	2	8	45	4
2RAK 020 001 100	2 X R0.1	2	10	50	4
2RAK 020 001 120	2 X R0.1	2	12	50	4
2RAK 020 001 160	2 X R0.1	2	16	50	4
2RAK 020 001 200	2 X R0.1	2	20	50	4
2RAK 020 001 250	2 X R0.1	2	25	60	4
2RAK 020 001 300	2 X R0.1	2	30	70	4
2RAK 020 002 060	2 X R0.2	2	6	45	4
2RAK 020 002 080	2 X R0.2	2	8	45	4
2RAK 020 002 100	2 X R0.2	2	10	50	4
2RAK 020 002 120	2 X R0.2	2	12	50	4
2RAK 020 002 160	2 X R0.2	2	16	50	4
2RAK 020 002 200	2 X R0.2	2	20	50	4
2RAK 020 002 250	2 X R0.2	2	25	60	4
2RAK 020 002 300	2 X R0.2	2	30	70	4
2RAK 020 003 060	2 X R0.3	2	6	45	4
2RAK 020 003 080	2 X R0.3	2	8	45	4
2RAK 020 003 100	2 X R0.3	2	10	50	4
2RAK 020 003 120	2 X R0.3	2	12	50	4
2RAK 020 003 160	2 X R0.3	2	16	50	4
2RAK 020 003 200	2 X R0.3	2	20	50	4
2RAK 020 003 250	2 X R0.3	2	25	60	4
2RAK 020 003 300	2 X R0.3	2	30	70	4
2RAK 020 005 060	2 X R0.5	2	6	45	4
2RAK 020 005 080	2 X R0.5	2	8	45	4
2RAK 020 005 100	2 X R0.5	2	10	50	4
2RAK 020 005 120	2 X R0.5	2	12	50	4
2RAK 020 005 160	2 X R0.5	2	16	50	4
2RAK 020 005 200	2 X R0.5	2	20	50	4
2RAK 020 005 250	2 X R0.5	2	25	60	4
2RAK 020 005 300	2 X R0.5	2	30	70	4
2RAK 025 001 100	2.5 X R0.1	2.5	10	50	4



002-06 008-016

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 025 001 160	2.5 X R0.1	2.5	16	50	4
2RAK 025 001 200	2.5 X R0.1	2.5	20	50	4
2RAK 025 001 250	2.5 X R0.1	2.5	25	60	4
2RAK 025 001 300	2.5 X R0.1	2.5	30	70	4
2RAK 025 002 100	2.5 X R0.2	2.5	10	50	4
2RAK 025 002 160	2.5 X R0.2	2.5	16	50	4
2RAK 025 002 200	2.5 X R0.2	2.5	20	50	4
2RAK 025 002 250	2.5 X R0.2	2.5	25	60	4
2RAK 025 002 300	2.5 X R0.2	2.5	30	70	4
2RAK 025 003 100	2.5 X R0.3	2.5	10	50	4
2RAK 025 003 160	2.5 X R0.3	2.5	16	50	4
2RAK 025 003 200	2.5 X R0.3	2.5	20	50	4
2RAK 025 003 250	2.5 X R0.3	2.5	25	60	4
2RAK 025 003 300	2.5 X R0.3	2.5	30	70	4
2RAK 025 005 100	2.5 X R0.5	2.5	10	50	4
2RAK 025 005 160	2.5 X R0.5	2.5	16	50	4
2RAK 025 005 200	2.5 X R0.5	2.5	20	50	4
2RAK 025 005 250	2.5 X R0.5	2.5	25	60	4
2RAK 025 005 300	2.5 X R0.5	2.5	30	70	4
2RAK 030 001 100	3 X R0.1	3	10	50	6
2RAK 030 001 120	3 X R0.1	3	12	55	6
2RAK 030 001 160	3 X R0.1	3	16	55	6
2RAK 030 001 200	3 X R0.1	3	20	60	6
2RAK 030 001 250	3 X R0.1	3	25	65	6
2RAK 030 001 300	3 X R0.1	3	30	70	6
2RAK 030 001 350	3 X R0.1	3	35	75	6
2RAK 030 001 400	3 X R0.1	3	40	80	6
2RAK 030 002 100	3 X R0.2	3	10	50	6
2RAK 030 002 120	3 X R0.2	3	12	55	6
2RAK 030 002 160	3 X R0.2	3	16	55	6
2RAK 030 002 200	3 X R0.2	3	20	60	6
2RAK 030 002 250	3 X R0.2	3	25	65	6
2RAK 030 002 300	3 X R0.2	3	30	70	6
2RAK 030 002 350	3 X R0.2	3	35	75	6
2RAK 030 002 400	3 X R0.2	3	40	80	6
2RAK 030 003 100	3 X R0.3	3	10	50	6
2RAK 030 003 120	3 X R0.3	3	12	55	6
2RAK 030 003 160	3 X R0.3	3	16	55	6
2RAK 030 003 200	3 X R0.3	3	20	60	6
2RAK 030 003 250	3 X R0.3	3	25	65	6
2RAK 030 003 300	3 X R0.3	3	30	70	6
2RAK 030 003 350	3 X R0.3	3	35	75	6
2RAK 030 003 400	3 X R0.3	3	40	80	6
2RAK 030 005 100	3 X R0.5	3	10	50	6
2RAK 030 005 120	3 X R0.5	3	12	55	6
2RAK 030 005 160	3 X R0.5	3	16	55	6
2RAK 030 005 200	3 X R0.5	3	20	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 030 005 250	3 X R0.5	3	25	65	6
2RAK 030 005 300	3 X R0.5	3	30	70	6
2RAK 030 005 350	3 X R0.5	3	35	75	6
2RAK 030 005 400	3 X R0.5	3	40	80	6
2RAK 030 010 100	3 X R1	3	10	50	6
2RAK 030 010 120	3 X R1	3	12	55	6
2RAK 030 010 160	3 X R1	3	16	55	6
2RAK 030 010 200	3 X R1	3	20	60	6
2RAK 030 010 250	3 X R1	3	25	65	6
2RAK 030 010 300	3 X R1	3	30	70	6
2RAK 030 010 350	3 X R1	3	35	75	6
2RAK 030 010 400	3 X R1	3	40	80	6
2RAK 040 001 050	4 X R0.1	4	12	50	4
2RAK 040 001 070	4 X R0.1	4	20	70	4
2RAK 040 001 120	4 X R0.1	4	12	55	6
2RAK 040 001 160	4 X R0.1	4	16	55	6
2RAK 040 001 200	4 X R0.1	4	20	60	6
2RAK 040 001 250	4 X R0.1	4	25	65	6
2RAK 040 001 300	4 X R0.1	4	30	70	6
2RAK 040 001 350	4 X R0.1	4	35	75	6
2RAK 040 001 400	4 X R0.1	4	40	80	6
2RAK 040 001 450	4 X R0.1	4	45	90	6
2RAK 040 001 500	4 X R0.1	4	50	100	6
2RAK 040 002 050	4 X R0.2	4	12	50	4
2RAK 040 002 070	4 X R0.2	4	20	70	4
2RAK 040 002 120	4 X R0.2	4	12	55	6
2RAK 040 002 160	4 X R0.2	4	16	55	6
2RAK 040 002 200	4 X R0.2	4	20	60	6
2RAK 040 002 250	4 X R0.2	4	25	65	6
2RAK 040 002 300	4 X R0.2	4	30	70	6
2RAK 040 002 350	4 X R0.2	4	35	75	6
2RAK 040 002 400	4 X R0.2	4	40	80	6
2RAK 040 002 450	4 X R0.2	4	45	90	6
2RAK 040 002 500	4 X R0.2	4	50	100	6
2RAK 040 003 050	4 X R0.3	4	12	50	4
2RAK 040 003 070	4 X R0.3	4	20	70	4
2RAK 040 003 120	4 X R0.3	4	12	55	6
2RAK 040 003 160	4 X R0.3	4	16	55	6
2RAK 040 003 200	4 X R0.3	4	20	60	6
2RAK 040 003 250	4 X R0.3	4	25	65	6
2RAK 040 003 300	4 X R0.3	4	30	70	6
2RAK 040 003 350	4 X R0.3	4	35	75	6
2RAK 040 003 400	4 X R0.3	4	40	80	6
2RAK 040 003 450	4 X R0.3	4	45	90	6
2RAK 040 003 500	4 X R0.3	4	50	100	6
2RAK 040 005 050	4 X R0.5	4	12	50	4
2RAK 040 005 070	4 X R0.5	4	20	70	4

2RAK, Corner



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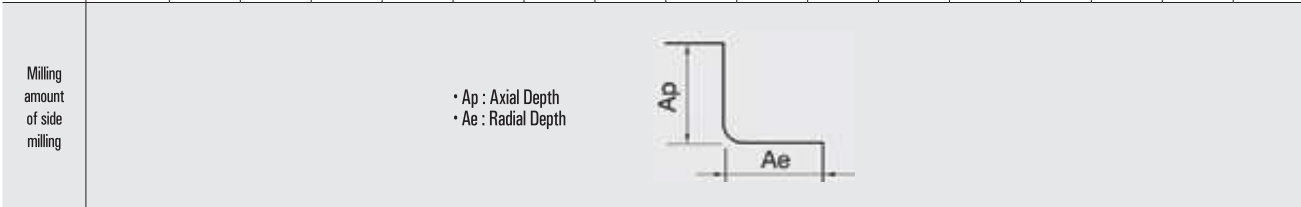
Unit : mm

2RAK, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 040 005 120	4 X R0.5	4	12	55	6
2RAK 040 005 160	4 X R0.5	4	16	55	6
2RAK 040 005 200	4 X R0.5	4	20	60	6
2RAK 040 005 250	4 X R0.5	4	25	65	6
2RAK 040 005 300	4 X R0.5	4	30	70	6
2RAK 040 005 350	4 X R0.5	4	35	75	6
2RAK 040 005 400	4 X R0.5	4	40	80	6
2RAK 040 005 450	4 X R0.5	4	45	90	6
2RAK 040 005 500	4 X R0.5	4	50	100	6
2RAK 040 010 050	4 X R1	4	12	50	4
2RAK 040 010 070	4 X R1	4	20	70	4
2RAK 040 010 120	4 X R1	4	12	55	6
2RAK 040 010 160	4 X R1	4	16	55	6
2RAK 040 010 200	4 X R1	4	20	60	6
2RAK 040 010 250	4 X R1	4	25	65	6
2RAK 040 010 300	4 X R1	4	30	70	6
2RAK 040 010 350	4 X R1	4	35	75	6
2RAK 040 010 400	4 X R1	4	40	80	6
2RAK 040 010 450	4 X R1	4	45	90	6
2RAK 040 010 500	4 X R1	4	50	100	6
2RAK 050 002 150	5 X R0.2	6	15	60	6
2RAK 050 002 250	5 X R0.2	6	25	70	6
2RAK 050 002 300	5 X R0.2	6	30	70	6
2RAK 050 002 400	5 X R0.2	6	40	80	6
2RAK 050 002 500	5 X R0.2	6	50	100	6
2RAK 050 005 150	5 X R0.5	6	15	60	6
2RAK 050 005 250	5 X R0.5	6	25	70	6
2RAK 050 005 300	5 X R0.5	6	30	70	6
2RAK 050 005 400	5 X R0.5	6	40	80	6
2RAK 050 005 500	5 X R0.5	6	50	100	6
2RAK 050 010 150	5 X R1	6	15	60	6
2RAK 050 010 250	5 X R1	6	25	70	6
2RAK 050 010 300	5 X R1	6	30	70	6
2RAK 050 010 400	5 X R1	6	40	80	6
2RAK 050 010 500	5 X R1	6	50	100	6
2RAK 060 001 200	6 X R0.1	7	20	60	6
2RAK 060 001 400	6 X R0.1	7	40	90	6
2RAK 060 002 200	6 X R0.2	7	20	60	6
2RAK 060 002 400	6 X R0.2	7	40	90	6
2RAK 060 003 200	6 X R0.3	7	20	60	6
2RAK 060 003 400	6 X R0.3	7	40	90	6
2RAK 060 005 200	6 X R0.5	7	20	60	6
2RAK 060 005 400	6 X R0.5	7	40	90	6
2RAK 060 010 200	6 X R1	7	20	60	6
2RAK 060 010 400	6 X R1	7	40	90	6
2RAK 060 015 200	6 X R1.5	7	20	60	6
2RAK 060 015 400	6 X R1.5	7	40	90	6

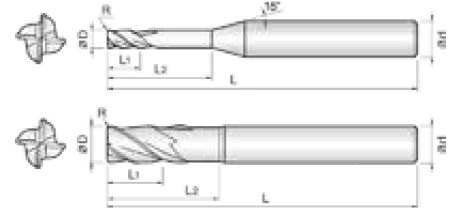
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
2RAK 080 002 220	8 X R0.2	9	22	65	8
2RAK 080 002 400	8 X R0.2	9	40	100	8
2RAK 080 003 220	8 X R0.3	9	22	65	8
2RAK 080 003 400	8 X R0.3	9	40	100	8
2RAK 080 005 220	8 X R0.5	9	22	65	8
2RAK 080 005 400	8 X R0.5	9	40	100	8
2RAK 080 010 220	8 X R1	9	22	65	8
2RAK 080 010 400	8 X R1	9	40	100	8
2RAK 080 015 220	8 X R1.5	9	22	65	8
2RAK 080 015 400	8 X R1.5	9	40	100	8
2RAK 100 002 240	10 X R0.2	11	24	70	10
2RAK 100 002 450	10 X R0.2	11	45	100	10
2RAK 100 003 240	10 X R0.3	11	24	70	10
2RAK 100 003 450	10 X R0.3	11	45	100	10
2RAK 100 005 240	10 X R0.5	11	24	70	10
2RAK 100 005 450	10 X R0.5	11	45	100	10
2RAK 100 010 240	10 X R1	11	24	70	10
2RAK 100 010 450	10 X R1	11	45	100	10
2RAK 100 015 240	10 X R1.5	11	24	70	10
2RAK 100 015 450	10 X R1.5	11	45	100	10
2RAK 100 020 240	10 X R2	11	24	70	10
2RAK 100 020 450	10 X R2	11	45	100	10
2RAK 120 002 260	12 X R0.2	13	26	80	12
2RAK 120 002 500	12 X R0.2	13	50	110	12
2RAK 120 003 260	12 X R0.3	13	26	80	12
2RAK 120 003 500	12 X R0.3	13	50	110	12
2RAK 120 005 260	12 X R0.5	13	26	80	12
2RAK 120 005 500	12 X R0.5	13	50	110	12
2RAK 120 010 260	12 X R1	13	26	80	12
2RAK 120 010 500	12 X R1	13	50	110	12
2RAK 120 015 260	12 X R1.5	13	26	80	12
2RAK 120 015 500	12 X R1.5	13	50	110	12
2RAK 120 020 260	12 X R2	13	26	80	12
2RAK 120 020 500	12 X R2	13	50	110	12
2RAK 120 030 260	12 X R3	13	26	80	12
2RAK 120 030 500	12 X R3	13	50	110	12
2RAK 160 005 110	16 X R0.5	20	35	110	16
2RAK 160 005 160	16 X R0.5	20	35	160	16
2RAK 160 010 110	16 X R1	20	35	110	16
2RAK 160 010 160	16 X R1	20	35	160	16

Material		Copper				Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness		30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC							
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
0.2mm	1mm	47,000	170	0.230	0.017	47,000	170	0.005	0.017	30,000	130	0.003	0.017	13,000	21	0.001	0.013
	1.5	47,000	150	0.014	0.009	47,000	150	0.004	0.009	23,000	90	0.003	0.009	10,200	17	0.001	0.006
0.3mm	1	51,000	420	0.026	0.017	51,000	430	0.006	0.017	30,000	300	0.004	0.013	18,700	30	0.003	0.013
	3	44,000	180	0.026	0.013	44,200	190	0.005	0.013	21,000	70	0.003	0.009	12,700	17	0.002	0.009
0.4mm	1	41,000	520	0.041	0.054	43,200	430	0.011	0.061	34,500	320	0.009	0.061	20,500	34	0.003	0.061
	3	29,000	390	0.023	0.046	23,000	330	0.007	0.023	23,000	240	0.006	0.023	13,700	26	0.003	0.023
0.5mm	1	42,000	1,160	0.069	0.099	42,000	970	0.029	0.104	34,000	730	0.026	0.104	21,000	80	0.011	0.104
	3	27,000	650	0.048	0.077	27,000	540	0.020	0.096	22,100	400	0.017	0.096	13,700	44	0.007	0.096
	5	22,400	480	0.023	0.038	22,400	400	0.009	0.009	18,000	300	0.009	0.009	11,300	33	0.003	0.009
0.6mm	2	24,300	520	0.097	0.138	24,300	430	0.009	0.186	20,000	330	0.009	0.186	12,900	37	0.003	0.186
	6	14,300	250	0.031	0.038	14,300	210	0.003	0.009	11,800	160	0.003	0.009	7,600	18	0.001	0.009
0.8mm	4	15,000	460	0.112	0.168	14,800	380	0.012	0.099	12,800	300	0.013	0.099	8,600	35	0.006	0.099
	8	11,000	260	0.026	0.085	11,000	230	0.004	0.077	9,300	160	0.003	0.077	6,500	17	0.002	0.077
1mm	4	12,000	830	0.171	0.344	12,000	700	0.026	0.230	10,200	570	0.030	0.230	7,200	68	0.014	0.230
	10	7,500	330	0.041	0.268	7,500	270	0.009	0.107	6,500	230	0.011	0.107	4,600	27	0.005	0.107
	16	6,000	200	0.015	0.191	6,000	160	0.003	0.023	5,200	140	0.004	0.023	3,700	16	0.002	0.023
1.2mm	6	8,000	600	0.158	0.398	8,000	500	0.015	0.077	7,100	420	0.017	0.077	5,300	51	0.009	0.077
	12	5,800	380	0.046	0.344	5,800	320	0.006	0.061	5,200	260	0.007	0.061	3,800	32	0.003	0.061
1.5mm	4	11,200	1,100	0.255	0.574	11,200	930	0.038	0.383	10,200	800	0.051	0.383	7,800	105	0.028	0.383
	10	7,200	760	0.128	0.482	7,200	640	0.027	0.245	6,600	550	0.036	0.245	5,100	72	0.020	0.245
	20	5,100	410	0.036	0.306	5,100	350	0.004	0.092	4,700	300	0.005	0.092	3,600	39	0.003	0.092
2mm	6	10,900	1,030	0.273	0.727	10,900	870	0.037	0.689	10,200	790	0.051	0.689	8,200	113	0.031	0.689
	12	8,000	830	0.158	0.612	8,000	700	0.026	0.383	7,200	630	0.037	0.383	5,900	91	0.022	0.383
	20	6,000	650	0.079	0.566	6,000	550	0.014	0.168	5,600	490	0.020	0.168	4,500	71	0.012	0.168
	30	5,100	570	0.043	0.383	5,100	470	0.004	0.115	4,700	430	0.004	0.115	3,700	60	0.002	0.115
2.5mm	10	9,000	1,030	0.288	0.727	9,000	870	0.044	0.459	8,500	820	0.064	0.459	7,100	131	0.041	0.459
	30	5,400	460	0.059	0.536	5,400	380	0.009	0.153	5,100	360	0.014	0.153	4,200	57	0.009	0.153
3mm	12	9,000	1,360	0.332	0.723	9,000	980	0.089	0.536	8,500	760	0.089	0.570	7,600	170	0.064	0.570
	20	7,100	890	0.221	0.663	7,100	750	0.062	0.493	6,700	580	0.062	0.493	6,000	128	0.037	0.493
	30	6,000	740	0.119	0.587	6,000	610	0.043	0.323	5,500	470	0.043	0.323	5,100	100	0.025	0.306
4mm	12	7,600	1,100	0.349	1.326	7,600	920	0.071	0.978	6,400	800	0.102	0.978	5,400	183	0.072	0.978
	20	5,900	1,000	0.326	1.152	5,900	850	0.046	0.765	5,000	730	0.068	0.765	4,200	168	0.049	0.765
	30	5,000	780	0.170	1.052	5,000	650	0.024	0.583	4,100	570	0.036	0.583	3,500	130	0.026	0.616
	45	4,100	380	0.084	0.972	4,100	320	0.006	0.284	3,500	280	0.009	0.284	3,000	65	0.006	0.284
5mm	15	6,700	1,780	0.606	1.980	6,700	1,480	0.092	1.170	4,800	990	0.130	1.170	4,000	297	0.096	1.170
	30	4,600	850	0.297	1.530	4,600	710	0.046	0.900	3,300	470	0.065	0.900	2,800	143	0.048	0.900
6mm	20	5,200	1,200	0.522	1.908	5,200	1,060	0.414	1.179	3,100	900	0.162	1.179	2,700	342	0.126	1.179
	40	4,000	1,000	0.491	1.782	4,000	790	0.356	1.134	2,300	660	0.142	1.134	2,000	265	0.107	1.134
8mm	22	4,800	1,100	0.459	2.210	4,800	940	0.364	1.320	2,800	790	0.143	1.320	2,400	301	0.111	1.320
	40	3,600	840	0.432	1.980	3,600	700	0.314	1.150	2,100	580	0.125	1.150	1,700	233	0.094	1.150
10mm	24	4,000	900	0.390	2.510	3,900	800	0.310	1.430	2,400	670	0.121	1.430	2,000	256	0.094	1.430
	45	3,000	710	0.368	2.120	3,000	590	0.267	1.160	1,700	490	0.106	1.160	1,500	198	0.080	1.160
12mm	26	3,300	760	0.328	2.620	3,300	670	0.260	1.760	2,000	560	0.102	1.760	1,700	215	0.079	1.760
	50	2,500	600	0.309	2.100	2,500	500	0.224	1.220	1,500	420	0.089	1.220	1,200	166	0.067	1.220
16mm	35	2,600	610	0.262	2.540	2,600	530	0.208	1.880	1,500	450	0.081	1.880	1,400	172	0.063	1.880





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Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

4 Flutes Rib Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and flute length for wide range application.

4RAK, Corner

Order Number	Diameter	Length of cut		Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	L	d
4RAK 010 0005 040	1 X R0.05	1	4	45	4	
4RAK 010 0005 060	1 X R0.05	1	6	45	4	
4RAK 010 0005 080	1 X R0.05	1	8	45	4	
4RAK 010 0005 100	1 X R0.05	1	10	50	4	
4RAK 010 0005 120	1 X R0.05	1	12	50	4	
4RAK 010 0005 160	1 X R0.05	1	16	50	4	
4RAK 010 0005 200	1 X R0.05	1	20	50	4	
4RAK 010 001 040	1 X R0.1	1	4	45	4	
4RAK 010 001 060	1 X R0.1	1	6	45	4	
4RAK 010 001 080	1 X R0.1	1	8	45	4	
4RAK 010 001 100	1 X R0.1	1	10	50	4	
4RAK 010 001 120	1 X R0.1	1	12	50	4	
4RAK 010 001 160	1 X R0.1	1	16	50	4	
4RAK 010 001 200	1 X R0.1	1	20	50	4	
4RAK 010 002 040	1 X R0.2	1	4	45	4	
4RAK 010 002 060	1 X R0.2	1	6	45	4	
4RAK 010 002 080	1 X R0.2	1	8	45	4	
4RAK 010 002 100	1 X R0.2	1	10	50	4	
4RAK 010 002 120	1 X R0.2	1	12	50	4	
4RAK 010 002 160	1 X R0.2	1	16	50	4	
4RAK 010 002 200	1 X R0.2	1	20	50	4	
4RAK 010 003 040	1 X R0.3	1	4	45	4	
4RAK 010 003 060	1 X R0.3	1	6	45	4	
4RAK 010 003 080	1 X R0.3	1	8	45	4	
4RAK 010 003 100	1 X R0.3	1	10	50	4	
4RAK 010 003 120	1 X R0.3	1	12	50	4	
4RAK 010 003 160	1 X R0.3	1	16	50	4	
4RAK 010 003 200	1 X R0.3	1	20	50	4	
4RAK 012 001 040	1.2 X R0.1	1.2	4	45	4	
4RAK 012 001 060	1.2 X R0.1	1.2	6	45	4	
4RAK 012 001 080	1.2 X R0.1	1.2	8	45	4	
4RAK 012 001 100	1.2 X R0.1	1.2	10	50	4	
4RAK 012 001 120	1.2 X R0.1	1.2	12	50	4	
4RAK 012 001 160	1.2 X R0.1	1.2	16	50	4	
4RAK 012 001 200	1.2 X R0.1	1.2	20	50	4	
4RAK 012 002 040	1.2 X R0.2	1.2	4	45	4	
4RAK 012 002 060	1.2 X R0.2	1.2	6	45	4	

Order Number	Diameter	Length of cut		Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	L	d
4RAK 012 002 080	1.2 X R0.2	1.2	8	45	4	
4RAK 012 002 100	1.2 X R0.2	1.2	10	50	4	
4RAK 012 002 120	1.2 X R0.2	1.2	12	50	4	
4RAK 012 002 160	1.2 X R0.2	1.2	16	50	4	
4RAK 012 002 200	1.2 X R0.2	1.2	20	50	4	
4RAK 012 003 040	1.2 X R0.3	1.2	4	45	4	
4RAK 012 003 060	1.2 X R0.3	1.2	6	45	4	
4RAK 012 003 080	1.2 X R0.3	1.2	8	45	4	
4RAK 012 003 100	1.2 X R0.3	1.2	10	50	4	
4RAK 012 003 120	1.2 X R0.3	1.2	12	50	4	
4RAK 012 003 160	1.2 X R0.3	1.2	16	50	4	
4RAK 012 003 200	1.2 X R0.3	1.2	20	50	4	
4RAK 015 001 060	1.5 X R0.1	1.5	6	45	4	
4RAK 015 001 080	1.5 X R0.1	1.5	8	45	4	
4RAK 015 001 100	1.5 X R0.1	1.5	10	50	4	
4RAK 015 001 120	1.5 X R0.1	1.5	12	50	4	
4RAK 015 001 160	1.5 X R0.1	1.5	16	50	4	
4RAK 015 001 200	1.5 X R0.1	1.5	20	50	4	
4RAK 015 001 220	1.5 X R0.1	1.5	22	60	4	
4RAK 015 001 250	1.5 X R0.1	1.5	25	60	4	
4RAK 015 002 060	1.5 X R0.2	1.5	6	45	4	
4RAK 015 002 080	1.5 X R0.2	1.5	8	45	4	
4RAK 015 002 100	1.5 X R0.2	1.5	10	50	4	
4RAK 015 002 120	1.5 X R0.2	1.5	12	50	4	
4RAK 015 002 160	1.5 X R0.2	1.5	16	50	4	
4RAK 015 002 200	1.5 X R0.2	1.5	20	50	4	
4RAK 015 002 220	1.5 X R0.2	1.5	22	60	4	
4RAK 015 002 250	1.5 X R0.2	1.5	25	60	4	
4RAK 015 003 060	1.5 X R0.3	1.5	6	45	4	
4RAK 015 003 080	1.5 X R0.3	1.5	8	45	4	
4RAK 015 003 100	1.5 X R0.3	1.5	10	50	4	
4RAK 015 003 120	1.5 X R0.3	1.5	12	50	4	
4RAK 015 003 160	1.5 X R0.3	1.5	16	50	4	
4RAK 015 003 200	1.5 X R0.3	1.5	20	50	4	
4RAK 015 003 220	1.5 X R0.3	1.5	22	60	4	
4RAK 015 003 250	1.5 X R0.3	1.5	25	60	4	
4RAK 015 005 060	1.5 X R0.5	1.5	6	45	4	



