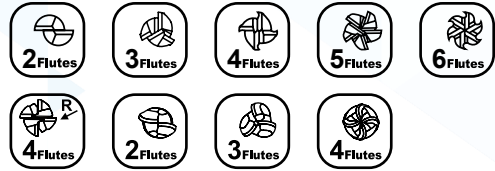


S500⁺ Series

Machinery Parts & General Process

Types of Flute



Honing Process



Coating Type



Optional DIN Weldon Shank



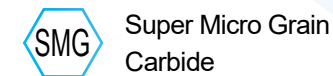
Types of Uneven Flute



Cutting edge

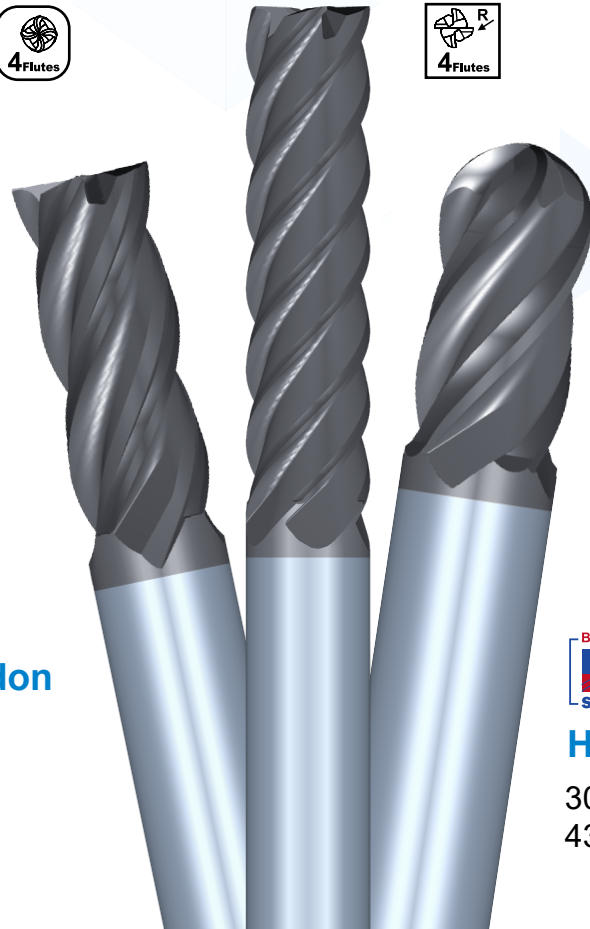


Solid Carbide Material



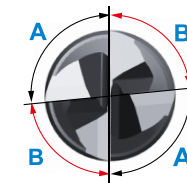
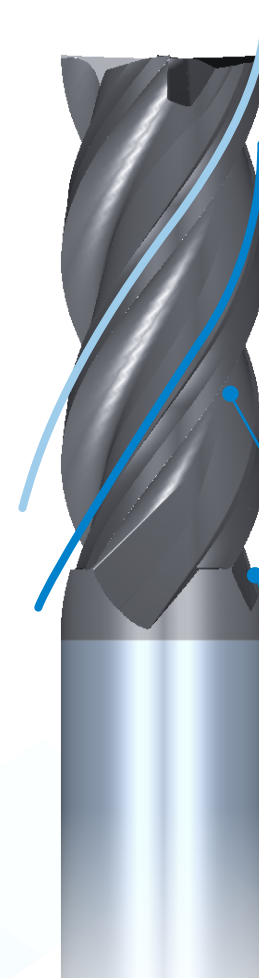
Helix angle

30° / 32° / 35° / 37° / 42° / 43° / 45°

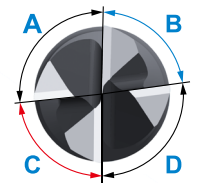


High Speed & Anti-Vibration

Ideal for Mild steels, Cast Irons, Hardened steels with extended tool life.



A≠B
Uneven Flute



A≠B≠C≠D
Available Make to Order!



Variable Helix Angle

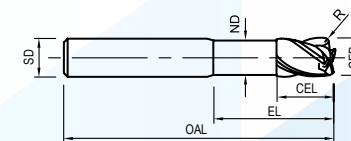
Anti-Vibration, Providing smooth and steady chip evaluation.

Unique coating for wear reduction and heat resistance.

Short Flute Provide

Multiple flute design provide

Heavy Duty Cutter design



Ideal for cutting different hard metals.



Ideal for high hardness metals and finishing applications.



Ideal for heavy duty cutting operation.

This series is mainly focus on high speed cutting in roughing and semi-finishing process on hardness material <HRC55.

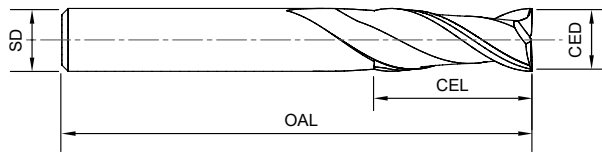
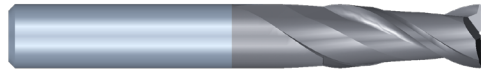
Special & Custom Tooling Services

Customized acceptable!
From **Coating**, **flute**, **Helix angle**, **cutting length**, to **total length**.

SMG Carbide - Universal Square End Mill

S500⁺ - 11352TN

- ◆ Square - 2-Flute x 2.5D
- ◆ Helix 35°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11352TN	0.5	2	4	50	2
	1	3	4	50	
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
16	40	16	100		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11352TN	EU 3	8	6	57	2
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

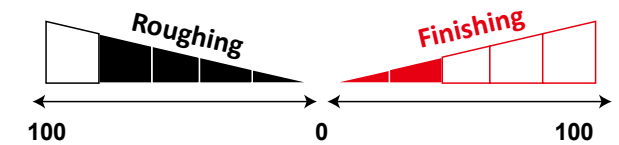
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
0.5	30,000	160	23,000	90	20,000	60	30,000	160
1	24,000	240	19,200	130	15,360	75	24,000	240
2	12,000	260	9,600	150	7,680	90	12,000	260
3	8,200	320	6,500	160	5,600	100	8,200	320
4	6,200	340	4,900	170	4,200	110	6,200	340
5	4,600	360	3,600	180	3,300	120	4,600	360
6	4,100	370	3,200	185	2,800	120	4,100	370
8	3,100	370	2,400	185	2,100	120	3,100	370
10	2,400	360	1,900	180	1,700	110	2,400	360
12	2,000	330	1,560	165	1,400	95	2,000	330
16	1,500	290	1,200	145	1,050	80	1,500	290
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	●

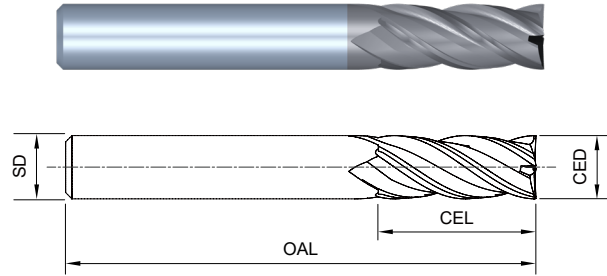


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Square End Mill

S500⁺ - 11354TN

- ◆ Square - 4-Flute x 2.5D
- ◆ Helix 35°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11354TN	0.5	2	4	50	4
	1	3	4	50	
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
16	40	16	100		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11354TN	EU 3	8	6	57	4
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

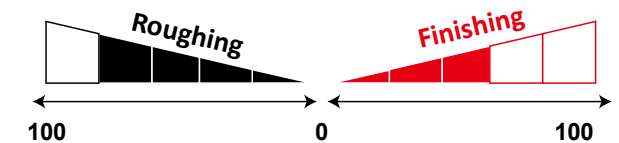
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	a _p : 1.5D	a _e : 0.1D	a _p : 1.5D	a _e : 0.05D	a _p : 1.5D	a _e : 0.03D	a _p : 1.5D	a _e : 0.1D																
0.5	30,000	160	23,000	70	20,000	50	30,000	160																
1	24,000	190	14,000	85	12,500	60	24,000	190																
2	12,000	270	7,000	120	6,350	85	12,000	270																
3	8,000	380	5,300	140	4,240	100	8,000	380																
4	6,000	410	4,250	150	3,700	105	6,000	410																
5	4,800	470	3,550	160	3,150	110	4,800	470																
6	4,000	470	2,950	175	2,650	120	4,000	470																
8	3,000	460	2,200	170	1,950	130	3,000	460																
10	2,400	460	1,750	160	1,550	120	2,400	460																
12	2,000	460	1,470	160	1,300	115	2,000	460																
16	1,500	430	1,100	145	975	110	1,500	430																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a _p	a _e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a _p	a _e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a _p	a _e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a _p	a _e	1.5D	0.1D
a _p	a _e																							
1.5D	0.1D																							
a _p	a _e																							
1.5D	0.05D																							
a _p	a _e																							
1.5D	0.03D																							
a _p	a _e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	●