01-06 08-012

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 015 005 080	1.5 X R0.5	1.5	8	45	4
4RAK 015 005 100	1.5 X R0.5	1.5	10	50	4
4RAK 015 005 120	1.5 X R0.5	1.5	12	50	4
4RAK 015 005 160	1.5 X R0.5	1.5	16	50	4
4RAK 015 005 200	1.5 X R0.5	1.5	20	50	4
4RAK 015 005 220	1.5 X R0.5	1.5	22	60	4
4RAK 015 005 250	1.5 X R0.5	1.5	25	60	4
4RAK 020 001 060	2 X R0.1	2	6	45	4
4RAK 020 001 080	2 X R0.1	2	8	45	4
4RAK 020 001 100	2 X R0.1	2	10	50	4
4RAK 020 001 120	2 X R0.1	2	12	50	4
4RAK 020 001 160	2 X R0.1	2	16	50	4
4RAK 020 001 200	2 X R0.1	2	20	50	4
4RAK 020 001 250	2 X R0.1	2	25	60	4
4RAK 020 001 300	2 X R0.1	2	30	70	4
4RAK 020 001 350	2 X R0.1	2	35	70	4
4RAK 020 002 060	2 X R0.2	2	6	45	4
4RAK 020 002 080	2 X R0.2	2	8	45	4
4RAK 020 002 100	2 X R0.2	2	10	50	4
4RAK 020 002 120	2 X R0.2	2	12	50	4
4RAK 020 002 160	2 X R0.2	2	16	50	4
4RAK 020 002 200	2 X R0.2	2	20	50	4
4RAK 020 002 250	2 X R0.2	2	25	60	4
4RAK 020 002 300	2 X R0.2	2	30	70	4
4RAK 020 002 350	2 X R0.2	2	35	70	4
4RAK 020 003 060	2 X R0.3	2	6	45	4
4RAK 020 003 080	2 X R0.3	2	8	45	4
4RAK 020 003 100	2 X R0.3	2	10	50	4
4RAK 020 003 120	2 X R0.3	2	12	50	4
4RAK 020 003 160	2 X R0.3	2	16	50	4
4RAK 020 003 200	2 X R0.3	2	20	50	4
4RAK 020 003 250	2 X R0.3	2	25	60	4
4RAK 020 003 300	2 X R0.3	2	30	70	4
4RAK 020 003 350	2 X R0.3	2	35	70	4
4RAK 020 005 060	2 X R0.5	2	6	45	4
4RAK 020 005 080	2 X R0.5	2	8	45	4
4RAK 020 005 100	2 X R0.5	2	10	50	4
4RAK 020 005 120	2 X R0.5	2	12	50	4
4RAK 020 005 160	2 X R0.5	2	16	50	4
4RAK 020 005 200	2 X R0.5	2	20	50	4
4RAK 020 005 250	2 X R0.5	2	25	60	4
4RAK 020 005 300	2 X R0.5	2	30	70	4
4RAK 020 005 350	2 X R0.5	2	35	70	4
4RAK 025 001 100	2.5 X R0.1	2.5	10	50	4
4RAK 025 001 160	2.5 X R0.1	2.5	16	50	4
4RAK 025 001 200	2.5 X R0.1	2.5	20	50	4
4RAK 025 001 250	2.5 X R0.1	2.5	25	60	4
4RAK 025 001 300	2.5 X R0.1	2.5	30	70	4
4RAK 025 002 100	2.5 X R0.2	2.5	10	50	4
4RAK 025 002 160	2.5 X R0.2	2.5	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 025 002 200	2.5 X R0.2	2.5	20	50	4
4RAK 025 002 250	2.5 X R0.2	2.5	25	60	4
4RAK 025 002 300	2.5 X R0.2	2.5	30	70	4
4RAK 025 003 100	2.5 X R0.3	2.5	10	50	4
4RAK 025 003 160	2.5 X R0.3	2.5	16	50	4
4RAK 025 003 200	2.5 X R0.3	2.5	20	50	4
4RAK 025 003 250	2.5 X R0.3	2.5	25	60	4
4RAK 025 003 300	2.5 X R0.3	2.5	30	70	4
4RAK 025 005 100	2.5 X R0.5	2.5	10	50	4
4RAK 025 005 160	2.5 X R0.5	2.5	16	50	4
4RAK 025 005 200	2.5 X R0.5	2.5	20	50	4
4RAK 025 005 250	2.5 X R0.5	2.5	25	60	4
4RAK 025 005 300	2.5 X R0.5	2.5	30	70	4
4RAK 030 001 100	3 X R0.1	3	10	50	6
4RAK 030 001 160	3 X R0.1	3	16	55	6
4RAK 030 001 200	3 X R0.1	3	20	60	6
4RAK 030 001 250	3 X R0.1	3	25	65	6
4RAK 030 001 300	3 X R0.1	3	30	70	6
4RAK 030 001 350	3 X R0.1	3	35	75	6
4RAK 030 001 400	3 X R0.1	3	40	80	6
4RAK 030 001 500	3 X R0.1	3	50	100	6
4RAK 030 002 100	3 X R0.2	3	10	50	6
4RAK 030 002 160	3 X R0.2	3	16	55	6
4RAK 030 002 200	3 X R0.2	3	20	60	6
4RAK 030 002 250	3 X R0.2	3	25	65	6
4RAK 030 002 300	3 X R0.2	3	30	70	6
4RAK 030 002 350	3 X R0.2	3	35	75	6
4RAK 030 002 400	3 X R0.2	3	40	80	6
4RAK 030 002 500	3 X R0.2	3	50	100	6
4RAK 030 003 100	3 X R0.3	3	10	50	6
4RAK 030 003 160	3 X R0.3	3	16	55	6
4RAK 030 003 200	3 X R0.3	3	20	60	6
4RAK 030 003 250	3 X R0.3	3	25	65	6
4RAK 030 003 300	3 X R0.3	3	30	70	6
4RAK 030 003 350	3 X R0.3	3	35	75	6
4RAK 030 003 400	3 X R0.3	3	40	80	6
4RAK 030 003 500	3 X R0.3	3	50	100	6
4RAK 030 005 100	3 X R0.5	3	10	50	6
4RAK 030 005 160	3 X R0.5	3	16	55	6
4RAK 030 005 200	3 X R0.5	3	20	60	6
4RAK 030 005 250	3 X R0.5	3	25	65	6
4RAK 030 005 300	3 X R0.5	3	30	70	6
4RAK 030 005 350	3 X R0.5	3	35	75	6
4RAK 030 005 400	3 X R0.5	3	40	80	6
4RAK 030 005 500	3 X R0.5	3	50	100	6
4RAK 030 010 100	3 X R1	3	10	50	6
4RAK 030 010 160	3 X R1	3	16	55	6
4RAK 030 010 200	3 X R1	3	20	60	6
4RAK 030 010 250	3 X R1	3	25	65	6
4RAK 030 010 300	3 X R1	3	30	70	6

4RAK, Corner



01~06 08~012

Unit : mm

4RAK, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 030 010 350	3 X R1	3	35	75	6
4RAK 030 010 400	3 X R1	3	40	80	6
4RAK 030 010 500	3 X R1	3	50	100	6
4RAK 040 001 050	4 X R0.1	4	12	50	4
4RAK 040 001 070	4 X R0.1	4	20	70	4
4RAK 040 001 130	4 X R0.1	4	13	55	6
4RAK 040 001 160	4 X R0.1	4	16	55	6
4RAK 040 001 200	4 X R0.1	4	20	60	6
4RAK 040 001 250	4 X R0.1	4	25	65	6
4RAK 040 001 300	4 X R0.1	4	30	70	6
4RAK 040 001 350	4 X R0.1	4	35	75	6
4RAK 040 001 400	4 X R0.1	4	40	80	6
4RAK 040 001 450	4 X R0.1	4	45	90	6
4RAK 040 001 500	4 X R0.1	4	50	100	6
4RAK 040 002 050	4 X R0.2	4	12	50	4
4RAK 040 002 070	4 X R0.2	4	20	70	4
4RAK 040 002 130	4 X R0.2	4	13	55	6
4RAK 040 002 160	4 X R0.2	4	16	55	6
4RAK 040 002 200	4 X R0.2	4	20	60	6
4RAK 040 002 250	4 X R0.2	4	25	65	6
4RAK 040 002 300	4 X R0.2	4	30	70	6
4RAK 040 002 350	4 X R0.2	4	35	75	6
4RAK 040 002 400	4 X R0.2	4	40	80	6
4RAK 040 002 450	4 X R0.2	4	45	90	6
4RAK 040 002 500	4 X R0.2	4	50	100	6
4RAK 040 003 050	4 X R0.3	4	12	50	4
4RAK 040 003 070	4 X R0.3	4	20	70	4
4RAK 040 003 130	4 X R0.3	4	13	55	6
4RAK 040 003 160	4 X R0.3	4	16	55	6
4RAK 040 003 200	4 X R0.3	4	20	60	6
4RAK 040 003 250	4 X R0.3	4	25	65	6
4RAK 040 003 300	4 X R0.3	4	30	70	6
4RAK 040 003 350	4 X R0.3	4	35	75	6
4RAK 040 003 400	4 X R0.3	4	40	80	6
4RAK 040 003 450	4 X R0.3	4	45	90	6
4RAK 040 003 500	4 X R0.3	4	50	100	6
4RAK 040 005 050	4 X R0.5	4	12	50	4
4RAK 040 005 070	4 X R0.5	4	20	70	4
4RAK 040 005 130	4 X R0.5	4	13	55	6
4RAK 040 005 160	4 X R0.5	4	16	55	6
4RAK 040 005 200	4 X R0.5	4	20	60	6
4RAK 040 005 250	4 X R0.5	4	25	65	6
4RAK 040 005 300	4 X R0.5	4	30	70	6
4RAK 040 005 350	4 X R0.5	4	35	75	6
4RAK 040 005 400	4 X R0.5	4	40	80	6
4RAK 040 005 450	4 X R0.5	4	45	90	6
4RAK 040 005 500	4 X R0.5	4	50	100	6
4RAK 040 010 050	4 X R1	4	12	50	4
4RAK 040 010 070	4 X R1	4	20	70	4
4RAK 040 010 130	4 X R1	4	13	55	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 040 010 160	4 X R1	4	16	55	6
4RAK 040 010 200	4 X R1	4	20	60	6
4RAK 040 010 250	4 X R1	4	25	65	6
4RAK 040 010 300	4 X R1	4	30	70	6
4RAK 040 010 350	4 X R1	4	35	75	6
4RAK 040 010 400	4 X R1	4	40	80	6
4RAK 040 010 450	4 X R1	4	45	90	6
4RAK 040 010 500	4 X R1	4	50	100	6
4RAK 050 001 160	5 X R0.1	5	16	60	6
4RAK 050 001 300	5 X R0.1	5	30	70	6
4RAK 050 001 400	5 X R0.1	5	40	80	6
4RAK 050 001 500	5 X R0.1	5	50	100	6
4RAK 050 002 160	5 X R0.2	5	16	60	6
4RAK 050 002 300	5 X R0.2	5	30	70	6
4RAK 050 002 400	5 X R0.2	5	40	80	6
4RAK 050 002 500	5 X R0.2	5	50	100	6
4RAK 050 003 160	5 X R0.3	5	16	60	6
4RAK 050 003 300	5 X R0.3	5	30	70	6
4RAK 050 003 400	5 X R0.3	5	40	80	6
4RAK 050 003 500	5 X R0.3	5	50	100	6
4RAK 050 005 160	5 X R0.5	5	16	60	6
4RAK 050 005 300	5 X R0.5	5	30	70	6
4RAK 050 005 400	5 X R0.5	5	40	80	6
4RAK 050 005 500	5 X R0.5	5	50	100	6
4RAK 050 010 160	5 X R1	5	16	60	6
4RAK 050 010 300	5 X R1	5	30	70	6
4RAK 050 010 400	5 X R1	5	40	80	6
4RAK 050 010 500	5 X R1	5	50	100	6
4RAK 060 001 200	6 X R0.1	7	20	60	6
4RAK 060 001 400	6 X R0.1	7	40	80	6
4RAK 060 001 500	6 X R0.1	7	50	100	6
4RAK 060 002 200	6 X R0.2	7	20	60	6
4RAK 060 002 400	6 X R0.2	7	40	80	6
4RAK 060 002 500	6 X R0.2	7	50	100	6
4RAK 060 003 200	6 X R0.3	7	20	60	6
4RAK 060 003 400	6 X R0.3	7	40	80	6
4RAK 060 003 500	6 X R0.3	7	50	100	6
4RAK 060 005 200	6 X R0.5	7	20	60	6
4RAK 060 005 400	6 X R0.5	7	40	80	6
4RAK 060 005 500	6 X R0.5	7	50	100	6
4RAK 060 010 200	6 X R1	7	20	60	6
4RAK 060 010 400	6 X R1	7	40	80	6
4RAK 060 010 500	6 X R1	7	50	100	6
4RAK 060 015 200	6 X R1.5	7	20	60	6
4RAK 060 015 400	6 X R1.5	7	40	80	6
4RAK 060 015 500	6 X R1.5	7	50	100	6
4RAK 080 002 220	8 X R0.2	9	22	65	8
4RAK 080 003 220	8 X R0.3	9	22	65	8
4RAK 080 005 220	8 X R0.5	9	22	65	8
4RAK 080 005 400	8 X R0.5	9	40	100	8



01~06 08~012

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 080 010 220	8 X R1	9	22	65	8
4RAK 080 010 400	8 X R1	9	40	100	8
4RAK 080 015 220	8 X R1.5	9	22	65	8
4RAK 080 015 400	8 X R1.5	9	40	100	8
4RAK 080 020 220	8 X R2	9	22	65	8
4RAK 100 002 240	10 X R0.2	11	24	70	10
4RAK 100 003 240	10 X R0.3	11	24	70	10
4RAK 100 005 240	10 X R0.5	11	24	70	10
4RAK 100 005 400	10 X R0.5	11	40	100	10
4RAK 100 010 240	10 X R1	11	24	70	10
4RAK 100 010 400	10 X R1	11	40	100	10
4RAK 100 015 240	10 X R1.5	11	24	70	10

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4RAK 100 015 400	10 X R1.5	11	40	100	10
4RAK 100 020 240	10 X R2	11	24	70	10
4RAK 100 025 240	10 X R2.5	11	24	70	10
4RAK 120 003 260	12 X R0.3	13	26	80	12
4RAK 120 005 260	12 X R0.5	13	26	80	12
4RAK 120 005 400	12 X R0.5	13	40	110	12
4RAK 120 010 260	12 X R1	13	26	80	12
4RAK 120 010 400	12 X R1	13	40	110	12
4RAK 120 015 260	12 X R1.5	13	26	80	12
4RAK 120 015 400	12 X R1.5	13	40	110	12
4RAK 120 020 260	12 X R2	13	26	80	12
4RAK 120 030 260	12 X R3	13	26	80	12

4RAK Corner

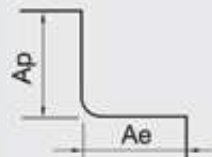
4RAK

• RPM : rev./min • Feed : mm/min

Material		Prehardened Steels / Hardened Steels NAK / SKD				Hardened Steels SKD / SKT				Hardened Steels SKD / SKT			
Hardness		30HRC ~ 45HRC				45HRC ~ 55HRC				55HRC ~ 65HRC			
Outside Diameter	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
1mm	4	11,700	1,100	0.033	0.230	10,200	910	0.026	0.207	7,200	540	0.013	0.207
	10	7,500	430	0.009	0.107	6,500	430	0.008	0.085	4,600	300	0.005	0.043
1.2mm	4	11,200	1,200	0.027	0.383	10,200	930	0.020	0.255	7,800	700	0.017	0.170
	10	7,700	680	0.014	0.153	6,200	510	0.008	0.128	5,400	680	0.005	0.043
1.5mm	6	9,900	1,100	0.035	0.413	9,000	1,000	0.032	0.378	6,900	400	0.021	0.172
	12	7,200	710	0.025	0.275	6,600	660	0.022	0.252	5,000	250	0.009	0.138
2mm	6	11,000	1,100	0.054	0.551	10,200	1,020	0.051	0.620	8,200	590	0.024	0.275
	12	7,800	880	0.039	0.344	7,200	820	0.037	0.344	5,900	360	0.015	0.153
2.5mm	10	9,200	1,200	0.057	0.459	8,500	1,000	0.057	0.459	7,100	430	0.041	0.275
	20	6,600	1,000	0.041	0.230	6,400	570	0.026	0.191	5,400	250	0.019	0.077
3mm	10	9,600	1,800	0.082	0.595	8,900	1,800	0.051	0.595	7,600	620	0.038	0.476
	20	7,100	1,300	0.049	0.493	6,700	1,300	0.031	0.493	5,400	470	0.019	0.271
4mm	13	7,900	1,370	0.091	1.000	6,600	1,330	0.071	1.000	5,600	740	0.043	0.700
	20	6,200	1,200	0.060	0.800	5,200	1,120	0.047	0.800	4,500	630	0.022	0.560
6mm	30	5,500	960	0.037	0.648	4,600	920	0.029	0.648	3,900	600	0.011	0.388
	20	4,900	1,470	0.153	2.004	2,900	850	0.153	1.114	2,550	650	0.060	1.114
8mm	40	2,500	680	0.085	1.148	1,400	400	0.085	0.638	1,200	300	0.034	0.468
	22	4,000	1,600	0.184	2.540	2,400	680	0.184	1.320	2,000	650	0.087	1.320
10mm	24	3,200	1,750	0.210	2.730	1,900	540	0.220	1.430	1,600	460	0.094	1.450
	26	2,500	1,800	0.230	2.700	1,500	430	0.240	1.490	1,300	450	0.110	1.500

Milling amount of side milling

• Ap : Axial Depth
• Ae : Radial Depth



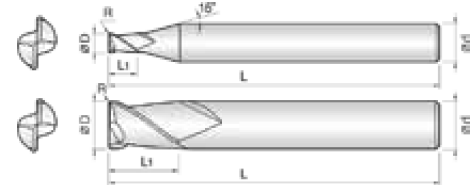


Ø04~Ø6 Ø8~Ø12

2 Flutes Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2SIR, Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
2SIR 004 0005 S04	0.4 X R0.05	0.8	45	4
2SIR 004 001 S04	0.4 X R0.1	0.8	45	4
2SIR 005 0005 S04	0.5 X R0.05	1	45	4
2SIR 005 001 S04	0.5 X R0.1	1	45	4
2SIR 006 0005 S04	0.6 X R0.05	1.2	45	4
2SIR 006 001 S04	0.6 X R0.1	1.2	45	4
2SIR 006 002 S04	0.6 X R0.2	1.2	45	4
2SIR 007 0005 S04	0.7 X R0.05	1.4	45	4
2SIR 007 001 S04	0.7 X R0.1	1.4	45	4
2SIR 007 002 S04	0.7 X R0.2	1.4	45	4
2SIR 008 0005 S04	0.8 X R0.05	1.6	45	4
2SIR 008 001 S04	0.8 X R0.1	1.6	45	4
2SIR 008 002 S04	0.8 X R0.2	1.6	45	4
2SIR 009 0005 S04	0.9 X R0.05	1.8	45	4
2SIR 009 001 S04	0.9 X R0.1	1.8	45	4
2SIR 010 001 S04	1 X R0.1	2.5	45	4
2SIR 010 002 S04	1 X R0.2	2.5	45	4
2SIR 010 003 S04	1 X R0.3	2.5	45	4
2SIR 012 001 S04	1.2 X R0.1	3.2	45	4
2SIR 012 002 S04	1.2 X R0.2	3.2	45	4
2SIR 012 003 S04	1.2 X R0.3	3.2	45	4
2SIR 015 001 S04	1.5 X R0.1	4	45	4
2SIR 015 002 S04	1.5 X R0.2	4	45	4
2SIR 015 003 S04	1.5 X R0.3	4	45	4
2SIR 015 005 S04	1.5 X R0.5	4	45	4
2SIR 020 001 S04	2 X R0.1	6	45	4
2SIR 020 002 S04	2 X R0.2	6	45	4
2SIR 020 003 S04	2 X R0.3	6	45	4
2SIR 020 005 S04	2 X R0.5	6	45	4
2SIR 025 001 S04	2.5 X R0.1	6	50	4
2SIR 025 002 S04	2.5 X R0.2	6	50	4
2SIR 025 003 S04	2.5 X R0.3	6	50	4

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
2SIR 025 005 S04	2.5 X R0.5	6	50	4
2SIR 030 001 S06	3 X R0.1	8	60	6
2SIR 030 002 S06	3 X R0.2	8	60	6
2SIR 030 003 S06	3 X R0.3	8	60	6
2SIR 030 005 S06	3 X R0.5	8	60	6
2SIR 030 010 S06	3 X R1	8	60	6
2SIR 040 001 060	4 X R0.1	9	60	4
2SIR 040 001 080	4 X R0.1	9	80	4
2SIR 040 001 S06	4 X R0.1	10	70	6
2SIR 040 002 060	4 X R0.2	9	60	4
2SIR 040 002 080	4 X R0.2	9	80	4
2SIR 040 002 S06	4 X R0.2	10	70	6
2SIR 040 003 060	4 X R0.3	9	60	4
2SIR 040 003 080	4 X R0.3	9	80	4
2SIR 040 003 S06	4 X R0.3	10	70	6
2SIR 040 005 060	4 X R0.5	9	60	4
2SIR 040 005 080	4 X R0.5	9	80	4
2SIR 040 005 S06	4 X R0.5	10	70	6
2SIR 040 010 060	4 X R1	9	60	4
2SIR 040 010 080	4 X R1	9	80	4
2SIR 040 010 S06	4 X R1	10	70	6
2SIR 050 001 S06	5 X R0.1	13	75	6
2SIR 050 002 S06	5 X R0.2	13	75	6
2SIR 050 003 S06	5 X R0.3	13	75	6
2SIR 050 005 S06	5 X R0.5	13	75	6
2SIR 050 010 S06	5 X R1	13	75	6
2SIR 060 001 060	6 X R0.1	11	60	6
2SIR 060 001 090	6 X R0.1	13	90	6
2SIR 060 002 060	6 X R0.2	11	60	6
2SIR 060 002 090	6 X R0.2	13	90	6
2SIR 060 003 060	6 X R0.3	11	60	6
2SIR 060 003 090	6 X R0.3	13	90	6



004-06 08-012

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
2SIR 060 005 060	6 X R0.5	11	60	6
2SIR 060 005 090	6 X R0.5	13	90	6
2SIR 060 010 060	6 X R1	11	60	6
2SIR 060 010 090	6 X R1	13	90	6
2SIR 060 015 060	6 X R1.5	11	60	6
2SIR 060 015 090	6 X R1.5	13	90	6
2SIR 060 020 060	6 X R2	11	60	6
2SIR 060 020 090	6 X R2	13	90	6
2SIR 060 025 090	6 X R2.5	13	90	6
2SIR 080 001 070	8 X R0.1	16	70	8
2SIR 080 001 100	8 X R0.1	19	100	8
2SIR 080 002 070	8 X R0.2	16	70	8
2SIR 080 002 100	8 X R0.2	19	100	8
2SIR 080 003 070	8 X R0.3	16	70	8
2SIR 080 003 100	8 X R0.3	19	100	8
2SIR 080 005 070	8 X R0.5	16	70	8
2SIR 080 005 100	8 X R0.5	19	100	8
2SIR 080 005 120	8 X R0.5	19	120	8
2SIR 080 010 070	8 X R1	16	70	8
2SIR 080 010 100	8 X R1	19	100	8
2SIR 080 010 120	8 X R1	19	120	8
2SIR 080 015 070	8 X R1.5	16	70	8
2SIR 080 015 100	8 X R1.5	19	100	8
2SIR 080 020 070	8 X R2	16	70	8
2SIR 080 020 100	8 X R2	19	100	8
2SIR 080 025 100	8 X R2.5	19	100	8
2SIR 080 030 100	8 X R3	19	100	8
2SIR 080 035 100	8 X R3.5	19	100	8
2SIR 100 001 075	10 X R0.1	19	75	10
2SIR 100 001 100	10 X R0.1	22	100	10
2SIR 100 002 075	10 X R0.2	19	75	10
2SIR 100 002 100	10 X R0.2	22	100	10
2SIR 100 003 075	10 X R0.3	19	75	10
2SIR 100 003 100	10 X R0.3	22	100	10
2SIR 100 005 075	10 X R0.5	19	75	10
2SIR 100 005 100	10 X R0.5	22	100	10
2SIR 100 005 130	10 X R0.5	22	130	10
2SIR 100 010 075	10 X R1	19	75	10
2SIR 100 010 100	10 X R1	22	100	10
2SIR 100 010 130	10 X R1	22	130	10
2SIR 100 015 075	10 X R1.5	19	75	10
2SIR 100 015 100	10 X R1.5	22	100	10
2SIR 100 015 130	10 X R1.5	22	130	10
2SIR 100 020 075	10 X R2	19	75	10

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
2SIR 100 020 100	10 X R2	22	100	10
2SIR 100 025 100	10 X R2.5	22	100	10
2SIR 100 030 100	10 X R3	22	100	10
2SIR 100 040 100	10 X R4	22	100	10
2SIR 120 001 080	12 X R0.1	22	80	12
2SIR 120 001 110	12 X R0.1	26	110	12
2SIR 120 002 080	12 X R0.2	22	80	12
2SIR 120 002 110	12 X R0.2	26	110	12
2SIR 120 003 080	12 X R0.3	22	80	12
2SIR 120 003 110	12 X R0.3	26	110	12
2SIR 120 005 080	12 X R0.5	22	80	12
2SIR 120 005 110	12 X R0.5	26	110	12
2SIR 120 005 130	12 X R0.5	26	130	12
2SIR 120 010 080	12 X R1	22	80	12
2SIR 120 010 110	12 X R1	26	110	12
2SIR 120 010 130	12 X R1	26	130	12
2SIR 120 015 080	12 X R1.5	22	80	12
2SIR 120 015 110	12 X R1.5	26	110	12
2SIR 120 015 130	12 X R1.5	26	130	12
2SIR 120 020 080	12 X R2	22	80	12
2SIR 120 020 110	12 X R2	26	110	12
2SIR 120 020 130	12 X R2	26	130	12
2SIR 120 025 110	12 X R2.5	26	110	12
2SIR 120 030 110	12 X R3	26	110	12
2SIR 120 040 110	12 X R4	26	110	12
2SIR 120 050 110	12 X R5	26	110	12

2SIR, Corner

2SIR, Corner

Material	Carbon Steels S50 / SCM		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
0.4mm	36,000	230	36,000	180	36,000	140	31,500	110
0.5mm	36,000	180	36,000	180	36,000	140	31,500	110
0.6mm	34,200	340	29,700	240	27,000	200	22,500	110
0.7mm	32,400	380	25,200	270	23,400	220	19,800	110
0.8mm	30,600	430	22,500	310	20,700	230	17,100	110
0.9mm	28,800	490	19,800	330	18,000	250	15,300	110
1mm	27,000	540	18,000	360	16,200	270	13,500	110
1.5mm	18,000	540	12,600	360	10,800	270	9,000	110
2mm	13,500	540	9,000	360	8,200	270	7,200	110
2.5mm	10,800	540	7,400	360	6,600	270	5,500	110
3mm	9,000	540	6,300	360	5,400	270	4,500	110
4mm	6,800	540	4,700	360	4,100	270	3,600	110
5mm	5,400	540	3,800	360	3,200	270	2,900	110
6mm	4,500	540	3,200	360	2,700	270	2,400	110
8mm	3,600	470	2,500	320	2,200	230	1,800	100
10mm	2,900	410	2,000	270	1,700	210	1,400	90
12mm	2,400	370	1,700	240	1,400	190	1,200	90

Depth of Cut			
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■ In case of slotting, decrease feed rate more than 80% the table. 70% of speed and 60% of feed on the table, when to slotting SUS.