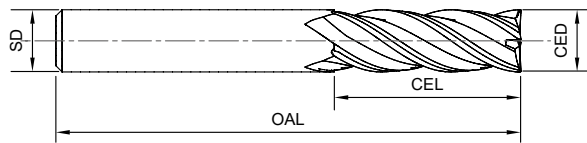
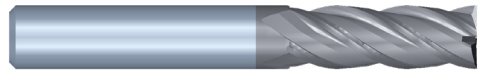


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3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Square End Mill

S500⁺ - 11354TN

- ◆ Square - 4-Flute x 3D
- ◆ Helix 35°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025
16~20	0~-0.03

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11354TN	0.5	2	4	50	4
	1	3	4	50	
	2	6	4	50	
	3	9	4	50	
	4	12	4	50	
	5	15	6	50	
	6	18	6	50	
	8	24	8	65	
	10	30	10	75	
	12	36	12	80	
16	48	16	100		
20	60	20	125		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11354TN	EU 3	9	6	57	4
	EU 4	12	6	65	
	EU 5	15	6	65	
	EU 6	18	6	65	
	EU 8	24	8	75	
	EU 10	30	10	80	
	EU 12	36	12	93	

※ Customized Special sizes, Coating type and Inches are available to order.

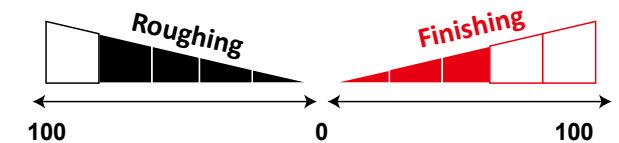
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
0.5	30,000	160	23,000	70	20,000	50	30,000	160																
1	24,000	190	14,000	85	12,500	60	24,000	190																
2	12,000	270	7,000	120	6,350	85	12,000	270																
3	8,000	380	5,300	140	4,240	100	8,000	380																
4	6,000	410	4,250	150	3,700	105	6,000	410																
5	4,800	470	3,550	160	3,150	110	4,800	470																
6	4,000	470	2,950	175	2,650	120	4,000	470																
8	3,000	460	2,200	170	1,950	130	3,000	460																
10	2,400	460	1,750	160	1,550	120	2,400	460																
12	2,000	460	1,470	160	1,300	115	2,000	460																
16	1,500	430	1,100	145	975	110	1,500	430																
20	1,200	400	890	145	800	105	1,200	400																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1.5D	0.05D																							
a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

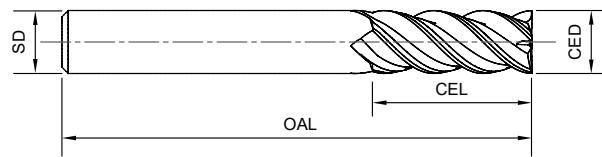


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2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Square End Mill

S500⁺ - 11454TN

- ◆ Square - 4-Flute x 2.5D
- ◆ Helix 45°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11454TN	0.5	2	4	50	4
	1	3	4	50	
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
16	40	16	100		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11454TN	EU 3	8	6	57	4
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

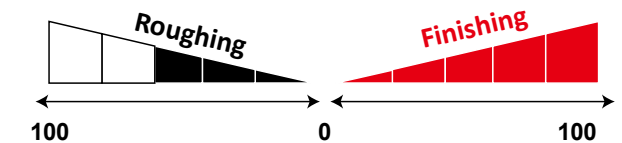
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
0.5	30,000	160	23,000	70	20,000	50	30,000	160
1	24,000	190	14,000	85	12,500	60	24,000	190
2	12,000	270	7,000	120	6,350	85	12,000	270
3	8,000	380	5,300	140	4,240	100	8,000	380
4	6,000	410	4,250	150	3,700	105	6,000	410
5	4,800	470	3,550	160	3,150	110	4,800	470
6	4,000	470	2,950	175	2,650	120	4,000	470
8	3,000	460	2,200	170	1,950	130	3,000	460
10	2,400	460	1,750	160	1,550	120	2,400	460
12	2,000	460	1,470	160	1,300	115	2,000	460
16	1,500	430	1,100	145	975	110	1,500	430
Depth of cut	 a_p 1.5D a_e 0.1D		a_p 1.5D a_e 0.05D		a_p 1.5D a_e 0.03D		a_p 1.5D a_e 0.1D	