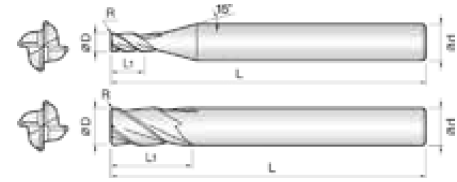


Ø1~Ø6 Ø8~Ø16

4 Flutes Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- High precise edge tolerance.
- Designed for minimizing edge chipping by corner R shape.
- Various corner R and overall length for wide range application.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

4SIR, Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
4SIR 010 0005 S04	1 X R0.05	2.5	45	4
4SIR 010 001 S04	1 X R0.1	2.5	45	4
4SIR 010 002 S04	1 X R0.2	2.5	45	4
4SIR 010 003 S04	1 X R0.3	2.5	45	4
4SIR 015 0005 S04	1.5 X R0.05	4	45	4
4SIR 015 001 S04	1.5 X R0.1	4	45	4
4SIR 015 002 S04	1.5 X R0.2	4	45	4
4SIR 015 003 S04	1.5 X R0.3	4	45	4
4SIR 015 005 S04	1.5 X R0.5	4	45	4
4SIR 020 0005 S04	2 X R0.05	6	45	4
4SIR 020 001 S04	2 X R0.1	6	45	4
4SIR 020 002 S04	2 X R0.2	6	45	4
4SIR 020 003 S04	2 X R0.3	6	45	4
4SIR 020 005 S04	2 X R0.5	6	45	4
4SIR 025 001 S04	2.5 X R0.1	6	50	4
4SIR 025 002 S04	2.5 X R0.2	6	50	4
4SIR 025 003 S04	2.5 X R0.3	6	50	4
4SIR 025 005 S04	2.5 X R0.5	6	50	4
4SIR 030 001 S06	3 X R0.1	8	60	6
4SIR 030 002 S06	3 X R0.2	8	60	6
4SIR 030 003 S06	3 X R0.3	8	60	6
4SIR 030 005 S06	3 X R0.5	8	60	6
4SIR 030 010 S06	3 X R1	8	60	6
4SIR 040 001 060	4 X R0.1	9	60	4
4SIR 040 001 080	4 X R0.1	9	80	4
4SIR 040 001 S06	4 X R0.1	10	70	6
4SIR 040 002 060	4 X R0.2	9	60	4
4SIR 040 002 080	4 X R0.2	9	80	4
4SIR 040 002 S06	4 X R0.2	10	70	6
4SIR 040 003 060	4 X R0.3	9	60	4
4SIR 040 003 080	4 X R0.3	9	80	4
4SIR 040 003 S06	4 X R0.3	10	70	6
4SIR 040 005 060	4 X R0.5	9	60	4
4SIR 040 005 080	4 X R0.5	9	80	4
4SIR 040 005 S06	4 X R0.5	10	70	6
4SIR 040 010 060	4 X R1	9	60	4
4SIR 040 010 080	4 X R1	9	80	4
4SIR 040 010 S06	4 X R1	10	70	6
4SIR 050 001 S06	5 X R0.1	13	75	6

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
4SIR 050 002 S06	5 X R0.2	13	75	6
4SIR 050 003 S06	5 X R0.3	13	75	6
4SIR 050 005 S06	5 X R0.5	13	75	6
4SIR 050 010 S06	5 X R1	13	75	6
4SIR 060 001 060	6 X R0.1	11	60	6
4SIR 060 001 080	6 X R0.1	13	80	6
4SIR 060 002 060	6 X R0.2	11	60	6
4SIR 060 002 080	6 X R0.2	13	80	6
4SIR 060 003 060	6 X R0.3	11	60	6
4SIR 060 003 080	6 X R0.3	13	80	6
4SIR 060 005 060	6 X R0.5	11	60	6
4SIR 060 005 080	6 X R0.5	13	80	6
4SIR 060 010 060	6 X R1	11	60	6
4SIR 060 010 080	6 X R1	13	80	6
4SIR 060 015 060	6 X R1.5	11	60	6
4SIR 060 015 080	6 X R1.5	13	80	6
4SIR 060 020 060	6 X R2	11	60	6
4SIR 060 020 080	6 X R2	13	80	6
4SIR 080 001 070	8 X R0.1	16	70	8
4SIR 080 001 090	8 X R0.1	19	90	8
4SIR 080 002 070	8 X R0.2	16	70	8
4SIR 080 002 090	8 X R0.2	19	90	8
4SIR 080 003 070	8 X R0.3	16	70	8
4SIR 080 003 090	8 X R0.3	19	90	8
4SIR 080 005 070	8 X R0.5	16	70	8
4SIR 080 005 090	8 X R0.5	19	90	8
4SIR 080 005 110	8 X R0.5	19	110	8
4SIR 080 010 070	8 X R1	16	70	8
4SIR 080 010 090	8 X R1	19	90	8
4SIR 080 010 110	8 X R1	19	110	8
4SIR 080 015 070	8 X R1.5	16	70	8
4SIR 080 015 090	8 X R1.5	19	90	8
4SIR 080 015 110	8 X R1.5	19	110	8
4SIR 080 020 070	8 X R2	16	70	8
4SIR 080 020 090	8 X R2	19	90	8
4SIR 080 020 110	8 X R2	19	110	8
4SIR 080 025 090	8 X R2.5	19	90	8
4SIR 100 001 075	10 X R0.1	19	75	10
4SIR 100 001 100	10 X R0.1	22	100	10



01~06 08~016

Unit : mm

4SIR, Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
4SIR 100 002 075	10 X R0.2	19	75	10
4SIR 100 002 100	10 X R0.2	22	100	10
4SIR 100 003 075	10 X R0.3	19	75	10
4SIR 100 003 100	10 X R0.3	22	100	10
4SIR 100 005 075	10 X R0.5	19	75	10
4SIR 100 005 100	10 X R0.5	22	100	10
4SIR 100 005 120	10 X R0.5	22	120	10
4SIR 100 010 075	10 X R1	19	75	10
4SIR 100 010 100	10 X R1	22	100	10
4SIR 100 010 120	10 X R1	22	120	10
4SIR 100 015 075	10 X R1.5	19	75	10
4SIR 100 015 100	10 X R1.5	22	100	10
4SIR 100 015 120	10 X R1.5	22	120	10
4SIR 100 020 075	10 X R2	19	75	10
4SIR 100 020 100	10 X R2	22	100	10
4SIR 100 020 120	10 X R2	22	120	10
4SIR 100 025 075	10 X R2.5	19	75	10
4SIR 100 025 100	10 X R2.5	22	100	10
4SIR 100 025 120	10 X R2.5	22	120	10
4SIR 100 030 100	10 X R3	22	100	10
4SIR 120 002 080	12 X R0.2	22	80	12
4SIR 120 002 110	12 X R0.2	26	110	12
4SIR 120 003 080	12 X R0.3	22	80	12
4SIR 120 003 110	12 X R0.3	26	110	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D× R	L1	L	d
4SIR 120 005 080	12 X R0.5	22	80	12
4SIR 120 005 110	12 X R0.5	26	110	12
4SIR 120 005 130	12 X R0.5	26	130	12
4SIR 120 010 080	12 X R1	22	80	12
4SIR 120 010 110	12 X R1	26	110	12
4SIR 120 010 130	12 X R1	26	130	12
4SIR 120 015 080	12 X R1.5	22	80	12
4SIR 120 015 110	12 X R1.5	26	110	12
4SIR 120 015 130	12 X R1.5	26	130	12
4SIR 120 020 080	12 X R2	22	80	12
4SIR 120 020 110	12 X R2	26	110	12
4SIR 120 020 130	12 X R2	26	130	12
4SIR 120 025 080	12 X R2.5	22	80	12
4SIR 120 025 110	12 X R2.5	26	110	12
4SIR 120 025 130	12 X R2.5	26	130	12
4SIR 120 030 080	12 X R3	22	80	12
4SIR 120 030 110	12 X R3	26	110	12
4SIR 120 030 130	12 X R3	26	130	12
4SIR 120 035 110	12 X R3.5	26	110	12
4SIR 120 040 110	12 X R4	26	110	12
4SIR 160 005 110	16 X R0.5	32	110	16
4SIR 160 005 160	16 X R0.5	32	160	16
4SIR 160 010 110	16 X R1	32	110	16
4SIR 160 010 160	16 X R1	32	160	16

4SIR

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels S50 / SCM		Alloy Steels / Tools Steels Prehardened Steels SKD61/NAK		Stainless Steels SUS304 / SUS316		Hardened Steels SKD61		Hardened Steels SKD11	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC		55 ~ 60HRC	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	5,100	70	4,500	60	3,600	40	3,000	25	2,200	10
2mm	4,200	80	3,600	70	2,900	50	2,200	35	1,800	15
3mm	3,600	90	2,900	80	2,200	60	1,800	40	1,500	25
4mm	2,900	120	2,300	90	1,800	70	1,400	50	1,200	30
5mm	2,500	150	2,000	120	1,500	90	1,300	60	1,000	30
6mm	2,100	170	1,700	150	1,300	110	1,100	70	900	40
8mm	1,600	190	1,300	150	1,000	130	900	70	680	40
10mm	1,400	190	1,100	150	800	110	700	70	550	40
12mm	1,100	150	900	120	700	90	570	60	450	30
16mm	900	120	700	90	500	70	420	43	340	26

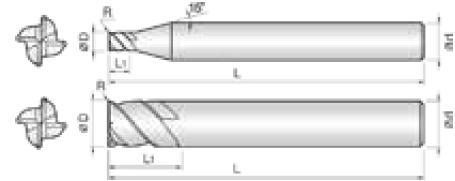
Depth of Cut			
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■ In case of slotting, decrease feed rate more than 50% the table. 60% of speed and 40% of feed on the table , when to slotting SUS.

4 Flutes 45° Helix Corner Radius Long End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- Designed for minimizing edge chipping by corner R shape.
- 45° degree helix design for high speed, feed condition.



Size	D Tolerance
D ≤ 6	+0 ~ -0.01mm
D > 6	+0 ~ -0.015mm

Unit : mm

S-4SIR,
Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D × R	L1	L	d
S-4SIR 030 002 S06	3 X R0.2	6	70	6
S-4SIR 030 005 S06	3 X R0.5	6	70	6
S-4SIR 030 010 S06	3 X R1	6	70	6
S-4SIR 040 002 S06	4 X R0.2	8	70	6
S-4SIR 040 005 S06	4 X R0.5	8	70	6
S-4SIR 040 010 S06	4 X R1	8	70	6
S-4SIR 060 005 S06	6 X R0.5	12	90	6
S-4SIR 060 010 S06	6 X R1	12	90	6
S-4SIR 080 002 S08	8 X R0.2	16	90	8
S-4SIR 080 005 S08	8 X R0.5	16	90	8
S-4SIR 080 010 S08	8 X R1	16	90	8
S-4SIR 100 003 S10	10 X R0.3	20	100	10
S-4SIR 100 005 S10	10 X R0.5	20	100	10
S-4SIR 100 010 S10	10 X R1	20	100	10
S-4SIR 120 003 S12	12 X R0.3	24	110	12
S-4SIR 120 005 S12	12 X R0.5	24	110	12
S-4SIR 120 010 S12	12 X R1	24	110	12

Side Milling

Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3mm	9,400	700	6,300	430	6,300	400	4,000	210	3,400	150
4mm	6,800	770	7,800	460	4,800	440	3,000	230	2,700	200
6mm	5,400	850	3,800	510	3,800	500	2,500	250	2,200	200
8mm	3,700	930	2,400	560	2,400	510	1,500	280	1,400	190
10mm	3,000	850	2,000	540	2,000	480	1,200	270	1,100	170
12mm	2,500	850	1,600	540	1,600	450	1,000	270	930	150
Depth of Cut										

Slotting

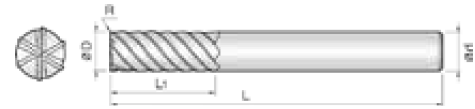
Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
3mm	7,700	510	4,500	250	4,500	130	2,700	110	1,600	60
4mm	6,100	610	3,400	300	3,400	150	2,000	120	1,200	80
6mm	4,300	680	2,300	340	2,300	170	1,400	140	800	80
8mm	3,100	680	1,700	340	1,700	170	1,000	150	610	80
10mm	2,600	610	1,400	300	1,400	150	810	140	490	70
12mm	2,100	610	1,100	300	1,100	150	680	140	410	60
Depth of Cut										



6 Flutes 45°Helix Corner Radius Long End Mills

Endmills for pre-hardened and hardened steel (HRC50~)

- 45°degree helix design for high speed, feed condition.
- Improved wear resistance with longer edge and excellent work surface finish in various machining applications.



Size	D Tolerance
D ≥ $\phi 6$	+0 ~ -0.02mm

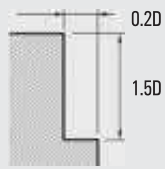
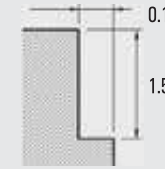
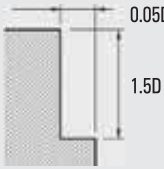
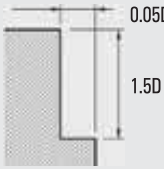
Unit : mm

S-6SIR, Corner

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D × R	L1	L	d
S-6SIR 060 003 060	6 X R0.3	15	60	6
S-6SIR 060 003 080	6 X R0.3	15	80	6
S-6SIR 060 005 060	6 X R0.5	15	60	6
S-6SIR 060 005 080	6 X R0.5	15	80	6
S-6SIR 060 010 060	6 X R1	15	60	6
S-6SIR 060 010 080	6 X R1	15	80	6
S-6SIR 080 003 070	8 X R0.3	20	70	8
S-6SIR 080 003 090	8 X R0.3	20	90	8
S-6SIR 080 005 070	8 X R0.5	20	70	8
S-6SIR 080 005 090	8 X R0.5	20	90	8
S-6SIR 080 010 070	8 X R1	20	70	8
S-6SIR 080 010 090	8 X R1	20	90	8
S-6SIR 100 003 075	10 X R0.3	25	75	10
S-6SIR 100 003 100	10 X R0.3	25	100	10
S-6SIR 100 005 075	10 X R0.5	25	75	10
S-6SIR 100 005 100	10 X R0.5	25	100	10
S-6SIR 100 010 075	10 X R1	25	75	10
S-6SIR 100 010 100	10 X R1	25	100	10
S-6SIR 120 003 080	12 X R0.3	30	80	12
S-6SIR 120 003 110	12 X R0.3	30	110	12
S-6SIR 120 005 080	12 X R0.5	30	80	12
S-6SIR 120 005 110	12 X R0.5	30	110	12
S-6SIR 120 010 080	12 X R1	30	80	12
S-6SIR 120 010 110	12 X R1	30	110	12
S-6SIR 160 005 110	16 X R0.5	50	110	16
S-6SIR 160 010 110	16 X R1	50	110	16




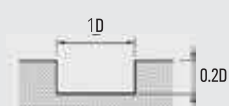
Side Milling

Material	Carbon Steels / Alloy Steels / SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	4,700	880	3,000	510	3,000	480	1,900	265	1,700	185
8mm	3,500	880	2,200	530	2,200	480	1,400	265	1,300	180
10mm	2,800	800	1,800	450	1,100	260	1,100	260	1,000	160
12mm	2,300	800	1,500	510	1,500	420	1,000	260	900	140
16mm	1,800	640	1,100	400	1,100	360	700	200	650	100

Material	Carbon Steels / Alloy Steels / SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Depth of Cut										

Slotting

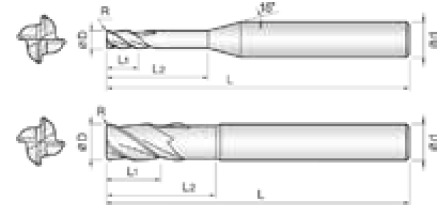
Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
6mm	4,000	640	2,200	320	2,200	160	1,300	130	800	75
8mm	3,000	640	1,600	320	1,600	160	1,000	140	600	70
10mm	2,400	580	1,300	290	1,300	140	800	130	500	65
12mm	2,000	580	1,000	290	1,000	140	650	130	400	60
16mm	1,600	480	800	220	800	120	500	100	300	40

Material	Carbon Steels / Alloy Steels SS400 / S50C / SCM / FC250		Alloy Steels / Tools Steels / Prehardened Steels SKD61 / NAK		Stainless Steels/ Titanium Alloy Steels SUS304 / SUS316 / Ti-6AL-4V		Hardened Steels SKD61		Superhit resistance / Inconel	
	~ 30HRC		30 ~ 45HRC				45 ~ 55HRC			
Depth of Cut										

4 Flutes High Speed Corner Radius Cutter

Cutter for pre-hardened and hardened steel (HRC50~)

- Designed for low speed with high feed condition
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4SIU 010 002 025	1XR0.2	1	2.5	50	4
4SIU 015 005 040	1.5XR0.5	1.5	4	50	4
4SIU 020 005 060	2XR0.5	2	6	50	6
4SIU 030 005 080	3XR0.5	3	8	50	6
4SIU 040 005 120	4XR0.5	4	12	60	6
4SIU 040 005 160	4XR0.5	4	16	60	6
4SIU 040 010 120	4XR1	4	12	60	6
4SIU 040 010 160	4XR1	4	16	60	6
4SIU 050 005 150	5XR0.5	5	15	60	6
4SIU 050 010 150	5XR1	5	15	60	6
4SIU 060 003 150	6XR0.3	6	15	60	6
4SIU 060 005 150	6XR0.5	6	15	60	6
4SIU 060 010 150	6XR1	6	15	60	6
4SIU 060 015 150	6XR1.5	6	15	60	6
4SIU 080 003 160	8XR0.3	8	16	60	8
4SIU 080 005 160	8XR0.5	8	16	60	8
4SIU 080 005 200	8XR0.5	8	20	80	8
4SIU 080 005 300	8XR0.5	8	30	110	8
4SIU 080 010 160	8XR1	8	16	60	8
4SIU 080 010 200	8XR1	8	20	80	8
4SIU 080 010 300	8XR1	8	30	110	8
4SIU 080 020 160	8XR2	8	16	60	8
4SIU 080 020 200	8XR2	8	20	80	8
4SIU 080 020 300	8XR2	8	30	110	8
4SIU 100 003 200	10XR0.3	10	20	70	10

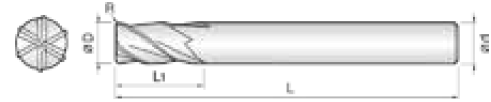
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
4SIU 100 005 200	10XR0.5	10	20	70	10
4SIU 100 005 250	10XR0.5	10	25	90	10
4SIU 100 005 300	10XR0.5	10	30	120	10
4SIU 100 010 200	10XR1	10	20	70	10
4SIU 100 010 250	10XR1	10	25	90	10
4SIU 100 010 300	10XR1	10	30	120	10
4SIU 100 020 200	10XR2	10	20	70	10
4SIU 100 020 250	10XR2	10	25	90	10
4SIU 100 020 300	10XR2	10	30	120	10
4SIU 120 005 250	12XR0.5	12	25	80	12
4SIU 120 005 300	12XR0.5	12	30	100	12
4SIU 120 005 350	12XR0.5	12	35	130	12
4SIU 120 010 250	12XR1	12	25	80	12
4SIU 120 010 300	12XR1	12	30	100	12
4SIU 120 010 350	12XR1	12	35	130	12
4SIU 120 020 250	12XR2	12	25	80	12
4SIU 120 020 300	12XR2	12	30	100	12
4SIU 120 020 350	12XR2	12	35	130	12
4SIU 120 030 250	12XR3	12	25	80	12
4SIU 160 010 300	16XR1	16	30	110	16
4SIU 160 010 400	16XR1	16	40	160	16
4SIU 160 020 300	16XR2	16	30	110	16
4SIU 160 020 400	16XR2	16	40	160	16

4SIU, Corner



6 Flutes High Speed Corner Radius Cutter Cutter for pre-hardened and hardened steel (HRC50~)

- Designed for low speed with high feed condition.
- Suitable for heavy duty and roughing application.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2SIR, Corner

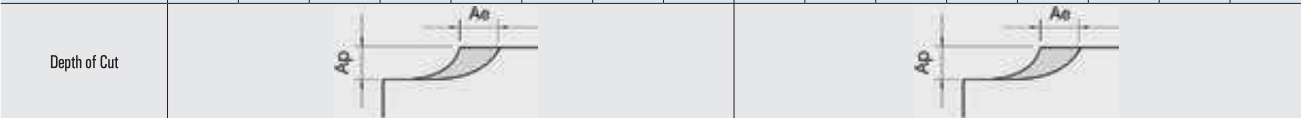
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D × R	L1	L	d
6SIU 060 005 060	6 X R0.5	12	60	6
6SIU 060 005 080	6 X R0.5	12	80	6
6SIU 060 010 060	6 X R1	12	60	6
6SIU 060 010 080	6 X R1	12	80	6
6SIU 080 005 060	8 X R0.5	16	60	8
6SIU 080 005 090	8 X R0.5	16	90	8
6SIU 080 010 060	8 X R1	16	60	8
6SIU 080 010 090	8 X R1	16	90	8
6SIU 080 020 060	8 X R2	16	60	8
6SIU 080 020 090	8 X R2	16	90	8
6SIU 100 005 070	10 X R0.5	20	70	10
6SIU 100 005 100	10 X R0.5	20	100	10
6SIU 100 010 070	10 X R1	20	70	10
6SIU 100 010 100	10 X R1	20	100	10
6SIU 100 020 070	10 X R2	20	70	10
6SIU 100 020 100	10 X R2	20	100	10
6SIU 120 005 080	12 X R0.5	25	80	12
6SIU 120 005 110	12 X R0.5	25	110	12
6SIU 120 010 080	12 X R1	25	80	12

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D × R	L1	L	d
6SIU 120 010 110	12 X R1	25	110	12
6SIU 120 020 080	12 X R2	25	80	12
6SIU 120 020 110	12 X R2	25	110	12
6SIU 160 005 160	16 X R0.5	35	160	16
6SIU 160 005 200	16 X R0.5	35	200	16
6SIU 160 010 160	16 X R1	35	160	16
6SIU 160 010 200	16 X R1	35	200	16
6SIU 160 015 160	16 X R1.5	35	160	16
6SIU 160 015 200	16 X R1.5	35	200	16
6SIU 160 020 160	16 X R2	35	160	16
6SIU 160 020 200	16 X R2	35	200	16
6SIU 200 005 150	20 X R0.5	40	150	20
6SIU 200 005 200	20 X R0.5	40	200	20
6SIU 200 010 150	20 X R1	40	150	20
6SIU 200 010 200	20 X R1	40	200	20
6SIU 200 015 150	20 X R1.5	40	150	20
6SIU 200 015 200	20 X R1.5	40	200	20
6SIU 200 020 150	20 X R2	40	150	20
6SIU 200 020 200	20 X R2	40	200	20

4SIU / 6SIU

• RPM : rev./min • Feed : mm/min

Material	Carbon Steels / Alloy Steels S50C / SCM				Alloy Steels / Tools Steels / Prehardened Steels SKD61 / SKD11 / NAK				Hardened Steels SKD61 / STAVAX				Hardened Steels SKD11 / SKH			
	~ 30HRC				30 ~ 45HRC				45 ~ 55HRC				55 ~ 60HRC			
Outside Diameter	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)	RPM	FEED	Ae(mm)	Ap(mm)
1mm	37,000	9,000	0.400	0.040	33,000	7,200	0.400	0.025	27,000	6,500	0.400	0.020	22,000	2,600	0.400	0.015
2mm	33,000	10,000	0.800	0.080	27,000	8,400	0.800	0.050	24,000	7,500	0.800	0.040	16,000	3,000	0.800	0.030
3mm	22,000	11,000	1.200	0.120	18,000	9,000	1.200	0.080	16,000	8,500	1.200	0.060	11,000	3,300	1.200	0.050
4mm	17,000	12,000	1.500	0.150	14,000	9,500	1.500	0.120	12,000	8,800	1.500	0.080	8,000	3,500	1.500	0.070
5mm	13,000	13,000	2.000	0.200	11,000	10,000	2.000	0.150	9,600	9,500	2.000	0.100	6,400	3,800	2.000	0.080
6mm	11,000	13,000	2.500	0.250	9,000	11,000	2.000	0.150	8,000	9,600	2.500	0.100	5,300	3,800	2.500	0.100
8mm	8,200	13,000	3.000	0.300	7,000	11,000	3.000	0.200	6,000	9,600	3.000	0.150	4,000	3,800	3.000	0.130
10mm	6,500	13,000	4.500	0.300	5,500	11,000	4.500	0.200	4,800	9,500	4.500	0.150	3,200	3,800	4.500	0.130
12mm	5,500	12,000	5.500	0.300	5,000	10,000	5.500	0.200	4,100	9,000	4.500	0.250	2,700	3,500	4.500	0.200
16mm	4,100	10,000	7.500	0.450	3,400	8,800	7.500	0.300	3,000	7,800	7.500	0.250	2,000	3,200	7.500	0.200



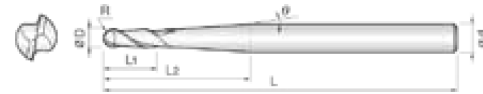


0.1R-3R 4R-6R

2 Flutes High Speed Taper Neck Ball End Mills

Endmills for pre-hardened and hardened steel(HRC50~62)

- Minimize chattering and fracturing by taper designed flute.
- High precise edge tolerance.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2SIE, Corner

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE002003015	0.1R X 0.2	0°30	0.2	1.5	40	4
2SIE002003020	0.1R X 0.2	0°30	0.2	2	40	4
2SIE002010015	0.1R X 0.2	1°	0.2	1.5	40	4
2SIE002010020	0.1R X 0.2	1°	0.2	2	40	4
2SIE002010025	0.1R X 0.2	1°	0.2	2.5	40	4
2SIE002013015	0.1R X 0.2	1°30	0.2	1.5	40	4
2SIE002013020	0.1R X 0.2	1°30	0.2	2	40	4
2SIE002013025	0.1R X 0.2	1°30	0.2	2.5	40	4
2SIE002020015	0.1R X 0.2	2°	0.2	1.5	40	4
2SIE002020020	0.1R X 0.2	2°	0.2	2	40	4
2SIE002020025	0.1R X 0.2	2°	0.2	2.5	40	4
2SIE002030015	0.1R X 0.2	3°	0.2	1.5	40	4
2SIE002030020	0.1R X 0.2	3°	0.2	2	40	4
2SIE002030025	0.1R X 0.2	3°	0.2	2.5	40	4
2SIE002050020	0.1R X 0.2	5°	0.2	2	40	4
2SIE003003030	0.15R X 0.3	0°30	0.3	3	40	4
2SIE003010020	0.15R X 0.3	1°	0.3	2	40	4
2SIE003010030	0.15R X 0.3	1°	0.3	3	40	4
2SIE003010040	0.15R X 0.3	1°	0.3	4	40	4
2SIE003010050	0.15R X 0.3	1°	0.3	5	40	4
2SIE003013020	0.15R X 0.3	1°30	0.3	2	40	4
2SIE003013030	0.15R X 0.3	1°30	0.3	3	40	4
2SIE003013040	0.15R X 0.3	1°30	0.3	4	40	4
2SIE003013050	0.15R X 0.3	1°30	0.3	5	40	4
2SIE003020020	0.15R X 0.3	2°	0.3	2	40	4
2SIE003020030	0.15R X 0.3	2°	0.3	3	40	4
2SIE003020040	0.15R X 0.3	2°	0.3	4	40	4
2SIE003020050	0.15R X 0.3	2°	0.3	5	40	4
2SIE003030020	0.15R X 0.3	3°	0.3	2	40	4
2SIE003030030	0.15R X 0.3	3°	0.3	3	40	4
2SIE003030040	0.15R X 0.3	3°	0.3	4	40	4
2SIE003030050	0.15R X 0.3	3°	0.3	5	40	4
2SIE003050050	0.15R X 0.3	5°	0.3	5	40	4
2SIE004003020	0.2R X 0.4	0°30	0.4	2	40	4
2SIE004003030	0.2R X 0.4	0°30	0.4	3	40	4
2SIE004003040	0.2R X 0.4	0°30	0.4	4	40	4
2SIE004003050	0.2R X 0.4	0°30	0.4	5	40	4
2SIE004003060	0.2R X 0.4	0°30	0.4	6	40	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE004010020	0.2R X 0.4	1°	0.4	2	40	4
2SIE004010030	0.2R X 0.4	1°	0.4	3	40	4
2SIE004010040	0.2R X 0.4	1°	0.4	4	40	4
2SIE004010050	0.2R X 0.4	1°	0.4	5	40	4
2SIE004010060	0.2R X 0.4	1°	0.4	6	40	4
2SIE004013020	0.2R X 0.4	1°30	0.4	2	40	4
2SIE004013030	0.2R X 0.4	1°30	0.4	3	40	4
2SIE004013040	0.2R X 0.4	1°30	0.4	4	40	4
2SIE004013050	0.2R X 0.4	1°30	0.4	5	40	4
2SIE004013060	0.2R X 0.4	1°30	0.4	6	40	4
2SIE004020020	0.2R X 0.4	2°	0.4	2	40	4
2SIE004020030	0.2R X 0.4	2°	0.4	3	40	4
2SIE004020040	0.2R X 0.4	2°	0.4	4	40	4
2SIE004020050	0.2R X 0.4	2°	0.4	5	40	4
2SIE004020060	0.2R X 0.4	2°	0.4	6	40	4
2SIE005003040	0.25R X 0.5	0°30	0.5	4	45	4
2SIE005003060	0.25R X 0.5	0°30	0.5	6	45	4
2SIE005010040	0.25R X 0.5	1°	0.5	4	45	4
2SIE005010060	0.25R X 0.5	1°	0.5	6	45	4
2SIE005010080	0.25R X 0.5	1°	0.5	8	45	4
2SIE005010100	0.25R X 0.5	1°	0.5	10	45	4
2SIE005013040	0.25R X 0.5	1°30	0.5	4	45	4
2SIE005013060	0.25R X 0.5	1°30	0.5	6	45	4
2SIE005013080	0.25R X 0.5	1°30	0.5	8	45	4
2SIE005013100	0.25R X 0.5	1°30	0.5	10	45	4
2SIE005020040	0.25R X 0.5	2°	0.5	4	45	4
2SIE005020060	0.25R X 0.5	2°	0.5	6	45	4
2SIE005020080	0.25R X 0.5	2°	0.5	8	45	4
2SIE005020100	0.25R X 0.5	2°	0.5	10	45	4
2SIE005030080	0.25R X 0.5	3°	0.5	8	45	4
2SIE005030120	0.25R X 0.5	3°	0.5	12	50	4
2SIE006003040	0.3R X 0.6	0°30	0.6	4	45	4
2SIE006003060	0.3R X 0.6	0°30	0.6	6	45	4
2SIE006003080	0.3R X 0.6	0°30	0.6	8	45	4
2SIE006010040	0.3R X 0.6	1°	0.6	4	45	4
2SIE006010060	0.3R X 0.6	1°	0.6	6	45	4
2SIE006010080	0.3R X 0.6	1°	0.6	8	45	4
2SIE006010100	0.3R X 0.6	1°	0.6	10	45	4



0.1R~3R 4R~6R

Unit : mm

2SIE, Corner

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE 006 010 120	0.3R X 0.6	1°	0.6	12	50	4
2SIE 006 010 150	0.3R X 0.6	1°	0.6	15	50	4
2SIE 006 013 040	0.3R X 0.6	1°30'	0.6	4	45	4
2SIE 006 013 060	0.3R X 0.6	1°30'	0.6	6	45	4
2SIE 006 013 080	0.3R X 0.6	1°30'	0.6	8	45	4
2SIE 006 013 100	0.3R X 0.6	1°30'	0.6	10	45	4
2SIE 006 013 120	0.3R X 0.6	1°30'	0.6	12	50	4
2SIE 006 020 060	0.3R X 0.6	2°	0.6	6	45	4
2SIE 006 020 080	0.3R X 0.6	2°	0.6	8	45	4
2SIE 006 020 100	0.3R X 0.6	2°	0.6	10	45	4
2SIE 006 030 130	0.3R X 0.6	3°	0.6	13	50	4
2SIE 008 003 040	0.4R X 0.8	0°30'	0.8	4	45	4
2SIE 008 003 060	0.4R X 0.8	0°30'	0.8	6	45	4
2SIE 008 003 080	0.4R X 0.8	0°30'	0.8	8	45	4
2SIE 008 003 100	0.4R X 0.8	0°30'	0.8	10	45	4
2SIE 008 003 120	0.4R X 0.8	0°30'	0.8	12	50	4
2SIE 008 010 040	0.4R X 0.8	1°	0.8	4	45	4
2SIE 008 010 060	0.4R X 0.8	1°	0.8	6	45	4
2SIE 008 010 080	0.4R X 0.8	1°	0.8	8	45	4
2SIE 008 010 100	0.4R X 0.8	1°	0.8	10	45	4
2SIE 008 010 120	0.4R X 0.8	1°	0.8	12	50	4
2SIE 008 010 160	0.4R X 0.8	1°	0.8	16	50	4
2SIE 008 013 040	0.4R X 0.8	1°30'	0.8	4	45	4
2SIE 008 013 060	0.4R X 0.8	1°30'	0.8	6	45	4
2SIE 008 013 080	0.4R X 0.8	1°30'	0.8	8	45	4
2SIE 008 013 100	0.4R X 0.8	1°30'	0.8	10	45	4
2SIE 008 013 120	0.4R X 0.8	1°30'	0.8	12	50	4
2SIE 008 013 160	0.4R X 0.8	1°30'	0.8	16	50	4
2SIE 008 020 080	0.4R X 0.8	2°	0.8	8	50	4
2SIE 008 020 100	0.4R X 0.8	2°	0.8	10	50	4
2SIE 008 020 120	0.4R X 0.8	2°	0.8	12	50	4
2SIE 008 020 160	0.4R X 0.8	2°	0.8	16	50	4
2SIE 008 030 080	0.4R X 0.8	3°	0.8	8	50	4
2SIE 008 030 120	0.4R X 0.8	3°	0.8	12	50	4
2SIE 008 030 160	0.4R X 0.8	3°	0.8	16	50	4
2SIE 010 003 060	0.5R X 1	0°30'	1	6	50	4
2SIE 010 003 080	0.5R X 1	0°30'	1	8	50	4
2SIE 010 003 100	0.5R X 1	0°30'	1	10	50	4
2SIE 010 003 150	0.5R X 1	0°30'	1	15	50	4
2SIE 010 003 200	0.5R X 1	0°30'	1	20	60	4
2SIE 010 003 250	0.5R X 1	0°30'	1	25	60	4
2SIE 010 003 300	0.5R X 1	0°30'	1	30	70	4
2SIE 010 010 060	0.5R X 1	1°	1	6	50	4
2SIE 010 010 080	0.5R X 1	1°	1	8	50	4
2SIE 010 010 100	0.5R X 1	1°	1	10	50	4
2SIE 010 010 150	0.5R X 1	1°	1	15	50	4
2SIE 010 010 200	0.5R X 1	1°	1	20	50	4
2SIE 010 010 250	0.5R X 1	1°	1	25	60	4

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE 010 010 300	0.5R X 1	1°	1	30	70	4
2SIE 010 010 350	0.5R X 1	1°	1	35	75	4
2SIE 010 013 060	0.5R X 1	1°30'	1	6	50	4
2SIE 010 013 080	0.5R X 1	1°30'	1	8	50	4
2SIE 010 013 100	0.5R X 1	1°30'	1	10	50	4
2SIE 010 013 150	0.5R X 1	1°30'	1	15	50	4
2SIE 010 013 200	0.5R X 1	1°30'	1	20	50	4
2SIE 010 013 250	0.5R X 1	1°30'	1	25	60	4
2SIE 010 013 300	0.5R X 1	1°30'	1	30	70	4
2SIE 010 020 150	0.5R X 1	2°	1	15	50	4
2SIE 010 020 200	0.5R X 1	2°	1	20	50	4
2SIE 010 020 250	0.5R X 1	2°	1	25	60	4
2SIE 010 020 300	0.5R X 1	2°	1	30	70	4
2SIE 010 030 200	0.5R X 1	3°	1	20	50	4
2SIE 010 030 300	0.5R X 1	3°	1	30	70	6
2SIE 010 030 400	0.5R X 1	3°	1	40	80	6
2SIE 010 050 230	0.5R X 1	5°	1	23	60	6
2SIE 012 003 080	0.6R X 1.2	0°30'	1.2	8	50	4
2SIE 012 003 120	0.6R X 1.2	0°30'	1.2	12	50	4
2SIE 012 003 180	0.6R X 1.2	0°30'	1.2	18	50	4
2SIE 012 003 240	0.6R X 1.2	0°30'	1.2	24	60	4
2SIE 012 010 080	0.6R X 1.2	1°	1.2	8	50	4
2SIE 012 010 120	0.6R X 1.2	1°	1.2	12	50	4
2SIE 012 010 180	0.6R X 1.2	1°	1.2	18	50	4
2SIE 012 010 240	0.6R X 1.2	1°	1.2	24	60	4
2SIE 012 013 080	0.6R X 1.2	1°30'	1.2	8	50	4
2SIE 012 013 120	0.6R X 1.2	1°30'	1.2	12	50	4
2SIE 012 013 180	0.6R X 1.2	1°30'	1.2	18	50	4
2SIE 012 013 240	0.6R X 1.2	1°30'	1.2	24	60	4
2SIE 012 020 080	0.6R X 1.2	2°	1.2	8	50	4
2SIE 012 020 120	0.6R X 1.2	2°	1.2	12	50	4
2SIE 012 020 180	0.6R X 1.2	2°	1.2	18	50	4
2SIE 012 020 240	0.6R X 1.2	2°	1.2	24	60	4
2SIE 015 003 080	0.75R X 1.5	0°30'	1.5	8	50	4
2SIE 015 003 100	0.75R X 1.5	0°30'	1.5	10	50	4
2SIE 015 003 120	0.75R X 1.5	0°30'	1.5	12	50	4
2SIE 015 003 150	0.75R X 1.5	0°30'	1.5	15	50	4
2SIE 015 003 200	0.75R X 1.5	0°30'	1.5	20	60	4
2SIE 015 003 300	0.75R X 1.5	0°30'	1.5	30	70	4
2SIE 015 010 080	0.75R X 1.5	1°	1.5	8	50	4
2SIE 015 010 100	0.75R X 1.5	1°	1.5	10	50	4
2SIE 015 010 120	0.75R X 1.5	1°	1.5	12	50	4
2SIE 015 010 150	0.75R X 1.5	1°	1.5	15	50	4
2SIE 015 010 200	0.75R X 1.5	1°	1.5	20	60	4
2SIE 015 010 250	0.75R X 1.5	1°	1.5	25	60	4
2SIE 015 010 300	0.75R X 1.5	1°	1.5	30	70	4
2SIE 015 013 080	0.75R X 1.5	1°30'	1.5	8	50	4
2SIE 015 013 100	0.75R X 1.5	1°30'	1.5	10	50	4



0.1R~3R 4R~6R

Unit : mm

2SIE, Corner

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE 015 013 120	0.75R X 1.5	1°30	1.5	12	50	4
2SIE 015 013 150	0.75R X 1.5	1°30	1.5	15	50	4
2SIE 015 013 200	0.75R X 1.5	1°30	1.5	20	60	4
2SIE 015 013 250	0.75R X 1.5	1°30	1.5	25	60	4
2SIE 015 013 300	0.75R X 1.5	1°30	1.5	30	70	4
2SIE 015 020 100	0.75R X 1.5	2°	1.5	10	50	4
2SIE 015 020 150	0.75R X 1.5	2°	1.5	15	50	4
2SIE 015 020 200	0.75R X 1.5	2°	1.5	20	60	4
2SIE 015 020 300	0.75R X 1.5	2°	1.5	30	70	4
2SIE 015 030 420	0.75R X 1.5	3°	1.5	42	80	6
2SIE 015 050 250	0.75R X 1.5	5°	1.5	25	70	6
2SIE 020 003 080	1R X 2	0°30	2	8	50	4
2SIE 020 003 120	1R X 2	0°30	2	12	50	4
2SIE 020 003 160	1R X 2	0°30	2	16	50	4
2SIE 020 003 200	1R X 2	0°30	2	20	60	4
2SIE 020 003 300	1R X 2	0°30	2	30	70	4
2SIE 020 003 400	1R X 2	0°30	2	40	80	4
2SIE 020 010 080	1R X 2	1°	2	8	50	4
2SIE 020 010 120	1R X 2	1°	2	12	50	4
2SIE 020 010 160	1R X 2	1°	2	16	50	4
2SIE 020 010 200	1R X 2	1°	2	20	60	4
2SIE 020 010 250	1R X 2	1°	2	25	60	4
2SIE 020 010 300	1R X 2	1°	2	30	70	4
2SIE 020 010 350	1R X 2	1°	2	35	75	4
2SIE 020 010 400	1R X 2	1°	2	40	80	4
2SIE 020 010 500	1R X 2	1°	2	50	90	4
2SIE 020 013 080	1R X 2	1°30	2	8	50	4
2SIE 020 013 120	1R X 2	1°30	2	12	50	4
2SIE 020 013 160	1R X 2	1°30	2	16	50	4
2SIE 020 013 200	1R X 2	1°30	2	20	60	4
2SIE 020 013 250	1R X 2	1°30	2	25	60	4
2SIE 020 013 300	1R X 2	1°30	2	30	70	4
2SIE 020 013 350	1R X 2	1°30	2	35	75	6
2SIE 020 013 400	1R X 2	1°30	2	40	80	6
2SIE 020 013 500	1R X 2	1°30	2	50	90	6
2SIE 020 020 300	1R X 2	2°	2	30	70	6
2SIE 020 020 400	1R X 2	2°	2	40	80	6
2SIE 020 020 500	1R X 2	2°	2	50	90	6
2SIE 020 030 300	1R X 2	3°	2	30	70	6
2SIE 020 030 400	1R X 2	3°	2	40	80	6
2SIE 020 050 250	1R X 2	5°	2	25	60	6
2SIE 020 050 380	1R X 2	5°	2	38	80	8
2SIE 030 003 160	1.5R X 3	0°30	3	16	60	6
2SIE 030 003 200	1.5R X 3	0°30	3	20	65	6
2SIE 030 003 300	1.5R X 3	0°30	3	30	70	6
2SIE 030 003 400	1.5R X 3	0°30	3	40	80	6
2SIE 030 003 500	1.5R X 3	0°30	3	50	90	6
2SIE 030 010 160	1.5R X 3	1°	3	16	60	6

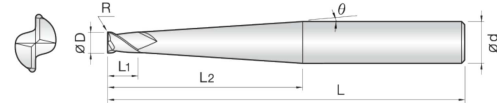
Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	RXD	θ	L1	L2	L	d
2SIE 030 010 200	1.5R X 3	1°	3	20	65	6
2SIE 030 010 300	1.5R X 3	1°	3	30	70	6
2SIE 030 010 400	1.5R X 3	1°	3	40	80	6
2SIE 030 010 500	1.5R X 3	1°	3	50	90	6
2SIE 030 013 160	1.5R X 3	1°30	3	16	60	6
2SIE 030 013 200	1.5R X 3	1°30	3	20	65	6
2SIE 030 013 300	1.5R X 3	1°30	3	30	70	6
2SIE 030 013 400	1.5R X 3	1°30	3	40	80	6
2SIE 030 013 500	1.5R X 3	1°30	3	50	90	6
2SIE 030 020 160	1.5R X 3	2°	3	16	60	6
2SIE 030 020 200	1.5R X 3	2°	3	20	65	6
2SIE 030 020 300	1.5R X 3	2°	3	30	70	6
2SIE 030 020 480	1.5R X 3	2°	3	48	90	6
2SIE 030 030 300	1.5R X 3	3°	3	30	70	6
2SIE 030 030 500	1.5R X 3	3°	3	50	90	8
2SIE 030 050 330	1.5R X 3	5°	3	33	90	8
2SIE 040 003 600	2R X 4	0°30	4	60	100	6
2SIE 040 010 500	2R X 4	1°	4	50	90	6
2SIE 040 010 600	2R X 4	1°	4	60	100	6
2SIE 040 013 450	2R X 4	1°30	4	45	90	6
2SIE 040 013 600	2R X 4	1°30	4	60	110	8
2SIE 040 030 250	2R X 4	3°	4	25	70	6
2SIE 040 050 290	2R X 4	5°	4	29	90	8
2SIE 050 013 400	2.5R X 5	1°30	5	40	90	8
2SIE 050 013 600	2.5R X 5	1°30	5	60	110	8
2SIE 050 030 400	2.5R X 5	3°	5	40	90	8
2SIE 060 013 490	3R X 6	1°30	9	49	110	8
2SIE 060 020 600	3R X 6	2°	9	60	110	10
2SIE 060 030 290	3R X 6	3°	9	29	90	8
2SIE 060 050 320	3R X 6	5°	9	32	110	10
2SIE 080 013 520	4R X 8	1°30	12	52	110	10
2SIE 080 030 330	4R X 8	3°	12	33	100	10
2SIE 100 013 540	5R X 10	1°30	18	54	130	12
2SIE 100 030 370	5R X 10	3°	18	37	110	12
2SIE 120 013 850	6R X 12	1°30	22	85	160	16
2SIE 120 030 630	6R X 12	3°	22	63	130	16

Material		Copper / Carbon Steels Cu / S45C / S50C			Prehardened Steels / Hardened Steels NAK / SKD			Hardened Steels SKD / SKT			Hardened Steels SKD / SKT		
Hardness		30HRC ~ 45HRC			30HRC ~ 45HRC			45HRC ~ 55HRC			55HRC ~ 65HRC		
Radius	Effective Length	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth	RPM	FEED	Ap Axial Depth
R0.1	1.5	40,000	600	0.007	27,000	410	0.005	26,000	310	0.005	26,000	240	0.004
	2	31,000	350	0.005	21,500	240	0.004	20,000	190	0.003	20,000	170	0.003
R0.15	2	33,000	610	0.008	22,200	380	0.006	20,500	320	0.005	20,500	280	0.004
	3	31,000	470	0.003	21,000	310	0.002	19,000	230	0.002	19,000	180	0.001
R0.2	3	40,000	1,100	0.015	27,000	750	0.012	25,000	640	0.010	25,000	450	0.008
	6	24,000	500	0.004	17,000	310	0.003	16,000	280	0.003	16,000	240	0.002
R0.25	4	33,000	1,130	0.018	27,000	820	0.014	23,500	600	0.012	23,500	580	0.010
	8	20,500	580	0.006	17,000	410	0.005	15,000	350	0.004	15,000	310	0.003
R0.3	4	41,000	2,040	0.030	30,000	1,350	0.021	22,500	750	0.020	22,500	670	0.015
	8	25,500	950	0.015	21,000	700	0.012	16,000	490	0.010	16,000	390	0.008
	12	2,500	850	0.008	21,500	680	0.006	14,000	380	0.005	13,000	320	0.004
R0.4	4	41,000	2,200	0.035	28,000	1,400	0.027	23,000	820	0.025	23,000	680	0.015
	8	25,500	1,300	0.020	18,000	900	0.015	15,000	600	0.015	15,000	550	0.010
	12	25,500	1,000	0.015	15,500	500	0.012	12,000	440	0.010	12,000	400	0.007
R0.5	8	25,000	2,000	0.045	17,000	1,300	0.035	17,000	1,000	0.030	16,000	820	0.025
	15	17,000	1,050	0.022	12,000	730	0.018	11,000	650	0.016	11,000	500	0.012
	25	15,000	900	0.013	10,000	650	0.010	9,000	540	0.008	9,000	440	0.008
	35	9,000	580	0.008	6,000	380	0.006	6,000	360	0.005	6,000	260	0.004
R0.75	10	18,000	2,100	0.060	12,000	1,400	0.040	12,000	1,100	0.035	12,000	850	0.030
	20	13,000	1,200	0.030	9,000	900	0.020	9,000	700	0.015	9,000	600	0.013
	30	9,000	850	0.015	7,000	620	0.012	7,000	520	0.010	7,000	480	0.010
R1	12	15,000	2,350	0.080	11,000	1,700	0.065	10,500	1,360	0.056	10,500	1,070	0.046
	20	10,000	1,400	0.060	8,000	1,000	0.050	9,000	1,000	0.045	9,000	880	0.035
	30	9,000	1,200	0.045	7,000	800	0.035	7,000	780	0.030	7,000	640	0.025
	40	9,000	1,200	0.035	6,700	780	0.030	6,000	700	0.025	6,000	580	0.020
R1.5	20	10,000	2,200	0.090	8,000	1,300	0.070	7,000	1,200	0.060	7,000	1,100	0.050
	30	9,000	1,800	0.075	7,000	1,050	0.060	6,000	1,000	0.050	6,000	880	0.042
	40	7,500	1,400	0.060	5,000	880	0.050	5,100	800	0.040	5,100	700	0.035
	50	7,500	1,300	0.040	5,000	800	0.030	5,100	750	0.025	5,100	650	0.023
R2	40	6,000	1,200	0.081	3,500	600	0.065	3,200	530	0.050	3,200	500	0.043
	60	4,000	730	0.060	3,000	450	0.045	2,800	400	0.040	2,800	350	0.031
R3	29	9,000	2,100	0.140	7,000	1,050	0.100	6,000	950	0.080	6,000	850	0.058
	49	4,500	1,400	0.070	3,900	700	0.060	3,400	650	0.050	3,400	550	0.040
R4	33	8,900	2,200	0.180	7,000	1,100	0.140	6,000	1,000	0.100	6,000	800	0.082
	52	4,300	1,300	0.090	3,200	650	0.080	2,900	550	0.065	2,900	450	0.040
R5	37	5,500	1,700	0.185	3,500	850	0.160	3,400	700	0.120	3,400	600	0.080
	54	4,000	950	0.089	3,000	480	0.065	2,800	400	0.050	2,800	320	0.032
R6	63	3,800	700	0.120	2,800	350	0.082	2,500	310	0.060	2,500	220	0.045
	85	2,800	320	0.060	1,900	160	0.030	1,500	150	0.015	1,500	100	0.010
Milling Amount	Roughing	Ae ≤ 0.1D			Ae ≤ 0.1D			Ae ≤ 0.08D			Ae ≤ 0.06D		
	Finishing	Ae = Vf/n											
Depth of Cut		<ul style="list-style-type: none"> • Ap : Axial Depth • Ae : Radial Depth • D : Outside Diameter • n : Speed • Vf : Feed 											