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

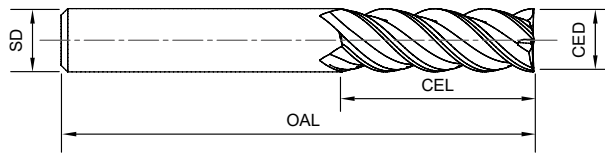
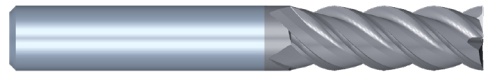


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2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Square End Mill

S500⁺ - 11454TN

- ◆ Square - 4-Flute x 3D
- ◆ Helix 45°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025
16~20	0~-0.03

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11454TN	0.5	2	4	50	4
	1	3	4	50	
	2	6	4	50	
	3	9	4	50	
	4	12	4	50	
	5	15	6	50	
	6	18	6	50	
	8	24	8	65	
	10	30	10	75	
	12	36	12	80	
	16	48	16	100	
20	60	20	125		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11454TN	EU 3	9	6	57	4
	EU 4	12	6	65	
	EU 5	15	6	65	
	EU 6	18	6	65	
	EU 6	18	6	65	
	EU 8	24	8	75	
	EU 10	30	10	80	
	EU 12	36	12	93	

※ Customized Special sizes, Coating type and Inches are available to order.

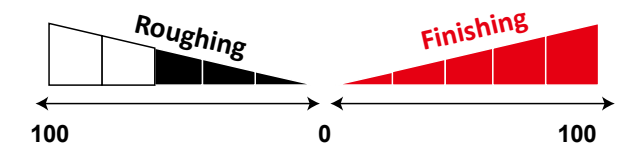
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
0.5	30,000	160	23,000	70	20,000	50	30,000	160
1	24,000	190	14,000	85	12,500	60	24,000	190
2	12,000	270	7,000	120	6,350	85	12,000	270
3	8,000	380	5,300	140	4,240	100	8,000	380
4	6,000	410	4,250	150	3,700	105	6,000	410
5	4,800	470	3,550	160	3,150	110	4,800	470
6	4,000	470	2,950	175	2,650	120	4,000	470
8	3,000	460	2,200	170	1,950	130	3,000	460
10	2,400	460	1,750	160	1,550	120	2,400	460
12	2,000	460	1,470	160	1,300	115	2,000	460
16	1,500	430	1,100	145	975	110	1,500	430
20	1,200	400	890	145	800	105	1,200	400
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

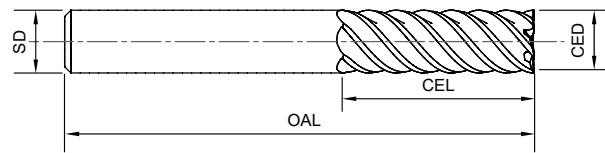


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Multi-Flute Finishing End Mill

S500⁺ - 11506TN

- ◆ Square - 6-Flute x 3D / Multi-Flute
- ◆ Helix 50°



CED Tolerance(mm)	
6~10	0~-0.02
10~16	0~-0.025
16~20	0~-0.03

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11506TN	6	18	6	50	6
	8	24	8	65	
	10	30	10	75	
	12	36	12	80	
	16	48	16	100	
	20	60	20	125	

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -11506TN	EU 6	18	6	65	6
	EU 8	24	8	75	
	EU 10	30	10	80	
	EU 12	36	12	93	

※ Customized Special sizes, Coating type and Inches are available to order.