2 Flutes High Speed Taper Neck Corner Radius End Mills

Endmills for pre-hardened and hardened steel (HRC50~62)

- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2SICR, Taper

Order Number	Diameter	Angle	Length of cut		Effective Length	Overall Length	Shank Dia
	D× R	θ	L1	L2	L	d	
2SICR 010 001 0601	1 X R0.1	1°	1	6	50	4	
2SICR 010 001 1001	1 X R0.1	1°	1	10	50	4	
2SICR 010 001 1501	1 X R0.1	1°	1	15	50	4	
2SICR 010 001 2001	1 X R0.1	1°	1	20	60	4	
2SICR 010 001 2501	1 X R0.1	1°	1	25	60	4	
2SICR 010 001 3001	1 X R0.1	1°	1	30	70	4	
2SICR 010 001 3501	1 X R0.1	1°	1	35	75	4	
2SICR 010 002 0601	1 X R0.2	1°	1	6	50	4	
2SICR 010 002 1001	1 X R0.2	1°	1	10	50	4	
2SICR 010 002 1501	1 X R0.2	1°	1	15	50	4	
2SICR 010 002 2001	1 X R0.2	1°	1	20	60	4	
2SICR 010 002 2501	1 X R0.2	1°	1	25	60	4	
2SICR 010 002 3001	1 X R0.2	1°	1	30	70	4	
2SICR 010 002 3501	1 X R0.2	1°	1	35	75	4	
2SICR 010 003 0601	1 X R0.3	1°	1	6	50	4	
2SICR 010 003 1001	1 X R0.3	1°	1	10	50	4	
2SICR 010 003 1501	1 X R0.3	1°	1	15	50	4	
2SICR 010 003 2001	1 X R0.3	1°	1	20	60	4	
2SICR 010 003 2501	1 X R0.3	1°	1	25	60	4	
2SICR 010 003 3001	1 X R0.3	1°	1	30	70	4	
2SICR 010 003 3501	1 X R0.3	1°	1	35	75	4	
2SICR 015 002 1001	1.5 X R0.2	1°	1.5	10	50	4	
2SICR 015 002 1501	1.5 X R0.2	1°	1.5	15	50	4	
2SICR 015 002 2001	1.5 X R0.2	1°	1.5	20	60	4	
2SICR 015 002 2501	1.5 X R0.2	1°	1.5	25	60	4	
2SICR 015 002 3001	1.5 X R0.2	1°	1.5	30	70	4	
2SICR 015 002 3501	1.5 X R0.2	1°	1.5	35	75	4	
2SICR 015 003 1001	1.5 X R0.3	1°	1.5	10	50	4	
2SICR 015 003 1501	1.5 X R0.3	1°	1.5	15	50	4	
2SICR 015 003 2001	1.5 X R0.3	1°	1.5	20	60	4	
2SICR 015 003 2501	1.5 X R0.3	1°	1.5	25	60	4	
2SICR 015 003 3001	1.5 X R0.3	1°	1.5	30	70	4	
2SICR 015 003 3501	1.5 X R0.3	1°	1.5	35	75	4	
2SICR 015 005 1001	1.5 X R0.5	1°	1.5	10	50	4	
2SICR 015 005 1501	1.5 X R0.5	1°	1.5	15	50	4	
2SICR 015 005 2001	1.5 X R0.5	1°	1.5	20	60	4	
2SICR 015 005 2501	1.5 X R0.5	1°	1.5	25	60	4	
2SICR 015 005 3001	1.5 X R0.5	1°	1.5	30	70	4	
2SICR 015 005 3501	1.5 X R0.5	1°	1.5	35	75	4	
2SICR 020 002 1201	2 X R0.2	1°	2	12	50	4	

Order Number	Diameter	Angle	Length of cut		Effective Length	Overall Length	Shank Dia
	D× R	θ	L1	L2	L	d	
2SICR 020 002 1601	2 X R0.2	1°	2	16	50	4	
2SICR 020 002 2001	2 X R0.2	1°	2	20	60	4	
2SICR 020 002 2501	2 X R0.2	1°	2	25	60	4	
2SICR 020 002 3001	2 X R0.2	1°	2	30	70	4	
2SICR 020 002 3501	2 X R0.2	1°	2	35	75	4	
2SICR 020 002 4001	2 X R0.2	1°	2	40	80	4	
2SICR 020 002 5001	2 X R0.2	1°	2	50	90	4	
2SICR 020 003 1201	2 X R0.3	1°	2	12	50	4	
2SICR 020 003 1601	2 X R0.3	1°	2	16	50	4	
2SICR 020 003 2001	2 X R0.3	1°	2	20	60	4	
2SICR 020 003 2501	2 X R0.3	1°	2	25	60	4	
2SICR 020 003 3001	2 X R0.3	1°	2	30	70	4	
2SICR 020 003 3501	2 X R0.3	1°	2	35	75	4	
2SICR 020 003 4001	2 X R0.3	1°	2	40	80	4	
2SICR 020 003 5001	2 X R0.3	1°	2	50	90	4	
2SICR 020 005 1201	2 X R0.5	1°	2	12	50	4	
2SICR 020 005 1601	2 X R0.5	1°	2	16	50	4	
2SICR 020 005 2001	2 X R0.5	1°	2	20	60	4	
2SICR 020 005 2501	2 X R0.5	1°	2	25	60	4	
2SICR 020 005 3001	2 X R0.5	1°	2	30	70	4	
2SICR 020 005 3501	2 X R0.5	1°	2	35	75	4	
2SICR 020 005 4001	2 X R0.5	1°	2	40	80	4	
2SICR 020 005 5001	2 X R0.5	1°	2	50	90	4	
2SICR 030 002 2001	3 X R0.2	1°	3	20	60	6	
2SICR 030 002 3001	3 X R0.2	1°	3	30	70	6	
2SICR 030 002 4001	3 X R0.2	1°	3	40	80	6	
2SICR 030 002 5001	3 X R0.2	1°	3	50	90	6	
2SICR 030 002 6001	3 X R0.2	1°	3	60	100	6	
2SICR 030 003 2001	3 X R0.3	1°	3	20	60	6	
2SICR 030 003 3001	3 X R0.3	1°	3	30	70	6	
2SICR 030 003 4001	3 X R0.3	1°	3	40	80	6	
2SICR 030 003 5001	3 X R0.3	1°	3	50	90	6	
2SICR 030 003 6001	3 X R0.3	1°	3	60	100	6	
2SICR 030 005 2001	3 X R0.5	1°	3	20	60	6	
2SICR 030 005 3001	3 X R0.5	1°	3	30	70	6	
2SICR 030 005 4001	3 X R0.5	1°	3	40	80	6	
2SICR 030 005 5001	3 X R0.5	1°	3	50	90	6	
2SICR 030 005 6001	3 X R0.5	1°	3	60	100	6	
2SICR 030 010 2001	3 X R1	1°	3	20	60	6	
	3 X R1	1°	3	30	70	6	

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	θ	L1	L2	L	d
2SICR 030 010 4001	3 X R1	1°	3	40	80	6
2SICR 030 010 5001	3 X R1	1°	3	50	90	6
2SICR 030 010 6001	3 X R1	1°	3	60	100	6
2SICR 040 002 2001	4 X R0.2	1°	4	20	60	6
2SICR 040 002 3001	4 X R0.2	1°	4	30	70	6
2SICR 040 002 4001	4 X R0.2	1°	4	40	80	6
2SICR 040 002 5001	4 X R0.2	1°	4	50	90	6
2SICR 040 002 6001	4 X R0.2	1°	4	60	100	6
2SICR 040 003 2001	4 X R0.3	1°	4	20	60	6
2SICR 040 003 3001	4 X R0.3	1°	4	30	70	6
2SICR 040 003 4001	4 X R0.3	1°	4	40	80	6
2SICR 040 003 5001	4 X R0.3	1°	4	50	90	6

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	θ	L1	L2	L	d
2SICR 040 003 6001	4 X R0.3	1°	4	60	100	6
2SICR 040 005 2001	4 X R0.5	1°	4	20	60	6
2SICR 040 005 3001	4 X R0.5	1°	4	30	70	6
2SICR 040 005 4001	4 X R0.5	1°	4	40	80	6
2SICR 040 005 5001	4 X R0.5	1°	4	50	90	6
2SICR 040 005 6001	4 X R0.5	1°	4	60	100	6
2SICR 040 010 2001	4 X R1	1°	4	20	60	6
2SICR 040 010 3001	4 X R1	1°	4	30	70	6
2SICR 040 010 4001	4 X R1	1°	4	40	80	6
2SICR 040 010 5001	4 X R1	1°	4	50	90	6
2SICR 040 010 6001	4 X R1	1°	4	60	100	6

2SICR / 4SICR

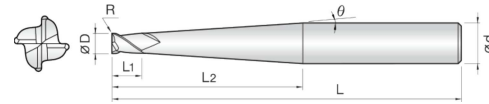
■ Apply 20% up values of below condition for 4TCR

• RPM : rev./min • Feed : mm/min

Material				Carbon Steels / Prehardened Steels S50C / NAK55 / NAK80 / HPM-1				Hardened Steels SKD11 / SKD61 / STAVAX / HPM-38				Copper / Aluminum			
Hardness				~ 43HRC				~ 55HRC							
Outside Diameter	Radius	Taper Angle	Effective Length	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth	RPM	FEED	Ap Axial Depth	Ae Radial Depth
1mm	R0.1 R0.2 R0.3	1°	6	22,000	1,300	0.08	0.35	17,000	900	0.06	0.35	22,000	1,500	0.24	0.50
			10	18,000	1,000	0.05	0.35	14,000	700	0.05	0.35	18,000	1,200	0.15	0.50
			15	18,000	850	0.03	0.20	14,000	600	0.03	0.13	18,000	1,000	0.09	0.50
			20	14,000	700	0.03	0.10	11,000	500	0.03	0.06	14,000	850	0.08	0.30
			25	14,000	600	0.02	0.05	11,000	400	0.02	0.03	14,000	700	0.06	0.15
			30	10,000	480	0.02	0.03	8,000	300	0.02	0.02	10,000	600	0.05	0.09
1.5mm	R0.2 R0.3 R0.5	1°	35	10,000	350	0.01	0.02	8,000	250	0.01	0.01	10,000	400	0.03	0.06
			10	16,000	1,300	0.10	0.55	12,800	900	0.10	0.55	16,000	1,500	0.30	0.60
			15	14,000	1,000	0.07	0.55	12,800	700	0.07	0.55	14,000	1,200	0.20	0.60
			20	14,000	800	0.05	0.30	11,200	550	0.05	0.20	14,000	900	0.16	0.50
			25	14,000	600	0.03	0.10	11,200	400	0.03	0.06	14,000	700	0.10	0.30
2mm	R0.2 R0.3 R0.5	1°	30	12,000	450	0.03	0.05	9,600	300	0.03	0.03	12,000	550	0.09	0.15
			15	14,000	1,200	0.10	0.70	11,200	850	0.07	0.70	14,000	1,400	0.30	0.70
			20	12,000	1,200	0.07	0.70	9,600	850	0.07	0.70	12,000	1,400	0.20	0.70
			25	12,000	1,000	0.05	0.50	9,600	700	0.04	0.50	12,000	1,200	0.15	0.70
			30	10,000	750	0.04	0.30	8,000	500	0.03	0.30	10,000	900	0.13	0.70
3mm	R0.2 R0.3 R0.5 R1	1°	40	8,000	400	0.03	0.20	6,400	300	0.02	0.20	8,000	500	0.10	0.50
			50	6,000	350	0.02	0.10	4,800	250	0.01	0.10	6,000	400	0.05	0.30
			15	11,000	1,600	0.15	1.05	8,800	1100	0.10	1.05	11,000	1,900	0.60	1.10
			20	11,000	1,600	0.13	1.05	8,800	1100	0.10	1.05	11,000	1,900	0.45	1.10
			30	9,000	1,200	0.10	1.05	7,200	850	0.07	1.05	9,000	1,400	0.30	1.10
4mm	R0.2 R0.3 R0.5 R1	1°	40	9,000	1,000	0.07	0.60	7,200	700	0.05	0.60	9,000	1,200	0.21	0.90
			50	8,000	640	0.05	0.35	6,400	450	0.04	0.35	8,000	750	0.15	0.80
			60	8,000	480	0.03	0.20	6,400	300	0.02	0.20	8,000	550	0.10	0.70
			20	10,000	1,800	0.18	2.00	7,500	1200	0.20	2.00	10,000	2,000	0.90	2.00
4mm	R0.2 R0.3 R0.5 R1	1°	30	8,000	1,400	0.15	2.00	6,500	1000	0.14	2.00	8,000	1,600	0.60	2.00
			40	8,000	1,200	0.12	1.20	5,800	850	0.10	1.20	8,000	1,400	0.40	1.60
			50	7,000	800	0.10	0.70	4,800	600	0.08	0.70	7,000	1,000	0.30	1.20
			60	7,000	600	0.80	0.40	4,800	400	0.04	0.40	7,000	800	0.20	0.80

4 Flutes High Speed Taper Neck Corner Radius End Mills Endmills for pre-hardened and hardened steel (HRC50~65)

- Minimize chattering and fracturing by taper designed flute.
- Designed for minimizing edge chipping by corner R shape.
- High precise edge tolerance.



Size	D Tolerance
$D \leq \varnothing 6$	+0 ~ -0.01mm
$D > \varnothing 6$	+0 ~ -0.015mm

4SICR, Taper

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D × R	θ	L1	L2	L	d
4SICR 010 001 0601	1 X R0.1	1°	1	6	50	4
4SICR 010 001 1001	1 X R0.1	1°	1	10	50	4
4SICR 010 001 1501	1 X R0.1	1°	1	15	50	4
4SICR 010 001 2001	1 X R0.1	1°	1	20	60	4
4SICR 010 001 2501	1 X R0.1	1°	1	25	60	4
4SICR 010 001 3001	1 X R0.1	1°	1	30	70	4
4SICR 010 001 3501	1 X R0.1	1°	1	35	75	4
4SICR 010 002 0601	1 X R0.2	1°	1	6	50	4
4SICR 010 002 1001	1 X R0.2	1°	1	10	50	4
4SICR 010 002 1501	1 X R0.2	1°	1	15	50	4
4SICR 010 002 2001	1 X R0.2	1°	1	20	60	4
4SICR 010 002 2501	1 X R0.2	1°	1	25	60	4
4SICR 010 002 3001	1 X R0.2	1°	1	30	70	4
4SICR 010 002 3501	1 X R0.2	1°	1	35	75	4
4SICR 015 002 1001	1.5 X R0.2	1°	1.5	10	50	4
4SICR 015 002 1501	1.5 X R0.2	1°	1.5	15	50	4
4SICR 015 002 2001	1.5 X R0.2	1°	1.5	20	60	4
4SICR 015 002 2501	1.5 X R0.2	1°	1.5	25	60	4
4SICR 015 002 3001	1.5 X R0.2	1°	1.5	30	70	4
4SICR 015 002 3501	1.5 X R0.2	1°	1.5	35	75	4
4SICR 015 005 1001	1.5 X R0.5	1°	1.5	10	50	4
4SICR 015 005 1501	1.5 X R0.5	1°	1.5	15	50	4
4SICR 015 005 2001	1.5 X R0.5	1°	1.5	20	60	4
4SICR 015 005 2501	1.5 X R0.5	1°	1.5	25	60	4
4SICR 015 005 3001	1.5 X R0.5	1°	1.5	30	70	4
4SICR 015 005 3501	1.5 X R0.5	1°	1.5	35	75	4
4SICR 020 002 1201	2 X R0.2	1°	2	12	50	4
4SICR 020 002 1601	2 X R0.2	1°	2	16	50	4
4SICR 020 002 2001	2 X R0.2	1°	2	20	60	4
4SICR 020 002 2501	2 X R0.2	1°	2	25	60	4
4SICR 020 002 3001	2 X R0.2	1°	2	30	70	4
4SICR 020 002 3501	2 X R0.2	1°	2	35	75	4
4SICR 020 002 4001	2 X R0.2	1°	2	40	80	4

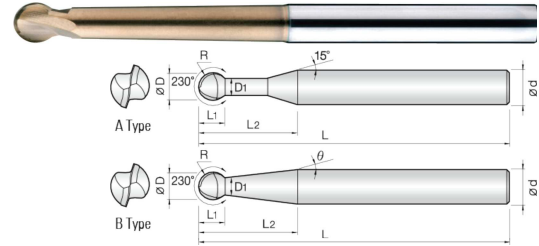
Unit : mm

Order Number	Diameter	Angle	Length of cut	Effective Length	Overall Length	Shank Dia
	D × R	θ	L1	L2	L	d
4SICR 020 002 5001	2 X R0.2	1°	2	50	90	4
4SICR 020 005 1201	2 X R0.5	1°	2	12	50	4
4SICR 020 005 1601	2 X R0.5	1°	2	16	50	4
4SICR 020 005 2001	2 X R0.5	1°	2	20	60	4
4SICR 020 005 2501	2 X R0.5	1°	2	25	60	4
4SICR 020 005 3001	2 X R0.5	1°	2	30	70	4
4SICR 020 005 3501	2 X R0.5	1°	2	35	75	4
4SICR 020 005 4001	2 X R0.5	1°	2	40	80	4
4SICR 020 005 5001	2 X R0.5	1°	2	50	90	4
4SICR 030 002 2001	3 X R0.2	1°	3	20	60	6
4SICR 030 002 3001	3 X R0.2	1°	3	30	70	6
4SICR 030 002 4001	3 X R0.2	1°	3	40	80	6
4SICR 030 002 5001	3 X R0.2	1°	3	50	90	6
4SICR 030 002 6001	3 X R0.2	1°	3	60	100	6
4SICR 030 005 2001	3 X R0.5	1°	3	20	60	6
4SICR 030 005 3001	3 X R0.5	1°	3	30	70	6
4SICR 030 005 4001	3 X R0.5	1°	3	40	80	6
4SICR 030 005 5001	3 X R0.5	1°	3	50	90	6
4SICR 030 005 6001	3 X R0.5	1°	3	60	100	6
4SICR 040 002 2001	4 X R0.2	1°	4	20	60	6
4SICR 040 002 3001	4 X R0.2	1°	4	30	70	6
4SICR 040 002 4001	4 X R0.2	1°	4	40	80	6
4SICR 040 002 5001	4 X R0.2	1°	4	50	90	6
4SICR 040 002 6001	4 X R0.2	1°	4	60	100	6
4SICR 040 005 2001	4 X R0.5	1°	4	20	60	6
4SICR 040 005 3001	4 X R0.5	1°	4	30	70	6
4SICR 040 005 4001	4 X R0.5	1°	4	40	80	6
4SICR 040 005 5001	4 X R0.5	1°	4	50	90	6
4SICR 040 005 6001	4 X R0.5	1°	4	60	100	6



2 Flutes Spherical End Mills for 3D Cut 230° Endmills for pre-hardened and hardened steel (HRC50~62)

- 230° degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.



Size	D Tolerance
$D \leq \varnothing 5$	+0 ~ -0.01mm
$D > \varnothing 5$	+0 ~ -0.015mm

Unit : mm

2SID, Spherical

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R×D	D1	L1	L2	θ	L		d
2SID 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
2SID 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
2SID 010 013 200	0.5R X 1	0.91	0.7	20	1°30'	80	B	6
2SID 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
2SID 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
2SID 015 013 200	0.75R X 1.5	1.36	1	20	1°30'	80	B	6
2SID 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
2SID 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
2SID 020 013 200	1R X 2	1.8	1.4	20	1°30'	80	B	6
2SID 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
2SID 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
2SID 030 013 300	1.5R X 3	2.7	2.1	30	1°30'	80	B	6
2SID 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
2SID 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
2SID 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
2SID 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
2SID 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
2SID 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
2SID 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
2SID 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
2SID 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
2SID 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

2SID/4SID

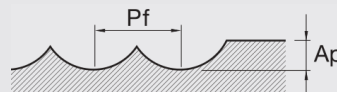
■ Apply 20% up values of below condition for 4DPH/4DPM

• RPM : rev./min • Feed : mm/min

Material	Alloy Steels / Tool Steels SCM / SKT / SKS / SKD		Hardened Steels /Prehardened Steels SKT / SKD / NAK55 / HPM11		Stainless Steels /Hardened Steels SUS304 / SKD		Hardened Steels		Hardened Steels	
	~ 30HRC		30 ~ 38HRC		38 ~ 45HRC		45 ~ 55HRC		55 ~ 60HRC	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.5	25,600	680	25,600	680	25,600	680	25,600	680	25,600	610
R0.75	22,000	850	22,000	850	22,000	850	22,000	850	22,000	750
R1	19,200	1,080	19,200	1,080	19,200	1,080	19,200	1,080	17,600	960
R2	12,400	1,440	11,200	1,240	10,800	1,160	10,000	1,080	8,800	920
R3	8,400	1,480	7,600	1,360	7,200	1,280	6,800	1,200	5,900	1,040
R4	6,400	1,120	5,700	1,000	5,500	960	5,100	880	4,400	790
R5	5,100	880	4,600	800	4,400	784	4,000	720	3,600	640
R6	4,800	840	3,800	670	3,640	640	3,400	600	3,000	540

Depth of Cut

Ap	Pf
0.05D	0.1D



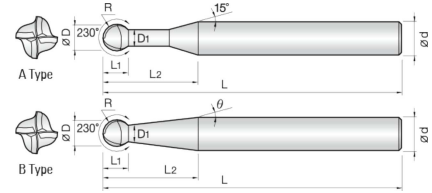
Ap	Pf
0.02D	0.1D



4 Flutes Spherical End Mills for 3D Cut 230°

Endmills for pre-hardened and hardened steel (HRC50~65)

- 230° degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.01mm
D > Ø5	+0 ~ -0.015mm

Unit : mm

4SID,
Spherical

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R × D	D1	L1	L2	θ	L		d
4SID 010 040 S06	0.5R X 1	0.91	0.7	4	0°	60	A	6
4SID 010 060 S06	0.5R X 1	0.91	0.7	6	0°	60	A	6
4SID 010 013 200	0.5R X 1	0.91	0.7	20	1°30'	80	B	6
4SID 015 060 S06	0.75R X 1.5	1.36	1	6	0°	60	A	6
4SID 015 080 S06	0.75R X 1.5	1.36	1	8	0°	60	A	6
4SID 015 013 200	0.75R X 1.5	1.36	1	20	1°30'	80	B	6
4SID 020 060 S06	1R X 2	1.8	1.4	6	0°	60	A	6
4SID 020 100 S06	1R X 2	1.8	1.4	10	0°	60	A	6
4SID 020 013 200	1R X 2	1.8	1.4	20	1°30'	80	B	6
4SID 030 100 S06	1.5R X 3	2.7	2.1	10	0°	70	A	6
4SID 030 150 S06	1.5R X 3	2.7	2.1	15	0°	70	A	6
4SID 030 013 300	1.5R X 3	2.7	2.1	30	1°30'	80	B	6
4SID 040 120 S06	2R X 4	3.6	2.8	12	0°	70	A	6
4SID 040 200 S06	2R X 4	3.6	2.8	20	0°	70	A	6
4SID 040 030 250	2R X 4	3.6	2.8	25	3°	80	B	6
4SID 050 010 400	2.5R X 5	4.5	3.5	40	1°	90	B	6
4SID 060 150 S06	3R X 6	5.4	4.2	15	0°	90	A	6
4SID 060 300 S06	3R X 6	5.4	4.2	30	0°	90	A	6
4SID 060 010 210	3R X 6	5.4	4.2	21	1°	100	B	6
4SID 080 010 280	4R X 8	7.2	5.7	28	1°	100	B	8
4SID 100 010 350	5R X 10	9	7.1	35	1°	110	B	10
4SID 120 010 420	6R X 12	10.8	8.5	42	1°	120	B	12

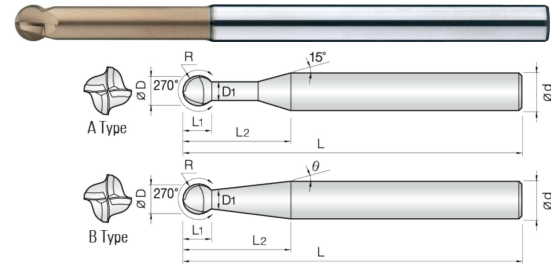


0.5R - 2.5R 3R - 6R

4 Flutes Spherical End Mills for 3D Cut 270°

Endmills for pre-hardened and hardened steel (HRC50~62)

- 270° degree ball shape for wide range 3D machining.
- Minimize chattering and fracturing by taper and straight designed flute.

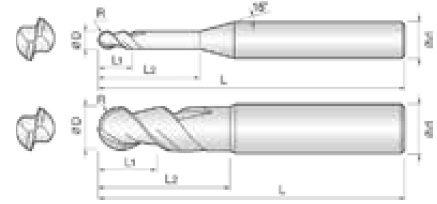


Size	D Tolerance
D ≤ Ø5	+0 ~ -0.01mm
D > Ø5	+0 ~ -0.015mm

Unit : mm

4SIM, Spherical

Order Number	Diameter	Neck Diameter	Length of cut	Effective Length	Angle	Overall Length	Type	Shank Dia
	R×D	D1	L1	L2	θ	L		d
4SIM 010 040 S06	0.5R X 1	0.7	0.8	4	0°	60	A	6
4SIM 010 060 S06	0.5R X 1	0.7	0.8	6	0°	60	A	6
4SIM 010 013 200	0.5R X 1	0.7	0.8	20	1°30	80	B	6
4SIM 015 060 S06	0.75R X 1.5	1	1.2	6	0°	60	A	6
4SIM 015 080 S06	0.75R X 1.5	1	1.2	8	0°	60	A	6
4SIM 015 013 200	0.75R X 1.5	1	1.2	20	1°30	80	B	6
4SIM 020 060 S06	1R X 2	1.4	1.7	6	0°	60	A	6
4SIM 020 100 S06	1R X 2	1.4	1.7	10	0°	60	A	6
4SIM 020 013 200	1R X 2	1.4	1.7	20	1°30	80	B	6
4SIM 030 100 S06	1.5R X 3	2.1	2.5	10	0°	70	A	6
4SIM 030 150 S06	1.5R X 3	2.1	2.5	15	0°	70	A	6
4SIM 030 013 300	1.5R X 3	2.1	2.5	30	1°30	80	B	6
4SIM 040 120 S06	2R X 4	2.8	3.4	12	0°	70	A	6
4SIM 040 200 S06	2R X 4	2.8	3.4	20	0°	70	A	6
4SIM 040 030 250	2R X 4	2.8	3.4	25	3°	80	B	6
4SIM 050 010 400	2.5R X 5	3.5	4.2	40	1°	90	B	6
4SIM 060 150 S06	3R X 6	4.2	5.1	15	0°	90	A	6
4SIM 060 300 S06	3R X 6	4.2	5.1	30	0°	90	A	6
4SIM 060 010 210	3R X 6	4.2	5.1	21	1°	100	B	6
4SIM 080 010 280	4R X 8	5.6	6.8	28	1°	100	B	8
4SIM 100 010 350	5R X 10	7	8.5	35	1°	110	B	10
4SIM 120 010 420	6R X 12	8.5	10	42	1°	120	B	12



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2AKO, Ball

2 Flutes 45° Helix Rib Ball End Mills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials.

- Improve wear resistance as well as avoid edge stress in various applications.
- High speed, feed applicable by 45° degree helix and deep chip pocket design.

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKO 010 030 S04	0.5R X 1	1.5	3	50	4
2AKO 010 050 S04	0.5R X 1	1.5	5	50	4
2AKO 010 080 S04	0.5R X 1	1.5	8	50	4
2AKO 010 100 S04	0.5R X 1	1.5	10	50	4
2AKO 010 120 S04	0.5R X 1	1.5	12	50	4
2AKO 010 160 S04	0.5R X 1	1.5	16	50	4
2AKO 010 200 S04	0.5R X 1	1.5	20	50	4
2AKO 015 050 S04	0.75R X 1.5	2	5	50	4
2AKO 015 080 S04	0.75R X 1.5	2	8	50	4
2AKO 015 100 S04	0.75R X 1.5	2	10	50	4
2AKO 015 120 S04	0.75R X 1.5	2	12	50	4
2AKO 015 160 S04	0.75R X 1.5	2	16	50	4
2AKO 015 200 S04	0.75R X 1.5	2	20	50	4
2AKO 020 050 S06	1R X 2	3	5	50	6
2AKO 020 080 S06	1R X 2	3	8	50	6
2AKO 020 100 S06	1R X 2	3	10	50	6
2AKO 020 120 S06	1R X 2	3	12	60	6
2AKO 020 160 S06	1R X 2	3	16	60	6
2AKO 020 200 S06	1R X 2	3	20	60	6
2AKO 020 250 S06	1R X 2	3	25	65	6
2AKO 025 060 S06	1.25R X 2.5	4	6	50	6
2AKO 025 100 S06	1.25R X 2.5	4	10	50	6
2AKO 025 120 S06	1.25R X 2.5	4	12	60	6
2AKO 025 160 S06	1.25R X 2.5	4	16	60	6
2AKO 025 200 S06	1.25R X 2.5	4	20	60	6
2AKO 030 080 S06	1.5R X 3	4.5	8	60	6
2AKO 030 120 S06	1.5R X 3	4.5	12	60	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2AKO 030 160 S06	1.5R X 3	4.5	16	60	6
2AKO 030 200 S06	1.5R X 3	4.5	20	60	6
2AKO 030 250 S06	1.5R X 3	4.5	25	70	6
2AKO 030 300 S06	1.5R X 3	4.5	30	70	6
2AKO 030 400 S06	1.5R X 3	4.5	40	80	6
2AKO 040 100 S06	2R X 4	6	10	60	6
2AKO 040 160 S06	2R X 4	6	16	60	6
2AKO 040 200 S06	2R X 4	6	20	60	6
2AKO 040 250 S06	2R X 4	6	25	70	6
2AKO 040 300 S06	2R X 4	6	30	70	6
2AKO 040 400 S06	2R X 4	6	40	80	6
2AKO 050 160 S06	2.5R X 5	8	16	80	6
2AKO 050 200 S06	2.5R X 5	8	20	80	6
2AKO 050 250 S06	2.5R X 5	8	25	80	6
2AKO 060 150 S06	3R X 6	9	15	90	6
2AKO 060 300 S06	3R X 6	9	30	90	6
2AKO 060 400 S06	3R X 6	9	40	90	6
2AKO 080 200 S08	4R X 8	12	20	100	8
2AKO 100 250 S10	5R X 10	15	25	100	10
2AKO 120 300 S12	6R X 12	18	30	110	12
2AKO 160 600 S16	8R X 16	30	60	160	16

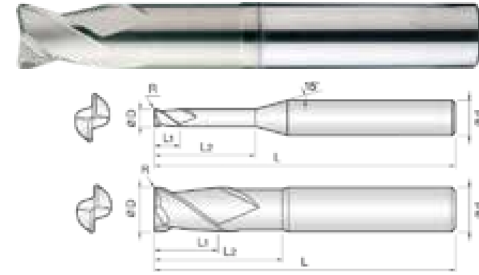


Ø1~Ø6 Ø8~Ø12

2 Flutes Rib Corner Radius End Mills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials.

- Improve wear resistance as well as avoid edge stress in various applications.
- Smooth chip outflow by deep chip pocket.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

20AK, Corner

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
20AK 010 001 040	1 X R0.1	1.5	4	50	4
20AK 010 001 060	1 X R0.1	1.5	6	50	4
20AK 010 001 080	1 X R0.1	1.5	8	50	4
20AK 010 001 100	1 X R0.1	1.5	10	50	4
20AK 010 001 120	1 X R0.1	1.5	12	50	4
20AK 010 001 160	1 X R0.1	1.5	16	50	4
20AK 010 001 200	1 X R0.1	1.5	20	50	4
20AK 015 001 060	1.5 X R0.1	2	6	50	4
20AK 015 001 100	1.5 X R0.1	2	10	50	4
20AK 015 001 120	1.5 X R0.1	2	12	50	4
20AK 015 001 160	1.5 X R0.1	2	16	50	4
20AK 015 001 200	1.5 X R0.1	2	20	50	4
20AK 015 001 250	1.5 X R0.1	2	25	60	4
20AK 015 002 060	1.5 X R0.2	2	6	50	4
20AK 015 002 100	1.5 X R0.2	2	10	50	4
20AK 015 002 120	1.5 X R0.2	2	12	50	4
20AK 015 002 160	1.5 X R0.2	2	16	50	4
20AK 015 002 200	1.5 X R0.2	2	20	50	4
20AK 015 002 250	1.5 X R0.2	2	25	60	4
20AK 020 002 060	2 X R0.2	3	6	50	4
20AK 020 002 100	2 X R0.2	3	10	50	4
20AK 020 002 120	2 X R0.2	3	12	50	4
20AK 020 002 160	2 X R0.2	3	16	50	4
20AK 020 002 200	2 X R0.2	3	20	50	4
20AK 020 002 250	2 X R0.2	3	25	60	4
20AK 020 005 060	2 X R0.5	3	6	50	4
20AK 020 005 100	2 X R0.5	3	10	50	4
20AK 020 005 120	2 X R0.5	3	12	50	4
20AK 020 005 140	2 X R0.5	3	14	50	4
20AK 020 005 160	2 X R0.5	3	16	50	4
20AK 020 005 200	2 X R0.5	3	20	50	4
20AK 020 005 250	2 X R0.5	3	25	60	4
20AK 025 002 060	2.5 X R0.2	3.5	6	50	4
20AK 025 002 100	2.5 X R0.2	3.5	10	50	4
20AK 025 002 120	2.5 X R0.2	3.5	12	50	4
20AK 025 002 160	2.5 X R0.2	3.5	16	50	4
20AK 025 002 200	2.5 X R0.2	3.5	20	50	4
20AK 025 002 250	2.5 X R0.2	3.5	25	60	4
20AK 025 005 060	2.5 X R0.5	3.5	6	50	4
20AK 025 005 100	2.5 X R0.5	3.5	10	50	4
20AK 025 005 120	2.5 X R0.5	3.5	12	50	4
20AK 025 005 160	2.5 X R0.5	3.5	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D× R	L1	L2	L	d
20AK 025 005 200	2.5 X R0.5	3.5	20	50	4
20AK 025 005 250	2.5 X R0.5	3.5	25	60	4
20AK 030 002 100	3 X R0.2	4	10	55	6
20AK 030 002 120	3 X R0.2	4	12	55	6
20AK 030 002 160	3 X R0.2	4	16	55	6
20AK 030 002 200	3 X R0.2	4	20	55	6
20AK 030 002 250	3 X R0.2	4	25	65	6
20AK 030 002 300	3 X R0.2	4	30	70	6
20AK 030 002 350	3 X R0.2	4	35	75	6
20AK 030 002 400	3 X R0.2	4	40	80	6
20AK 030 005 100	3 X R0.5	4	10	55	6
20AK 030 005 120	3 X R0.5	4	12	55	6
20AK 030 005 160	3 X R0.5	4	16	55	6
20AK 030 005 200	3 X R0.5	4	20	55	6
20AK 030 005 250	3 X R0.5	4	25	65	6
20AK 030 005 300	3 X R0.5	4	30	70	6
20AK 030 005 350	3 X R0.5	4	35	75	6
20AK 030 005 400	3 X R0.5	4	40	80	6
20AK 040 002 120	4 X R0.2	5	12	55	6
20AK 040 002 160	4 X R0.2	5	16	55	6
20AK 040 002 200	4 X R0.2	5	20	55	6
20AK 040 002 300	4 X R0.2	5	30	70	6
20AK 040 002 400	4 X R0.2	5	40	80	6
20AK 040 005 120	4 X R0.5	5	12	55	6
20AK 040 005 160	4 X R0.5	5	16	55	6
20AK 040 005 200	4 X R0.5	5	20	55	6
20AK 040 005 300	4 X R0.5	5	30	70	6
20AK 040 005 400	4 X R0.5	5	40	80	6
20AK 060 002 200	6 X R0.2	7	20	60	6
20AK 060 005 200	6 X R0.5	7	20	60	6
20AK 060 010 200	6 X R1	7	20	60	6
20AK 060 015 200	6 X R1.5	7	20	60	6
20AK 080 005 250	8 X R0.5	9	25	65	8
20AK 080 010 250	8 X R1	9	25	65	8
20AK 080 015 250	8 X R1.5	9	25	65	8
20AK 100 005 320	10 X R0.5	11	32	70	10
20AK 100 010 320	10 X R1	11	32	70	10
20AK 100 015 320	10 X R1.5	11	32	70	10
20AK 120 005 380	12 X R0.5	12	38	80	12
20AK 120 010 380	12 X R1	12	38	80	12
20AK 120 015 380	12 X R1.5	12	38	80	12



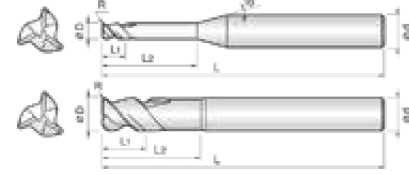
Ø1-Ø6 Ø8-Ø12



3 Flutes 45° Helix Rib Corner Radius End Mills for Copper

Endmills for copper, copper alloy, nonferrous and non-metallic materials.

- Improve wear resistance as well as avoid edge stress in various applications.
- High speed, feed applicable by 3 flute 45° degree helix and deep chip pocket design.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit: mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
3A0B 010 001 030	1 X R0.1	1.5	3	45	4
3A0B 010 001 060	1 X R0.1	1.5	6	45	4
3A0B 010 001 100	1 X R0.1	1.5	10	45	4
3A0B 010 002 030	1 X R0.2	1.5	3	45	4
3A0B 010 002 060	1 X R0.2	1.5	6	45	4
3A0B 010 002 100	1 X R0.2	1.5	10	45	4
3A0B 015 001 050	1.5 X R0.1	2	5	45	4
3A0B 015 001 080	1.5 X R0.1	2	8	45	4
3A0B 015 001 120	1.5 X R0.1	2	12	45	4
3A0B 015 002 050	1.5 X R0.2	2	5	45	4
3A0B 015 002 080	1.5 X R0.2	2	8	45	4
3A0B 015 002 120	1.5 X R0.2	2	12	45	4
3A0B 020 001 060	2 X R0.1	3	6	45	4
3A0B 020 001 100	2 X R0.1	3	10	45	4
3A0B 020 001 140	2 X R0.1	3	14	45	4
3A0B 020 002 060	2 X R0.2	3	6	45	4
3A0B 020 002 100	2 X R0.2	3	10	45	4
3A0B 020 002 140	2 X R0.2	3	14	45	4
3A0B 025 001 080	2.5 X R0.1	3.5	8	45	4
3A0B 025 001 120	2.5 X R0.1	3.5	12	45	4
3A0B 025 001 160	2.5 X R0.1	3.5	16	45	4
3A0B 025 002 080	2.5 X R0.2	3.5	8	45	4
3A0B 025 002 120	2.5 X R0.2	3.5	12	45	4
3A0B 025 002 160	2.5 X R0.2	3.5	16	45	4
3A0B 025 005 080	2.5 X R0.5	3.5	8	45	4
3A0B 025 005 120	2.5 X R0.5	3.5	12	45	4
3A0B 025 005 160	2.5 X R0.5	3.5	16	45	4
3A0B 030 002 100	3 X R0.2	4	10	50	4
3A0B 030 002 160	3 X R0.2	4	16	50	4
3A0B 030 002 200	3 X R0.2	4	20	50	4
3A0B 030 003 100	3 X R0.3	4	10	50	4
3A0B 030 003 160	3 X R0.3	4	16	50	4
3A0B 030 003 200	3 X R0.3	4	20	50	4
3A0B 030 005 100	3 X R0.5	4	10	50	4
3A0B 030 005 160	3 X R0.5	4	16	50	4

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	DxR	L1	L2	L	d
3A0B 030 005 200	3 X R0.5	4	20	50	4
3A0B 040 002 120	4 X R0.2	6	12	50	4
3A0B 040 002 160	4 X R0.2	6	16	50	4
3A0B 040 002 200	4 X R0.2	6	20	50	4
3A0B 040 003 120	4 X R0.3	6	12	50	4
3A0B 040 003 160	4 X R0.3	6	16	50	4
3A0B 040 003 200	4 X R0.3	6	20	50	4
3A0B 040 005 120	4 X R0.5	6	12	50	4
3A0B 040 005 160	4 X R0.5	6	16	50	4
3A0B 040 005 200	4 X R0.5	6	20	50	4
3A0B 060 003 200	6 X R0.3	9	20	55	6
3A0B 060 003 300	6 X R0.3	9	30	70	6
3A0B 060 005 200	6 X R0.5	9	20	55	6
3A0B 060 005 300	6 X R0.5	9	30	70	6
3A0B 060 010 200	6 X R1	9	20	55	6
3A0B 060 010 300	6 X R1	9	30	70	6
3A0B 080 003 S08	8 X R0.3	12	25	65	8
3A0B 080 005 S08	8 X R0.5	12	25	65	8
3A0B 080 010 S08	8 X R1	12	25	65	8
3A0B 100 005 S10	10 X R0.5	15	30	70	10
3A0B 100 010 S10	10 X R1	15	30	70	10
3A0B 120 005 S12	12 X R0.5	20	35	80	12
3A0B 120 010 S12	12 X R1	20	35	80	12

3A0B, Corner

• RPM : rev/min • Feed : mm/min

Material	Aluminum Alloys		Copper Alloys		
	Radius	RPM	FEED	RPM	FEED
R0.5		43,200	1,300	43,200	900
R0.75		31,500	1,200	31,500	1,000
R1		21,600	1,000	21,600	1,100
R1.5		14,400	840	14,400	1,100
R2		11,000	840	10,800	1,100
R2.5		8,700	840	8,700	1,100
R3		7,200	840	7,200	1,100
R4		5,400	810	5,400	1,100
R5		4,300	810	4,300	1,000
R6		3,600	810	3,600	950
R8		2,700	810	2,700	900

Material	Aluminum Alloys		Copper Alloys		
	Radius	RPM	FEED	RPM	FEED
Depth of Cut	$0.1 \times R$ (~45HRc)				
	$\sim 0.08 \times R$ (~55HRc)				
Depth of Cut	$\sim 0.15 \times R$ R<0.1				
	$\sim 0.2 \times R$ $0.1 \leq R \leq 0.5$				
	$\sim 0.3 \times R$ R>0.5				
Depth of Cut	$\sim 0.16 \times R$ $R \leq 0.3$ (~45HRc)				
	$\sim 0.25 \times R$ $R \leq 3$ (~45HRc)				
	$\sim 0.17 \times R$ $R \geq 4$ (~45HRc)				
Depth of Cut	$\sim 0.05 \times R$				

3A0B, Corner

20AK/3A0B

■ Apply 10% down values of below condition for 20CR

• RPM : rev/min • Feed : mm/min

Material	Side Milling											
	Aluminum Alloy Expanding Material A7075				Aluminum Alloy Casting < Si1 3%				Aluminum Alloy Steels / Copper AZ91 / AZ80A / C1100			
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	24,000	680	40,000	1,100	24,000	680	27,000	580	12,700	200	19,200	220
2mm	20,600	800	37,000	1,400	20,600	800	24,000	800	9,600	230	15,200	340
3mm	16,800	900	32,000	1,700	16,800	900	19,200	1,000	6,400	260	13,600	500
4mm	12,400	1,000	25,600	2,000	12,400	1,000	15,400	1,200	4,800	290	11,400	640
6mm	8,400	1,100	21,200	2,800	8,300	1,120	12,700	1,700	3,200	320	8,500	770
8mm	6,400	1,200	16,000	3,000	6,400	1,200	9,600	1,800	2,400	370	6,400	900
10mm	5,100	1,360	12,800	3,400	5,100	1,360	7,700	2,000	1,900	380	5,100	920
12mm	4,200	1,400	10,600	3,500	4,200	1,400	6,400	2,100	1,600	400	4,200	1,000

Material	Depth of Cut											
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling		High Speed Milling	
Depth of Cut	$\bullet A_p : 1D$		$\bullet A_p : 1D$		$\bullet A_p : 1D$		$\bullet A_p : 1D$		$\bullet A_p : 1D$		$\bullet A_p : 1D$	
	$\bullet A_e : 0.2D$		$\bullet A_e : 0.1D$		$\bullet A_e : 0.2D$		$\bullet A_e : 0.1D$		$\bullet A_e : 0.2D$		$\bullet A_e : 0.1D$	

■ Apply 10% down values of below condition for 20CR

• RPM : rev/min • Feed : mm/min

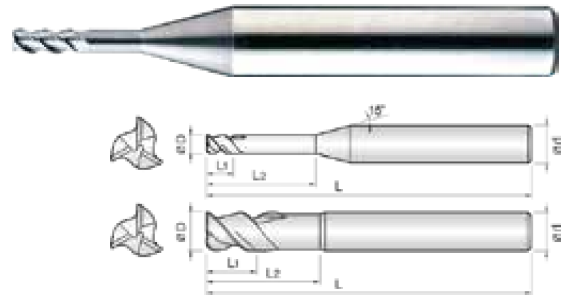
Material	Slotting									
	Aluminum Alloy Expanding Material A7075				Aluminum Alloy Casting < Si1 3%				Aluminum Alloy Steels / Copper AZ91 / AZ80A / C1100	
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	24,000	520	40,000	660	24,000	520	27,000	480	12,700	130
2mm	20,600	590	37,000	940	20,600	590	24,000	600	9,600	200
3mm	16,800	620	32,000	1,200	16,800	620	19,200	700	6,400	260
4mm	12,400	650	25,600	1,400	12,400	650	15,400	800	4,800	300
6mm	8,400	760	21,200	1,900	8,300	760	12,700	1,160	3,200	320
8mm	6,400	800	16,000	2,000	6,400	800	9,600	1,200	2,400	370
10mm	5,100	920	12,800	2,200	5,100	920	7,700	1,360	1,900	380
12mm	4,200	960	10,600	2,400	4,200	960	6,400	1,440	1,600	410

Material	Depth of Cut									
	Regular Milling		High Speed Milling		Regular Milling		High Speed Milling		Regular Milling	
Depth of Cut	$\bullet A_p : 0.5D$		$\bullet A_p : 0.25D$		$\bullet A_p : 0.5D$		$\bullet A_p : 0.25D$		$\bullet A_p : 0.5D$	

3 Flutes 45° Helix Rib End Mills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Applied ultra fine WC grade(0.2 μm) for excellent surface finish.
- Applied short flute length for various applications.
- Minimize built up edge by double edge and deep pocket design.



Size	D Tolerance
D ≤ Ø12	+0 ~ -0.01mm

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3AKA 010 020 S06	1	2	-	60	6
3AKA 010 040 S06	1	2	4	60	6
3AKA 010 060 S06	1	2	6	60	6
3AKA 010 080 S06	1	2	8	60	6
3AKA 010 100 S06	1	2	10	60	6
3AKA 015 030 S06	1.5	3	-	60	6
3AKA 015 060 S06	1.5	3	6	60	6
3AKA 015 100 S06	1.5	3	10	60	6
3AKA 015 120 S06	1.5	3	12	60	6
3AKA 020 040 S06	2	4	-	60	6
3AKA 020 080 S06	2	4	8	60	6
3AKA 020 120 S06	2	4	12	60	6
3AKA 020 160 S06	2	4	16	60	6
3AKA 025 050 S06	2.5	5	-	60	6
3AKA 025 100 S06	2.5	5	10	60	6
3AKA 025 150 S06	2.5	5	15	60	6
3AKA 025 200 S06	2.5	5	20	60	6
3AKA 030 060 S06	3	6	-	60	6
3AKA 030 100 S06	3	6	10	60	6
3AKA 030 150 S06	3	6	15	60	6
3AKA 030 200 S06	3	6	20	70	6
3AKA 030 250 S06	3	6	25	70	6
3AKA 030 300 S06	3	6	30	80	6
3AKA 040 080 S06	4	8	-	70	6
3AKA 040 100 S06	4	8	10	70	6
3AKA 040 150 S06	4	8	15	70	6
3AKA 040 200 S06	4	8	20	70	6
3AKA 040 250 S06	4	8	25	70	6
3AKA 040 300 S06	4	8	30	80	6
3AKA 050 100 S06	5	10	-	80	6
3AKA 050 200 S06	5	10	20	80	6
3AKA 050 300 S06	5	10	30	80	6
3AKA 060 200 S06	6	12	20	80	6
3AKA 060 400 S06	6	12	40	80	6
3AKA 080 400 S08	8	16	40	100	8
3AKA 100 500 S10	10	20	50	110	10
3AKA 120 500 S12	12	24	50	110	12

3AKA, Square

3AKE/3AKA

• RPM : rev/min • Feed : mm/min

Material	Aluminum Alloys etc.								
	Outside Diameter	RPM	3AHE			RPM	3AHM		
			Vertical	Solting	Side Milling		Vertical	Solting	Side Milling
			FEED				FEED		
1mm	25,500	130	770	930	30,000	150	900	1,100	
2mm	25,500	190	1,530	1,800	30,000	225	1,800	2,150	
3mm	18,400	190	1,700	2,000	21,600	225	2,000	2,400	
4mm	14,000	255	1,700	2,000	16,200	300	2,000	2,400	
5mm	11,000	255	1,700	2,000	13,000	300	2,000	2,400	
6mm	9,200	255	1,700	2,000	10,800	300	2,000	2,400	
8mm	7,000	255	1,700	2,000	8,100	300	2,000	2,400	
10mm	5,500	210	1,700	2,000	6,480	250	2,000	2,400	
12mm	4,400	170	1,700	2,000	5,400	200	2,000	2,400	
16mm	3,200	130	1,530	1,900	-	-	-	-	
20mm	2,000	85	1,360	1,700	-	-	-	-	
Milling Amount (mm)		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D		Ap=0.75D	Ap=0.75D	Ap=0.75D/ Ae=0.3D	
Depth of Cut									

3AKA, Square

2AKE

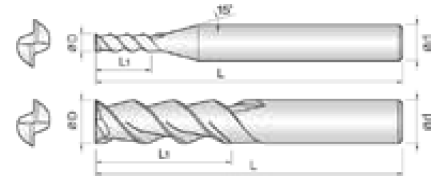
• RPM : rev/min • Feed : mm/min

Material	Aluminum Alloys / A7075 etc.				Aluminum Alloys / AC4B etc.			
	300m/min		240m/min		240m/min		200m/min	
	Side Milling		Solting		Side Milling		Solting	
Outside Diameter	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
1mm	34,000	500	34,000	400	34,000	400	34,000	300
2mm	34,000	950	32,300	720	32,300	720	27,200	470
3mm	27,200	1,200	21,300	800	21,300	800	18,000	510
4mm	20,400	1,300	16,000	850	16,000	850	14,000	550
5mm	16,200	1,400	13,000	850	13,000	850	11,000	600
6mm	13,600	1,600	11,000	940	11,000	940	9,400	640
8mm	10,200	1,600	8,000	1,000	8,000	1,000	6,800	680
10mm	8,100	1,600	6,500	1,000	6,500	1,000	5,400	680
12mm	6,800	1,600	5,400	1,000	5,400	1,000	4,500	680
16mm	5,100	1,600	4,100	1,000	4,100	1,000	3,400	610
20mm	4,100	1,300	3,200	850	3,200	850	2,700	560
Depth of Cut								

2 Flutes 45° Helix End Mills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Applied ultra fine WC grade(0.2μm) for excellent surface finish.
- Various flute length design for covering wide range application.
- Minimize built up edge by double edge and deep pocket design.