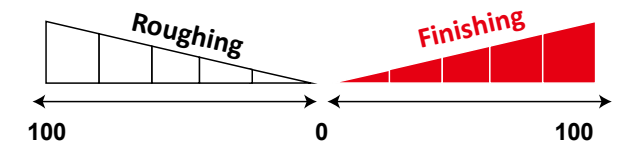
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC													
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min												
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$												
6	7,450	1,270	6,650	1,010	6,300	810												
8	5,550	1,270	4,900	1,010	4,000	810												
10	4,450	1,100	4,000	880	3,200	700												
12	3,700	1,050	3,300	840	2,650	670												
16	2,700	920	2,600	740	1,650	590												
20	2,200	850	1,950	680	1,550	540												
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D
a_p	a_e																	
1.5D	0.1D																	
a_p	a_e																	
1.5D	0.05D																	
a_p	a_e																	
1.5D	0.03D																	

Work Material

P			H		
G1	G2	G3	G14	G15	G16
●	●	●	●	●	●

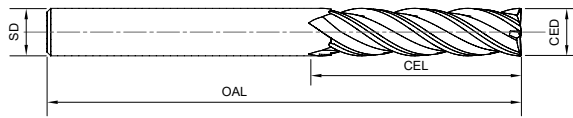


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Long Flute Square End Mill

S500⁺ - 12354TN

- ◆ Square - 4-Flute x 4D / Long Flute
- ◆ Helix 35°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025
16~20	0~-0.03

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -12354TN	0.5	2	4	50	4
	1	4	4	50	
	2	8	4	50	
	3	12	4	50	
	4	16	4	50	
	5	20	6	60	
	6	24	6	65	
	8	32	8	90	
	10	40	10	100	
	12	48	12	110	
	16	64	16	140	
20	80	20	160		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -12354TN	EU 3	12	6	57	4
	EU 4	16	6	65	
	EU 5	20	6	65	
	EU 6	24	6	65	
	EU 8	32	8	80	
	EU 10	40	10	90	
	EU 12	48	12	100	

※ Customized Special sizes, Coating type and Inches are available to order.

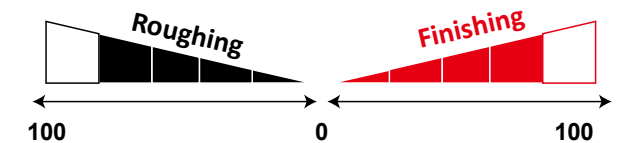
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	a _p : 2.5D	a _e : 0.05D	a _p : 2.5D	a _e : 0.03D	a _p : 2.5D	a _e : 0.02D	a _p : 2.5D	a _e : 0.05D
0.5	40,000	200	36,000	160	35,000	130	40,000	200
1	21,000	250	19,700	220	19,100	155	21,000	250
2	10,500	360	9,800	230	9,550	235	10,500	360
3	7,000	455	6,600	410	6,350	430	7,000	455
4	5,250	455	4,950	415	4,700	300	5,250	455
5	4,200	480	3,950	430	3,800	310	4,200	480
6	3,500	660	2,100	480	1,500	270	3,500	660
8	2,650	705	1,800	500	1,200	285	2,650	705
10	2,100	750	1,600	520	1,150	220	2,100	750
12	1,750	720	1,350	470	960	260	1,750	720
16	1,300	630	1,000	420	720	215	1,300	630
20	1,050	520	800	340	580	200	1,050	520
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

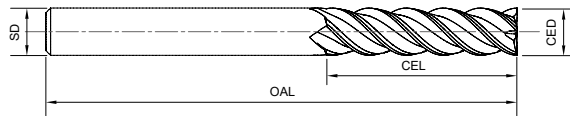


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Long Flute Square End Mill

S500⁺ - 12454TN

- ◆ Square - 4-Flute x 4D / Long Flute
- ◆ Helix 45°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025
16~20	0~-0.03

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -12454TN	0.5	2	4	50	4
	1	4	4	50	
	2	8	4	50	
	3	12	4	50	
	4	16	4	50	
	5	20	6	60	
	6	24	6	65	
	8	32	8	90	
	10	40	10	100	
	12	48	12	110	
16	64	16	140		
20	80	20	160		

Code No.	CED	CEL	SD	OAL	Flute
S500 ⁺ -12454TN	EU 3	12	6	57	4
	EU 4	16	6	65	
	EU 5	20	6	65	
	EU 6	24	6	65	
	EU 8	32	8	80	
	EU 10	40	10	90	
	EU 12	48	12	100	

※ Customized Special sizes, Coating type and Inches are available to order.