Size	D Tolerance
D ≤ Ø20	+0 ~ -0.01mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKE 010 025 S06	1	2.5	40	6
2AKE 010 035 S06	1	3.5	40	6
2AKE 010 050 S06	1	5	45	6
2AKE 015 040 S06	1.5	4	40	6
2AKE 015 060 S06	1.5	6	40	6
2AKE 015 080 S06	1.5	8	45	6
2AKE 020 050 S06	2	5	45	6
2AKE 020 070 S06	2	7	45	6
2AKE 020 100 S06	2	10	50	6
2AKE 020 120 S06	2	12	50	6
2AKE 025 080 S06	2.5	8	45	6
2AKE 025 120 S06	2.5	12	50	6
2AKE 030 080 S06	3	8	45	6
2AKE 030 100 S06	3	10	45	6
2AKE 030 120 S06	3	12	50	6
2AKE 030 150 S06	3	15	50	6
2AKE 030 200 S06	3	20	60	6
2AKE 035 100 S06	3.5	10	45	6
2AKE 035 150 S06	3.5	15	50	6
2AKE 040 120 S06	4	12	50	6
2AKE 040 150 S06	4	15	55	6
2AKE 040 180 S06	4	18	55	6
2AKE 040 250 S06	4	25	65	6
2AKE 045 120 S06	4.5	12	50	6
2AKE 045 180 S06	4.5	18	55	6
2AKE 050 150 S06	5	15	50	6
2AKE 050 200 S06	5	20	60	6
2AKE 050 250 S06	5	25	65	6
2AKE 055 150 S06	5.5	15	50	6
2AKE 060 150 S06	6	15	50	6
2AKE 060 200 S06	6	20	60	6
2AKE 060 250 S06	6	25	65	6
2AKE 070 200 S08	7	20	60	8
2AKE 070 300 S08	7	30	70	8

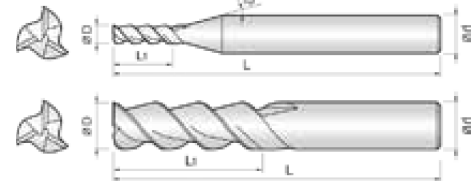
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AKE 080 200 S08	8	20	60	8
2AKE 080 250 S08	8	25	65	8
2AKE 080 300 S08	8	30	70	8
2AKE 080 400 S08	8	40	80	8
2AKE 100 250 S10	10	25	70	10
2AKE 100 300 S10	10	30	75	10
2AKE 100 350 S10	10	35	80	10
2AKE 100 450 S10	10	45	90	10
2AKE 120 300 S12	12	30	75	12
2AKE 120 350 S12	12	35	80	12
2AKE 120 400 S12	12	40	90	12
2AKE 120 500 S12	12	50	100	12
2AKE 140 300 S14	14	30	80	14
2AKE 160 400 S16	16	40	90	16
2AKE 160 550 S16	16	55	110	16
2AKE 160 700 S16	16	70	120	16
2AKE 200 450 S20	20	45	100	20
2AKE 200 650 S20	20	65	120	20
2AKE 200 800 S20	20	80	135	20

2AKE, Square

3 Flutes 45° Helix End Mills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Applied ultra fine WC grade(0.2 μ m) for excellent surface finish.
- Various flute length design for covering wide range application.
- Minimize built up edge by double edge and deep pocket design.



Size	D Tolerance
D \leq 20	+0 ~ -0.01mm

Unit : mm

3AKE, Square

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3AKE 010 015 S06	1	1.5	40	6
3AKE 010 030 S06	1	3	40	6
3AKE 010 050 S06	1	5	45	6
3AKE 015 025 S06	1.5	2.5	40	6
3AKE 015 040 S06	1.5	4	40	6
3AKE 015 060 S06	1.5	6	45	6
3AKE 015 080 S06	1.5	8	45	6
3AKE 020 030 S06	2	3	45	6
3AKE 020 050 S06	2	5	45	6
3AKE 020 070 S06	2	7	45	6
3AKE 020 100 S06	2	10	50	6
3AKE 020 120 S06	2	12	50	6
3AKE 025 040 S06	2.5	4	45	6
3AKE 025 080 S06	2.5	8	45	6
3AKE 025 120 S06	2.5	12	50	6
3AKE 030 045 S06	3	4.5	45	6
3AKE 030 080 S06	3	8	45	6
3AKE 030 120 S06	3	12	50	6
3AKE 030 150 S06	3	15	50	6
3AKE 030 200 S06	3	20	55	6
3AKE 030 250 S06	3	25	60	6
3AKE 030 300 S06	3	30	65	6
3AKE 035 055 S06	3.5	5.5	45	6
3AKE 035 100 S06	3.5	10	45	6
3AKE 035 150 S06	3.5	15	50	6
3AKE 040 060 S06	4	6	45	6
3AKE 040 110 S06	4	11	45	6
3AKE 040 160 S06	4	16	50	6
3AKE 040 200 S06	4	20	55	6
3AKE 040 250 S06	4	25	60	6
3AKE 040 300 S06	4	30	65	6
3AKE 045 120 S06	4.5	12	50	6
3AKE 045 180 S06	4.5	18	55	6
3AKE 050 075 S06	5	7.5	50	6
3AKE 050 130 S06	5	13	50	6
3AKE 050 200 S06	5	20	55	6
3AKE 050 250 S06	5	25	60	6
3AKE 050 300 S06	5	30	65	6
3AKE 055 150 S06	5.5	15	50	6
3AKE 060 090 050	6	9	50	6
3AKE 060 150 050	6	15	50	6

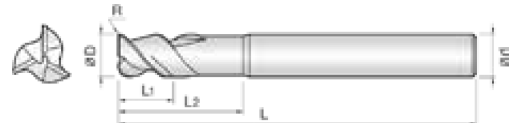
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3AKE 060 200 055	6	20	55	6
3AKE 060 250 060	6	25	60	6
3AKE 060 300 070	6	30	70	6
3AKE 080 120 060	8	12	60	8
3AKE 080 200 060	8	20	60	8
3AKE 080 250 065	8	25	65	8
3AKE 080 300 070	8	30	70	8
3AKE 080 350 075	8	35	75	8
3AKE 080 400 080	8	40	80	8
3AKE 080 450 090	8	45	90	8
3AKE 080 500 090	8	50	90	8
3AKE 080 550 100	8	55	100	8
3AKE 100 150 070	10	15	70	10
3AKE 100 250 070	10	25	70	10
3AKE 100 300 075	10	30	75	10
3AKE 100 350 080	10	35	80	10
3AKE 100 400 090	10	40	90	10
3AKE 100 450 090	10	45	90	10
3AKE 100 500 100	10	50	100	10
3AKE 100 550 100	10	55	100	10
3AKE 100 600 110	10	60	110	10
3AKE 100 650 110	10	65	110	10
3AKE 120 180 075	12	18	75	12
3AKE 120 260 075	12	26	75	12
3AKE 120 350 080	12	35	80	12
3AKE 120 400 090	12	40	90	12
3AKE 120 450 090	12	45	90	12
3AKE 120 500 100	12	50	100	12
3AKE 120 550 100	12	55	100	12
3AKE 120 650 110	12	65	110	12
3AKE 140 300 080	14	30	80	14
3AKE 140 450 110	14	45	110	14
3AKE 160 300 085	16	30	85	16
3AKE 160 500 110	16	50	110	16
3AKE 160 650 120	16	65	120	16
3AKE 160 800 130	16	80	130	16
3AKE 200 500 100	20	50	100	20
3AKE 200 750 130	20	75	130	20
3AKE 200 1000 160	20	100	160	20
3AKE 200 1300 200	20	130	200	20



3 Flutes 45° Helix Coner Radius End Mills for Aluminum

Endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Applied ultra fine WC grade(0.2 μ m) for excellent surface finish.
- Minimize built up edge by double edge and deep pocket design.
- High speed, feed applicable by 3 flute 45°degree helix and short flute design.



Size	D Tolerance
D ≤ \varnothing 6	+0 ~ -0.01mm
D > \varnothing 6	+0 ~ -0.015mm

Unit : mm

Order Number		Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
Non coated	Coated	D× R	L1	L2	L	d
R-3AKA060005050	R-3AKAD060005050	6 X R0.5	15	-	50	6
R-3AKA060005070	R-3AKAD060005070	6 X R0.5	7	20	70	6
R-3AKA060010050	R-3AKAD060010050	6 X R1	15	-	50	6
R-3AKA060010070	R-3AKAD060010070	6 X R1	7	20	70	6
R-3AKA080005060	R-3AKAD080005060	8 X R0.5	20	-	60	8
R-3AKA080005080	R-3AKAD080005080	8 X R0.5	9	25	80	8
R-3AKA080010060	R-3AKAD080010060	8 X R1	20	-	60	8
R-3AKA080010080	R-3AKAD080010080	8 X R1	9	25	80	8
R-3AKA080020060	R-3AKAD080020060	8 X R2	20	-	60	8
R-3AKA080020080	R-3AKAD080020080	8 X R2	9	25	80	8
R-3AKA080025080	R-3AKAD080025080	8 X R2.5	9	25	80	8
R-3AKA100010070	R-3AKAD100010070	10 X R1	25	-	70	10
R-3AKA100010100	R-3AKAD100010100	10 X R1	11	30	100	10
R-3AKA100015070	R-3AKAD100015070	10 X R1.5	25	-	70	10
R-3AKA100015100	R-3AKAD100015100	10 X R1.5	11	30	100	10
R-3AKA100020070	R-3AKAD100020070	10 X R2	25	-	70	10
R-3AKA100020100	R-3AKAD100020100	10 X R2	11	30	100	10
R-3AKA100025100	R-3AKAD100025100	10 X R2.5	11	30	100	10
R-3AKA120010075	R-3AKAD120010075	12 X R1	30	-	75	12
R-3AKA120010110	R-3AKAD120010110	12 X R1	13	36	110	12
R-3AKA120015110	R-3AKAD120015110	12 X R1.5	13	36	110	12
R-3AKA120020075	R-3AKAD120020075	12 X R2	30	-	75	12
R-3AKA120020110	R-3AKAD120020110	12 X R2	13	36	110	12
R-3AKA120025110	R-3AKAD120025110	12 X R2.5	13	36	110	12
R-3AKA120030075	R-3AKAD120030075	12 X R3	30	-	75	12
R-3AKA120030110	R-3AKAD120030110	12 X R3	13	36	110	12
R-3AKA120040075	R-3AKAD120040075	12 X R4	30	-	75	12
R-3AKA120040110	R-3AKAD120040110	12 X R4	13	36	110	12
R-3AKA160010090	R-3AKAD160010090	16 X R1	35	-	90	16
R-3AKA160010130	R-3AKAD160010130	16 X R1	17	50	130	16
R-3AKA160020090	R-3AKAD160020090	16 X R2	35	-	90	16
R-3AKA160020130	R-3AKAD160020130	16 X R2	17	50	130	16
R-3AKA160025130	R-3AKAD160025130	16 X R2.5	17	50	130	16
R-3AKA160030090	R-3AKAD160030090	16 X R3	35	-	90	16
R-3AKA160030130	R-3AKAD160030130	16 X R3	17	50	130	16
R-3AKA60040090	R-3AKAD160040090	16 X R4	35	-	90	16
R-3AKA60040130	R-3AKAD160040130	16 X R4	17	50	130	16
R-3AKA60050090	R-3AKAD160050090	16 X R5	35	-	90	16
R-3AKA00020150	R-3AKAD200020150	20 X R2	21	60	150	20
R-3AKA00025150	R-3AKAD200025150	20 X R2.5	21	60	150	20
R-3AKA00030150	R-3AKAD200030150	20 X R3	21	60	150	20
R-3AKA00040150	R-3AKAD200040150	20 X R4	21	60	150	20

R-3AKA, Corner

R-3AKA

• RPM : rev./min • Feed : mm/min

Material	Side Cutting		Slotting	
	Aluminum Alloys / A7075 etc.		Aluminum Alloys / A7075 etc.	
Outside Diameter	RPM	FEED	RPM	FEED
6mm	20,000	8,400	20,000	6,600
8mm	18,000	7,500	18,000	5,400
10mm	15,000	6,000	15,000	4,000
12mm	13,000	5,400	13,000	3,200
16mm	10,000	5,400	10,000	3,200
20mm	8,000	5,000	8,000	3,000

Depth of Cut	<p>$h \leq 0.3D$ $h \leq 0.8D$ D: Outside Diameter</p>	<p>$h \leq 0.5D$ D: Outside Diameter</p>
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K-A ALUMINUM 3ARR

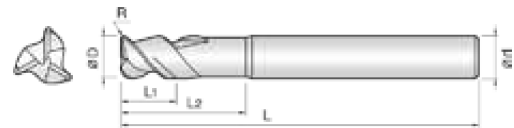


3ARR, Corner

3 Flutes Semi-Finishing & Roughing Corner Radius End Mills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Minimize built up edge by chip braker and deep pocket design.
- Good surface integrity differently from competitor's AL roughing endmills.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



Size	D Tolerance
D ≤ Ø20	+0 ~ -0.03mm


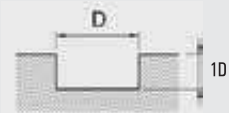
Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D × R	L1	L2	L	d
3ARR 060 005 S06	6 X R0.5	9	15	65	6
3ARR 060 010 S06	6 X R1	9	15	65	6
3ARR 080 005 S08	8 X R0.5	12	20	70	8
3ARR 080 010 S08	8 X R1	12	20	70	8
3ARR 100 010 S10	10 X R1	15	25	75	10
3ARR 100 020 S10	10 X R2	15	25	75	10
3ARR 120 010 S12	12 X R1	20	30	80	12
3ARR 120 020 S12	12 X R2	20	30	80	12
3ARR 120 030 S12	12 X R3	20	30	80	12
3ARR 160 010 S16	16 X R1	25	35	110	16
3ARR 160 020 S16	16 X R2	25	35	110	16
3ARR 160 030 S16	16 X R3	25	35	110	16
3ARR 200 020 S20	20 X R2	30	50	110	20
3ARR 200 030 S20	20 X R3	30	50	110	20

3ARM/3ARR

• RPM : rev./min • Feed : mm/min

Material	Copper		Aluminum	
Speed	80m/min		80 ~ 150m/min	
Outside Diameter	RPM	FEED	RPM	FEED
6mm	4,200	320	8,000	1,200
8mm	3,200	320	6,000	1,200
10mm	2,600	320	4,800	1,200
12mm	2,100	320	4,000	1,200
16mm	1,600	320	3,000	1,200
20mm	1,300	320	2,400	1,200

Depth of Cut		
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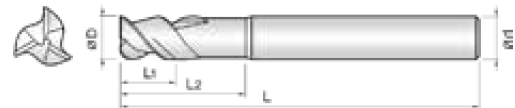
K-A ALUMINUM 3ARM



3 Flutes Semi-Finishing & Roughing End Mills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Minimize built up edge by chip braker and deep pocket design.
- Good surface integrity differently from competitor's AL roughing endmills.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



Size	D Tolerance
$D \leq \varnothing 20$	+0 ~ -0.03mm

Unit : mm

3ARM, Corner

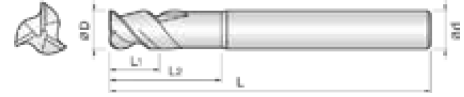
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
3ARM 060 150 S06	6	10	15	50	6
3ARM 060 200 S06	6	15	20	70	6
3ARM 080 200 S08	8	15	20	60	8
3ARM 080 250 S08	8	20	25	80	8
3ARM 100 250 S10	10	18	25	70	10
3ARM 100 300 S10	10	23	30	90	10
3ARM 120 300 S12	12	20	30	80	12
3ARM 120 400 S12	12	30	40	100	12
3ARM 160 350 S16	16	25	35	110	16
3ARM 160 500 S16	16	35	50	120	16
3ARM 200 500 S20	20	35	50	110	20
3ARM 200 600 S20	20	45	60	120	20



3 Flutes 45° Helix Roughing End Mills for Aluminum

High speed semi finishing and roughing endmills for Aluminum, AL alloy, non-ferrous and non-metallic materials.

- Minimize built up edge by chip braker and deep pocket design.
- High speed roughing applicable by 45°helix fine pitch flute.
- Minimize fracturing at high feed by high TRS ultra fine WC grade.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.02mm
D > Ø6	-0.02 ~ -0.05mm

Unit : mm

Order Number		Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
Non coated	Coated	D	L1	L2	L	d
3ARH 040 150 S06	3ARHD 040 150 S06	4	10	15	60	6
3ARH 050 200 S06	3ARHD 050 200 S06	5	15	20	60	6
3ARH 060 210 S06	3ARHD 060 210 S06	6	16	21	65	6
3ARH 080 270 S08	3ARHD 080 270 S08	8	21	27	70	8
3ARH 100 310 S10	3ARHD 100 310 S10	10	26	31	75	10
3ARH 120 380 S12	3ARHD 120 380 S12	12	30	38	80	12
3ARH 160 450 S16	3ARHD 160 450 S16	16	36	45	100	16
3ARH 200 550 S20	3ARHD 200 550 S20	20	41	55	110	20

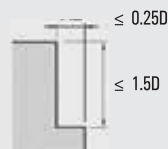
3ARH, Corner

3ARH

• RPM : rev./min • Feed : mm/min

Material	Side Cutting			
	Aluminum Alloys / A7075 etc.		Aluminum Alloys / AC4B etc.	
Outside Diameter	RPM	FEED	RPM	FEED
4mm	30,000	4,200	16,000	1,800
5mm	27,000	4,900	14,400	2,000
6mm	24,300	5,500	11,700	2,100
8mm	18,000	5,400	9,000	2,200
10mm	14,400	5,200	7,200	2,100
12mm	11,700	4,800	5,900	1,900
16mm	9,000	4,600	4,500	1,800
20mm	7,200	4,300	3,600	1,700

Depth of Cut

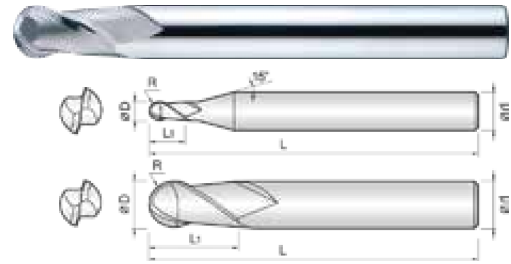




2 Flutes Ball End Mills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Improve tool performance by even run-out and tolerance control.
- Very nice work surface finish.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
2ABE 001 002 S03	0.05R X 0.1	0.2	38	3
2ABE 0015 003 S03	0.075R X 0.15	0.3	38	3
2ABE 002 004 S03	0.1R X 0.2	0.4	38	3
2ABE 003 006 S03	0.15R X 0.3	0.6	38	3
2ABE 004 008 S03	0.2R X 0.4	0.8	38	3
2ABE 005 010 S03	0.25R X 0.5	1	38	3
2ABE 006 012 S03	0.3R X 0.6	1.2	38	3
2ABE 007 014 S03	0.35R X 0.7	1.4	38	3
2ABE 008 016 S03	0.4R X 0.8	1.6	38	3
2ABE 009 018 S03	0.45R X 0.9	1.8	38	3
2ABE 010 025 S03	0.5R X 1	2.5	50	3
2ABE 010 025 S06	0.5R X 1	2.5	50	6
2ABE 010 025 100	0.5R X 1	2.5	100	6
2ABE 011 025 S03	0.55R X 1.1	2.5	50	3
2ABE 012 030 S03	0.6R X 1.2	3	50	3
2ABE 015 040 S03	0.75R X 1.5	4	50	3
2ABE 015 040 100	0.75R X 1.5	4	100	6
2ABE 020 050 S03	1R X 2	5	50	3
2ABE 020 050 S06	1R X 2	5	50	6
2ABE 020 050 100	1R X 2	5	100	6
2ABE 025 060 S03	1.25R X 2.5	6	50	3
2ABE 025 060 100	1.25R X 2.5	6	100	6
2ABE 030 080 S03	1.5R X 3	8	60	3
2ABE 030 080 S06	1.5R X 3	8	60	6
2ABE 030 080 100	1.5R X 3	8	100	6
2ABE 035 080 S06	1.75R X 3.5	8	65	6
2ABE 040 080 S06	2R X 4	8	70	6
2ABE 040 080 120	2R X 4	8	120	6
2ABE 050 120 S06	2.5R X 5	12	75	6
2ABE 060 120 080	3R X 6	12	80	6
2ABE 060 120 100	3R X 6	12	100	6
2ABE 080 140 090	4R X 8	14	90	8
2ABE 080 140 110	4R X 8	14	110	8
2ABE 100 180 100	5R X 10	18	100	10
2ABE 100 180 120	5R X 10	18	120	10
2ABE 120 220 110	6R X 12	22	110	12
2ABE 120 220 130	6R X 12	22	130	12

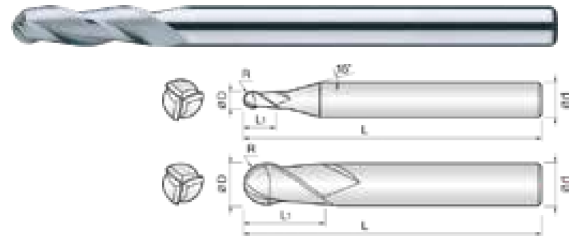
2ABE, Ball



3 Flutes Ball End Mills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Minimize chattering by short flute design.
- Very nice work surface finish.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	R×D	L1	L	d
3ABE 003 008 S04	0.15R X 0.3	0.8	40	4
3ABE 003 012 S04	0.15R X 0.3	1.2	40	4
3ABE 004 010 S04	0.2R X 0.4	1	40	4
3ABE 004 015 S04	0.2R X 0.4	1.5	40	4
3ABE 005 013 S04	0.25R X 0.5	1.3	45	4
3ABE 005 020 S04	0.25R X 0.5	2	45	4
3ABE 006 015 S04	0.3R X 0.6	1.5	45	4
3ABE 006 024 S04	0.3R X 0.6	2.4	45	4
3ABE 007 018 S04	0.35R X 0.7	1.8	45	4
3ABE 007 028 S04	0.35R X 0.7	2.8	45	4
3ABE 008 020 S04	0.4R X 0.8	2	45	4
3ABE 008 032 S04	0.4R X 0.8	3.2	45	4
3ABE 009 025 S04	0.45R X 0.9	2.5	50	4
3ABE 009 036 S04	0.45R X 0.9	3.6	50	4
3ABE 010 025 S04	0.5R X 1	2.5	50	4
3ABE 010 040 S04	0.5R X 1	4	50	4
3ABE 010 060 S04	0.5R X 1	6	60	4
3ABE 012 030 S04	0.6R X 1.2	3	50	4
3ABE 012 050 S04	0.6R X 1.2	5	50	4
3ABE 012 070 S04	0.6R X 1.2	7	60	4
3ABE 015 040 S04	0.75R X 1.5	4	50	4
3ABE 015 060 S04	0.75R X 1.5	6	50	4
3ABE 015 090 S04	0.75R X 1.5	9	60	4
3ABE 020 050 S04	1R X 2	5	50	4
3ABE 020 080 S04	1R X 2	8	50	4
3ABE 020 100 S04	1R X 2	10	60	4
3ABE 025 060 S04	1.25R X 2.5	6	50	4
3ABE 025 100 S04	1.25R X 2.5	10	60	4
3ABE 025 150 S04	1.25R X 2.5	15	70	4
3ABE 030 080 S04	1.5R X 3	8	50	4
3ABE 030 120 S04	1.5R X 3	12	60	4
3ABE 030 150 S04	1.5R X 3	15	80	4
3ABE 040 100 S04	2R X 4	10	60	4
3ABE 040 150 S04	2R X 4	15	80	4
3ABE 060 200 S06	3R X 6	20	80	6
3ABE 060 300 S06	3R X 6	30	110	6

3ABE, Ball

Material	Carbon/ Alloy steels/ Prehardened Steels S50C / SCM / SKD / SUS / HPM / NAK		Carbon Steels S50C		Alloy steels SCM / SKD / SUS		Prehardened Steels HPM / NAK	
	R < 1				R > 1			
Speed	50m/min		80m/min		70m/min		60m/min	
Radius	RPM	FEED	RPM	FEED	RPM	FEED	RPM	FEED
R0.2	36,000	630	-	-	-	-	-	-
R0.3	24,300	675	-	-	-	-	-	-
R0.4	11,800	780	-	-	-	-	-	-
R0.5	12,000	780	-	-	-	-	-	-
R0.6	10,200	780	-	-	-	-	-	-
R0.75	9,000	780	-	-	-	-	-	-
R1	-	-	11,400	630	10,000	520	8,700	400
R1.5	-	-	7,700	630	6,700	520	5,800	400
R2	-	-	5,800	630	5,000	520	4,300	400
R3	-	-	3,800	630	3,300	520	2,900	400
R4	-	-	2,900	630	2,500	520	2,200	400
R5	-	-	2,300	630	2,000	520	1,700	400
R6	-	-	1,900	630	1,700	520	1,400	400
Depth of Cut								

3ABE, Ball

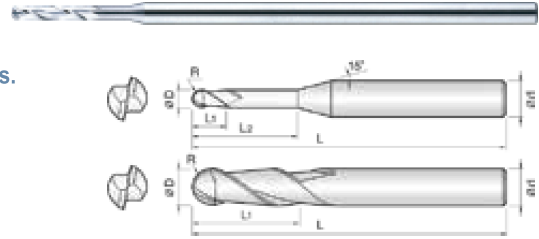


0.1R~3R 4R~8R

2 Flutes Micro Long Ball End Mills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Improve tool performance by even run-out and tolerance control.
- Long flute helps chip control in deep groove machining.



Size	D Tolerance
D ≤ Ø6	+0 ~ -0.01mm
D > Ø6	+0 ~ -0.015mm

Unit : mm

2SLB, Ball

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SLB 002 010 S03	0.1R X 0.2	0.4	1	40	3
2SLB 002 015 S03	0.1R X 0.2	0.4	1.5	40	3
2SLB 002 020 S03	0.1R X 0.2	0.4	2	40	3
2SLB 003 010 S03	0.15R X 0.3	1	-	45	3
2SLB 003 015 S03	0.15R X 0.3	1	1.5	45	3
2SLB 003 018 S03	0.15R X 0.3	1.8	-	45	3
2SLB 003 020 S03	0.15R X 0.3	1	2	45	3
2SLB 003 025 S03	0.15R X 0.3	1	2.5	45	3
2SLB 003 030 S03	0.15R X 0.3	1	3	45	3
2SLB 003 040 S03	0.15R X 0.3	1	4	45	3
2SLB 004 012 S03	0.2R X 0.4	1.2	-	45	3
2SLB 004 020 S03	0.2R X 0.4	2	-	45	3
2SLB 004 030 S03	0.2R X 0.4	1.2	3	45	3
2SLB 004 040 S03	0.2R X 0.4	1.2	4	45	3
2SLB 004 050 S03	0.2R X 0.4	1.2	5	45	3
2SLB 005 015 S03	0.25R X 0.5	1.5	-	50	3
2SLB 005 020 S03	0.25R X 0.5	2	-	50	3
2SLB 005 030 S03	0.25R X 0.5	1.5	3	50	3
2SLB 005 040 S03	0.25R X 0.5	1.5	4	50	3
2SLB 005 050 S03	0.25R X 0.5	1.5	5	50	3
2SLB 005 060 S03	0.25R X 0.5	1.5	6	50	3
2SLB 005 080 S03	0.25R X 0.5	1.5	8	50	3
2SLB 005 100 S03	0.25R X 0.5	1.5	10	50	3
2SLB 006 030 S03	0.3R X 0.6	3	-	50	3
2SLB 006 060 S03	0.3R X 0.6	3	6	50	3
2SLB 006 080 S03	0.3R X 0.6	3	8	50	3
2SLB 006 100 S03	0.3R X 0.6	3	10	50	3
2SLB 007 030 S03	0.35R X 0.7	3	-	50	3
2SLB 007 070 S03	0.35R X 0.7	3	7	50	3
2SLB 007 100 S03	0.35R X 0.7	3	10	50	3
2SLB 007 120 S03	0.35R X 0.7	3	12	50	3
2SLB 008 040 S03	0.4R X 0.8	4	-	50	3
2SLB 008 080 S03	0.4R X 0.8	4	8	50	3
2SLB 008 100 S03	0.4R X 0.8	4	10	50	3
2SLB 008 120 S03	0.4R X 0.8	4	12	50	3
2SLB 009 040 S03	0.45R X 0.9	4	-	50	3
2SLB 009 060 S03	0.45R X 0.9	4	6	50	3
2SLB 009 080 S03	0.45R X 0.9	4	8	50	3

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SLB 009 100 S03	0.45R X 0.9	4	10	50	3
2SLB 010 050 S03	0.5R X 1	5	-	80	3
2SLB 010 050 S04	0.5R X 1	5	-	80	4
2SLB 010 100 S03	0.5R X 1	5	10	80	3
2SLB 010 100 S04	0.5R X 1	5	10	80	4
2SLB 010 150 S03	0.5R X 1	5	15	80	3
2SLB 010 150 S04	0.5R X 1	5	15	80	4
2SLB 010 200 S03	0.5R X 1	5	20	80	3
2SLB 010 200 S04	0.5R X 1	5	20	80	4
2SLB 010 250 S03	0.5R X 1	5	25	80	3
2SLB 010 250 S04	0.5R X 1	5	25	80	4
2SLB 010 300 S03	0.5R X 1	5	30	80	3
2SLB 010 300 S04	0.5R X 1	5	30	80	4
2SLB 010 350 S04	0.5R X 1	5	35	100	4
2SLB 010 400 S04	0.5R X 1	5	40	100	4
2SLB 015 100 S03	0.75R X 1.5	10	-	80	3
2SLB 015 100 S04	0.75R X 1.5	10	-	80	4
2SLB 015 150 S03	0.75R X 1.5	10	15	80	3
2SLB 015 150 S04	0.75R X 1.5	10	15	80	4
2SLB 015 200 S03	0.75R X 1.5	10	20	80	3
2SLB 015 200 S04	0.75R X 1.5	10	20	80	4
2SLB 015 250 S03	0.75R X 1.5	10	25	80	3
2SLB 015 250 S04	0.75R X 1.5	10	25	80	4
2SLB 015 300 S03	0.75R X 1.5	10	30	80	3
2SLB 015 300 S04	0.75R X 1.5	10	30	80	4
2SLB 015 350 S04	0.75R X 1.5	10	35	100	4
2SLB 015 400 S04	0.75R X 1.5	10	40	100	4
2SLB 020 100 S03	1R X 2	10	-	80	3
2SLB 020 100 S04	1R X 2	10	-	80	4
2SLB 020 150 S03	1R X 2	10	15	80	3
2SLB 020 150 S04	1R X 2	10	15	80	4
2SLB 020 200 S03	1R X 2	10	20	80	3
2SLB 020 200 S04	1R X 2	10	20	80	4
2SLB 020 250 S03	1R X 2	10	25	80	3
2SLB 020 250 S04	1R X 2	10	25	80	4
2SLB 020 300 S03	1R X 2	10	30	80	3
2SLB 020 300 S04	1R X 2	10	30	80	4
2SLB 020 350 S03	1R X 2	10	35	80	3

Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SLB 020 350 S04	1R X 2	10	35	100	4
2SLB 020 400 S03	1R X 2	10	40	80	3
2SLB 020 400 S04	1R X 2	10	40	100	4
2SLB 025 100 S03	1.25R X 2.5	10	-	80	3
2SLB 025 150 S03	1.25R X 2.5	15	-	80	3
2SLB 025 200 S03	1.25R X 2.5	15	20	80	3
2SLB 030 100 060	1.5R X 3	10	-	60	3
2SLB 030 200 080	1.5R X 3	20	-	80	3
2SLB 030 200 100	1.5R X 3	20	-	100	3
2SLB 030 200 120	1.5R X 3	20	-	120	3
2SLB 030 150 S06	1.5R X 3	15	-	100	6
2SLB 030 200 S06	1.5R X 3	15	20	100	6
2SLB 030 250 S06	1.5R X 3	15	25	100	6
2SLB 030 300 S06	1.5R X 3	15	30	100	6
2SLB 030 400 S06	1.5R X 3	15	40	100	6
2SLB 040 200 080	2R X 4	20	-	80	4
2SLB 040 200 100	2R X 4	20	-	100	4
2SLB 040 200 130	2R X 4	20	-	130	4
2SLB 040 200 S06	2R X 4	20	-	100	6
2SLB 040 250 S06	2R X 4	20	25	100	6
2SLB 040 300 S06	2R X 4	20	30	100	6
2SLB 040 400 S06	2R X 4	20	40	120	6

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	R×D	L1	L2	L	d
2SLB 040 500 S06	2R X 4	20	50	120	6
2SLB 050 300 100	2.5R X 5	30	-	100	5
2SLB 050 300 120	2.5R X 5	30	-	120	5
2SLB 060 300 080	3R X 6	30	-	80	6
2SLB 060 400 100	3R X 6	40	-	100	6
2SLB 060 400 120	3R X 6	40	-	120	6
2SLB 060 400 150	3R X 6	40	-	150	6
2SLB 080 450 120	4R X 8	45	-	120	8
2SLB 080 450 150	4R X 8	45	-	150	8
2SLB 100 500 120	5R X 10	50	-	120	10
2SLB 100 500 150	5R X 10	50	-	150	10
2SLB 120 550 130	6R X 12	55	-	130	12
2SLB 120 550 150	6R X 12	55	-	150	12
2SLB 160 700 160	8R X 16	70	-	160	16

2ALB

• RPM : rev/min • Feed : mm/min

2SLB, Ball

Material	ABS / Acrylic	
Outside Diameter	RPM	FEED
R0.1	37,000	50
R0.2	37,000	100
R0.3	37,000	140
R0.4	37,000	190
R0.5	32,000	210
R1	16,000	210
R1.5	11,000	210
R2	8,200	210
R2.5	6,000	250
R3	5,500	250
R4	4,100	280
R5	3,200	280
R6	2,700	330
R8	2,200	330

Depth of Cut	
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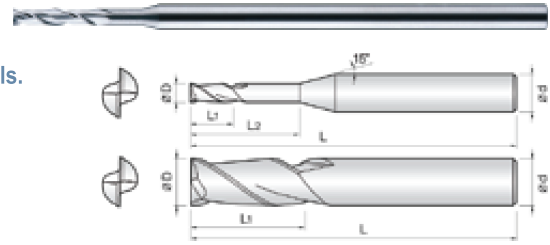
Ø0.2~Ø5 Ø6~Ø16

Sharp Edge

2 Flutes Micro Long End Mills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Improve tool performance by even run-out and tolerance control.
- Long flute helps chip control in deep groove machining.
- Reinforced edge design for preventing edge chipping.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.01mm
D > Ø5	+0 ~ -0.02mm

Unit : mm

2SLE, Square

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SLE 002 010 S03	0.2	0.4	1	40	3
2SLE 002 015 S03	0.2	0.4	1.5	40	3
2SLE 002 020 S03	0.2	0.4	2	40	3
2SLE 003 010 S03	0.3	1	-	45	3
2SLE 003 015 S03	0.3	1	1.5	45	3
2SLE 003 018 S03	0.3	1.8	-	45	3
2SLE 003 020 S03	0.3	1	2	45	3
2SLE 003 025 S03	0.3	1	2.5	45	3
2SLE 003 030 S03	0.3	1	3	45	3
2SLE 003 040 S03	0.3	1	4	45	3
2SLE 004 012 S03	0.4	1.2	-	45	3
2SLE 004 020 S03	0.4	2	-	45	3
2SLE 004 030 S03	0.4	1.2	3	45	3
2SLE 004 040 S03	0.4	1.2	4	45	3
2SLE 004 050 S03	0.4	1.2	5	45	3
2SLE 005 015 S03	0.5	1.5	-	50	3
2SLE 005 020 S03	0.5	2	-	50	3
2SLE 005 030 S03	0.5	1.5	3	50	3
2SLE 005 040 S03	0.5	1.5	4	50	3
2SLE 005 050 S03	0.5	1.5	5	50	3
2SLE 005 060 S03	0.5	1.5	6	50	3
2SLE 005 080 S03	0.5	1.5	8	50	3
2SLE 005 100 S03	0.5	1.5	10	50	3
2SLE 006 030 S03	0.6	3	-	50	3
2SLE 006 060 S03	0.6	3	6	50	3
2SLE 006 080 S03	0.6	3	8	50	3
2SLE 006 100 S03	0.6	3	10	50	3
2SLE 007 030 S03	0.7	3	-	50	3
2SLE 007 070 S03	0.7	3	7	50	3
2SLE 007 100 S03	0.7	3	10	50	3
2SLE 007 120 S03	0.7	3	12	50	3
2SLE 008 040 S03	0.8	4	-	50	3
2SLE 008 080 S03	0.8	4	8	50	3
2SLE 008 100 S03	0.8	4	10	50	3
2SLE 008 120 S03	0.8	4	12	50	3
2SLE 009 040 S03	0.9	4	-	50	3
2SLE 009 060 S03	0.9	4	6	50	3
2SLE 009 080 S03	0.9	4	8	50	3
2SLE 009 100 S03	0.9	4	10	50	3

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SLE 010 050 S03	1	5	-	80	3
2SLE 010 050 S04	1	5	-	80	4
2SLE 010 100 S03	1	5	10	80	3
2SLE 010 100 S04	1	5	10	80	4
2SLE 010 150 S03	1	5	15	80	3
2SLE 010 150 S04	1	5	15	80	4
2SLE 010 200 S03	1	5	20	80	3
2SLE 010 200 S04	1	5	20	80	4
2SLE 010 250 S03	1	5	25	80	3
2SLE 010 250 S04	1	5	25	80	4
2SLE 010 300 S03	1	5	30	80	3
2SLE 010 300 S04	1	5	30	80	4
2SLE 010 350 S04	1	5	35	100	4
2SLE 010 400 S04	1	5	40	100	4
2SLE 015 100 S03	1.5	10	-	80	3
2SLE 015 100 S04	1.5	10	-	80	4
2SLE 015 150 S03	1.5	10	15	80	3
2SLE 015 150 S04	1.5	10	15	80	4
2SLE 015 200 S03	1.5	10	20	80	3
2SLE 015 200 S04	1.5	10	20	80	4
2SLE 015 250 S03	1.5	10	25	80	3
2SLE 015 250 S04	1.5	10	25	80	4
2SLE 015 300 S03	1.5	10	30	80	3
2SLE 015 300 S04	1.5	10	30	80	4
2SLE 015 350 S04	1.5	10	35	100	4
2SLE 015 400 S04	1.5	10	40	100	4
2SLE 020 100 S03	2	10	-	80	3
2SLE 020 100 S04	2	10	-	80	4
2SLE 020 150 S03	2	10	15	80	3
2SLE 020 150 S04	2	10	15	80	4
2SLE 020 200 S03	2	10	20	80	3
2SLE 020 200 S04	2	10	20	80	4
2SLE 020 250 S03	2	10	25	80	3
2SLE 020 250 S04	2	10	25	80	4
2SLE 020 300 S03	2	10	30	80	3
2SLE 020 300 S04	2	10	30	80	4
2SLE 020 350 S03	2	10	35	80	3
2SLE 020 350 S04	2	10	35	100	4
2SLE 020 400 S03	2	10	40	80	3



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Unit : mm

Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SLE 020 400 S04	2	10	40	100	4
2SLE 025 100 S03	2.5	10	-	80	3
2SLE 025 150 S03	2.5	15	-	80	3
2SLE 025 200 S03	2.5	15	20	80	3
2SLE 030 100 060	3	10	-	60	3
2SLE 030 200 080	3	20	-	80	3
2SLE 030 200 100	3	20	-	100	3
2SLE 030 200 120	3	20	-	120	3
2SLE 030 150 S06	3	15	-	100	6
2SLE 030 200 S06	3	15	20	100	6
2SLE 030 250 S06	3	15	25	100	6
2SLE 030 300 S06	3	15	30	100	6
2SLE 040 200 080	4	20	-	80	4
2SLE 040 200 100	4	20	-	100	4
2SLE 040 200 130	4	20	-	130	4
2SLE 040 200 S06	4	20	-	100	6
2SLE 040 250 S06	4	20	25	100	6
2SLE 040 300 S06	4	20	30	100	6
2SLE 040 400 S06	4	20	40	120	6
2SLE 050 200 S06	5	20	-	100	6
2SLE 050 300 100	5	30	-	100	5
2SLE 050 300 120	5	30	-	120	5

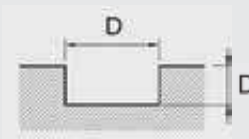
Order Number	Diameter	Length of cut	Effective Length	Overall Length	Shank Dia
	D	L1	L2	L	d
2SLE 060 250 080	6	25	-	80	6
2SLE 060 300 080	6	30	-	80	6
2SLE 060 400 100	6	40	-	100	6
2SLE 060 400 120	6	40	-	120	6
2SLE 060 400 150	6	40	-	150	6
2SLE 080 300 080	8	30	-	80	8
2SLE 080 350 090	8	35	-	90	8
2SLE 080 400 100	8	40	-	100	8
2SLE 080 450 120	8	45	-	120	8
2SLE 080 450 150	8	45	-	150	8
2SLE 100 300 080	10	30	-	80	10
2SLE 100 350 090	10	35	-	90	10
2SLE 100 400 100	10	40	-	100	10
2SLE 100 500 120	10	50	-	120	10
2SLE 100 500 150	10	50	-	150	10
2SLE 120 300 090	12	30	-	90	12
2SLE 120 400 100	12	40	-	100	12
2SLE 120 500 110	12	50	-	110	12
2SLE 120 550 130	12	55	-	130	12
2SLE 120 550 150	12	55	-	150	12
2SLE 160 700 160	16	70	-	160	16

2SLE

• RPM : rev./min • Feed : mm/min

Material	ABS/ Acrylic	
Outside Diameter	RPM	FEED
0.2mm	50,000	100
0.4mm	50,000	200
0.5mm	50,000	240
0.6mm	40,000	240
0.8mm	30,000	240
1mm	24,000	240
2mm	12,000	240
3mm	8,000	240
4mm	6,000	240
5mm	4,800	240
6mm	4,000	260
8mm	3,000	260
10mm	3,000	260
12mm	2,000	260
16mm	1,400	260

Depth of Cut



2SLE, Square



Ø0.2~Ø5 Ø6~Ø12

Sharp Edge

1 Flute End Mills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Excellent chip removing by a helix flute design.
- Optimum for cut-off and wall machining.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.02mm
D > Ø5	+0 ~ -0.03mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1AEM 002 005 S04	0.2	0.5	40	4
1AEM 003 009 S04	0.3	0.9	40	4
1AEM 004 012 S04	0.4	1.2	40	4
1AEM 005 015 S04	0.5	1.5	40	4
1AEM 006 018 S04	0.6	1.8	40	4
1AEM 007 021 S04	0.7	2.1	40	4
1AEM 008 024 S04	0.8	2.4	40	4
1AEM 009 027 S04	0.9	2.7	40	4
1AEM 010 030 S06	1	3	45	6
1AEM 010 045 S06	1	4.5	45	6
1AEM 010 060 S06	1	6	50	6
1AEM 012 030 S06	1.2	3	45	6
1AEM 012 050 S06	1.2	5	45	6
1AEM 012 060 S06	1.2	6	50	6
1AEM 015 040 S06	1.5	4	45	6
1AEM 015 060 S06	1.5	6	50	6
1AEM 015 080 S06	1.5	8	50	6
1AEM 020 060 S06	2	6	50	6
1AEM 020 080 S06	2	8	50	6
1AEM 020 100 S06	2	10	50	6
1AEM 030 080 S06	3	8	50	6
1AEM 030 120 S06	3	12	50	6
1AEM 030 150 S06	3	15	50	6
1AEM 040 100 S06	4	10	50	6
1AEM 040 150 S06	4	15	50	6
1AEM 040 200 S06	4	20	60	6
1AEM 050 130 S06	5	13	60	6
1AEM 050 200 S06	5	20	60	6
1AEM 050 250 S06	5	25	60	6
1AEM 060 150 S06	6	15	60	6
1AEM 060 200 S06	6	20	60	6
1AEM 060 250 S06	6	25	60	6
1AEM 080 190 S08	8	19	70	8
1AEM 080 250 S08	8	25	75	8
1AEM 100 220 S10	10	22	75	10
1AEM 100 300 S10	10	30	80	10
1AEM 120 260 S12	12	26	75	12
1AEM 120 350 S12	12	35	90	12

1AEM, Square



Ø1~Ø6 Ø6~Ø8

Sharp Edge

1 Flute Reverse Edge End Mills

Endmills for Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Downward chip direction by reverse helix design helps chip control.
- No burr in work materials.
- Optimum for unstable work clamping.



Size	D Tolerance
D ≤ Ø5	+0 ~ -0.02mm
D > Ø5	+0 ~ -0.03mm

Unit : mm

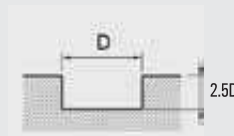
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
1ARM 010 030 S06	1	3	50	6
1ARM 010 060 S06	1	6	60	6
1ARM 020 060 S06	2	6	60	6
1ARM 020 080 S06	2	8	60	6
1ARM 030 080 S06	3	8	60	6
1ARM 030 120 S06	3	12	65	6
1ARM 040 120 S06	4	12	65	6
1ARM 040 160 S06	4	16	70	6
1ARM 040 160 S06	5	22	75	6
1ARM 050 220 S06	6	27	75	6
1ARM 060 270 S06	8	32	90	8
1ARM 080 320 S08				

1AEM/1ARM

• RPM : rev./min • Feed : mm/min

Material	Acrylic		Alloy Steels	
	Outside Diameter	RPM	FEED	RPM
1mm	32,000	2,000	23,000	1,300
2mm	32,000	2,200	23,000	1,500
3mm	25,000	2,400	18,000	1,700
4mm	20,000	2,400	15,000	1,800
5mm	15,000	2,200	12,000	1,800
6mm	13,500	2,300	10,000	1,800
8mm	10,000	2,400	7,800	1,900
10mm	8,000	2,400	6,000	2,000
12mm	7,000	2,200	5,000	1,900

Depth of Cut



1 ARM, Square



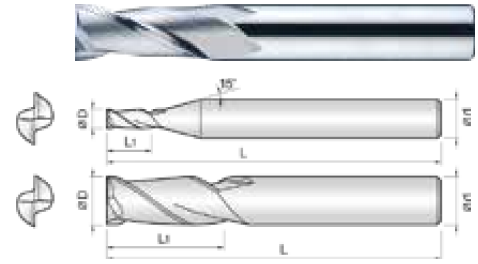
00.1 ~ 0.9 0.1 ~ 0.5 0.6 ~ 0.12

Sharp Edge

2 Flutes End Mills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Reinforced edge design for preventing edge chipping.
- Improve tool performance by even run-out and tolerance control.



Size	D Tolerance
D < Ø1	+0 ~ -0.01mm
D ≤ Ø5	+0 ~ -0.015mm
D > Ø5	+0 ~ -0.02mm

Unit : mm

2ARM, Square

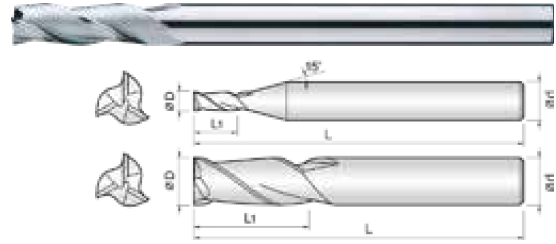
Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
2AEM 001 002 S03	0.1	0.2	40	3
2AEM 0015 003 S03	0.15	0.3	40	3
2AEM 002 004 S03	0.2	0.4	40	3
2AEM 003 006 S03	0.3	0.6	40	3
2AEM 004 008 S03	0.4	0.8	40	3
2AEM 005 010 S03	0.5	1	40	3
2AEM 006 012 S03	0.6	1.2	40	3
2AEM 007 014 S03	0.7	1.4	40	3
2AEM 008 016 S03	0.8	1.6	40	3
2AEM 009 018 S03	0.9	1.8	40	3
2AEM 010 025 S03	1	2.5	40	3
2AEM 010 025 S06	1	2.5	40	6
2AEM 011 025 S03	1.1	2.5	40	3
2AEM 012 035 S03	1.2	3.5	40	3
2AEM 013 040 S03	1.3	4	40	3
2AEM 014 040 S03	1.4	4	40	3
2AEM 015 040 S06	1.5	4	40	3
2AEM 015 040 S03	1.5	4	40	6
2AEM 016 040 S03	1.6	4	40	3
2AEM 017 050 S03	1.7	5	40	3
2AEM 018 055 S03	1.8	5.5	40	3
2AEM 019 060 S03	1.9	6	40	3
2AEM 020 060 S03	2	6	40	3
2AEM 020 060 S06	2	6	40	6
2AEM 025 080 S03	2.5	8	40	3
2AEM 030 080 S03	3	8	45	3
2AEM 030 080 S06	3	8	45	6
2AEM 035 100 S06	3.5	10	45	6
2AEM 040 110 S06	4	11	45	6
2AEM 045 110 S06	4.5	11	45	6
2AEM 050 130 S06	5	13	50	6
2AEM 060 130 S06	6	13	50	6
2AEM 070 160 S08	7	16	60	8
2AEM 080 190 S08	8	19	60	8
2AEM 090 190 S10	9	19	70	10
2AEM 100 220 S10	10	22	70	10
2AEM 120 260 S12	12	26	75	12



3 Flutes End Mills

Endmills for Mild steel, Acryl, A.B.S, Aluminum, non-ferrous and non-metallic materials.

- Reinforced edge design for preventing edge chipping.
- Minimize chattering by short flute design.

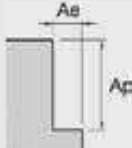



Size	D Tolerance
D ≤ Ø0.9	+0 ~ -0.01mm
D > Ø0.9	+0 ~ -0.015mm

Unit : mm

Order Number	Diameter	Length of cut	Overall Length	Shank Dia
	D	L1	L	d
3AEM 003 008 S04	0.3	0.8	40	4
3AEM 003 012 S04	0.3	1.2	40	4
3AEM 004 010 S04	0.4	1	40	4
3AEM 004 015 S04	0.4	1.5	40	4
3AEM 005 013 S04	0.5	1.3	40	4
3AEM 005 020 S04	0.5	2	45	4
3AEM 006 015 S04	0.6	1.5	40	4
3AEM 006 024 S04	0.6	2.4	45	4
3AEM 007 018 S04	0.7	1.8	40	4
3AEM 007 028 S04	0.7	2.8	45	4
3AEM 008 020 S04	0.8	2	40	4
3AEM 008 032 S04	0.8	3.2	45	4
3AEM 009 025 S04	0.9	2.5	40	4
3AEM 009 036 S04	0.9	3.6	45	4
3AEM 010 025 S04	1	2.5	40	4
3AEM 010 040 S04	1	4	45	4
3AEM 010 060 S04	1	6	50	4
3AEM 012 030 S04	1.2	3	40	4
3AEM 012 050 S04	1.2	5	40	4
3AEM 012 070 S04	1.2	7	50	4
3AEM 015 040 S04	1.5	4	40	4
3AEM 015 060 S04	1.5	6	40	4
3AEM 015 090 S04	1.5	9	60	4
3AEM 020 050 S04	2	5	40	4
3AEM 020 080 S04	2	8	50	4
3AEM 020 100 S04	2	10	60	4
3AEM 025 060 S04	2.5	6	45	4
3AEM 025 100 S04	2.5	10	50	4
3AEM 025 150 S04	2.5	15	60	4
3AEM 030 080 S04	3	8	50	4
3AEM 030 120 S04	3	12	60	4
3AEM 030 150 S04	3	15	80	4
3AEM 040 100 S04	4	10	50	4
3AEM 040 150 S04	4	15	80	4
3AEM 060 200 S06	6	20	80	6
3AEM 060 300 S06	6	30	110	6

3AEM, Square

Material	Carbon Steels S50C			Alloy steels SCM / SKD / SUS			Prehardened Steels HPM / NAK			Aluminum			Copper		
Speed	40 ~ 50m/min			35 ~ 45m/min			23 ~ 35m/min			100 ~ 200m/min			60 ~ 80m/min		
Outside Diameter	RPM	FEED		RPM	FEED		RPM	FEED		RPM	FEED		RPM	FEED	
		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting		Side Milling	Soltting
1mm	12,900	125	60	11,400	90	30	8,600	70	35	43,000	510	180	20,100	240	90
1.5mm	8,600	125	60	7,700	90	30	5,800	70	35	29,000	580	200	13,400	270	90
2mm	6,500	125	60	5,800	110	35	4,300	80	40	22,000	650	225	10,000	300	110
2.5mm	5,100	150	80	4,600	110	34	3,400	85	45	17,200	680	240	8,000	325	110
3mm	4,300	170	85	3,800	120	40	2,900	90	45	14,300	720	240	6,700	330	120
4mm	3,200	200	100	2,900	120	40	2,200	90	45	10,700	750	240	5,000	350	120
5mm	2,600	210	110	2,300	135	45	1,700	115	60	8,600	775	250	4,000	370	120
6mm	2,200	220	110	1,900	150	50	1,400	125	65	7,200	790	260	3,300	370	120
8mm	1,600	200	100	1,400	145	45	1,100	115	60	5,400	700	230	2,500	320	110
10mm	1,300	180	90	1,200	145	45	900	115	60	4,300	650	220	2,000	300	100
12mm	1,100	170	85	1,000	135	45	700	110	55	3,600	610	200	1,700	290	100
Depth of Cut	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>A_e A_p 2D</p> <p>A_e $\varnothing 1 \sim 2.9 = 0.07D$ $\varnothing 3 \sim 6 = 0.15D$</p> </div> <div style="text-align: center;">  <p>A_p</p> <p>A_p $\varnothing 1 \sim 1.2 = 0.15D$ $\varnothing 1.5 \sim 3.5 = 0.5D$ $\varnothing 4 \sim 6 = 0.75D$</p> </div> </div>														