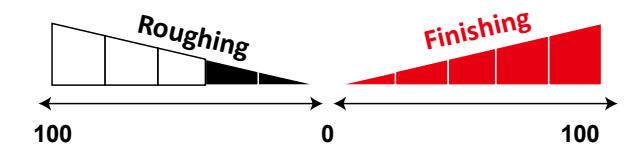
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 2.5D$	$a_e: 0.05D$	$a_p: 2.5D$	$a_e: 0.03D$	$a_p: 2.5D$	$a_e: 0.02D$	$a_p: 2.5D$	$a_e: 0.05D$																
0.5	40,000	200	36,000	160	35,000	130	40,000	200																
1	21,000	250	19,700	220	19,100	155	21,000	250																
2	10,500	360	9,800	230	9,550	235	10,500	360																
3	7,000	455	6,600	410	6,350	430	7,000	455																
4	5,250	455	4,950	415	4,700	300	5,250	455																
5	4,200	480	3,950	430	3,800	310	4,200	480																
6	3,500	660	2,100	480	1,500	270	3,500	660																
8	2,650	705	1,800	500	1,200	285	2,650	705																
10	2,100	750	1,600	520	1,150	220	2,100	750																
12	1,750	720	1,350	470	960	260	1,750	720																
16	1,300	630	1,000	420	720	215	1,300	630																
20	1,050	520	800	340	580	200	1,050	520																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	2.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	2.5D	0.02D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D
a_p	a_e																							
2.5D	0.05D																							
a_p	a_e																							
2.5D	0.03D																							
a_p	a_e																							
2.5D	0.02D																							
a_p	a_e																							
2.5D	0.05D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

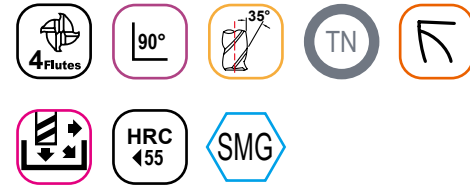
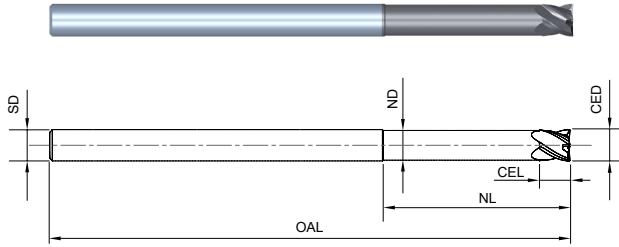


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
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5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Rib Processing End Mill

RPS500⁺ - 14354TN

- ◆ Square - 4-Flute x 1D / Stub Flute - Long Neck
- ◆ Helix 35°



CED Tolerance(mm)	
0.5~3	0~-0.014
3~6	0~-0.018

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	NL	ND	Flute
RPS500 ⁺ -14354TN	0.5	0.5	4	50	3	0.45	4
	1	1	4	50	6	0.95	
	1.5	1.5	4	50	9	1.45	
	2	2	4	50	12	1.95	
	3	3	6	75	18	2.85	
	4	4	6	75	24	3.85	
	5	5	6	100	30	4.85	
	6	6	6	100	36	5.85	

※ Customized Special sizes, Coating type and Inches are available to order.

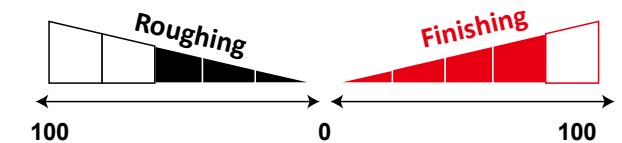
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 0.05D$	$a_e: 0.5D$	$a_p: 0.04D$	$a_e: 0.5D$	$a_p: 0.03D$	$a_e: 0.5D$	$a_p: 0.05D$	$a_e: 0.5D$																
0.5	28,800	315	28,800	200	26,100	160	28,800	315																
1	27,000	540	27,000	390	19,800	250	27,000	540																
1.5	15,300	550	15,300	450	11,700	270	15,300	550																
2	13,500	720	12,600	630	9,900	380	13,500	720																
3	9,000	720	9,000	630	7,200	390	9,000	720																
4	6,300	720	6,300	600	5,400	400	6,300	720																
5	5,400	540	4,950	520	4,500	450	5,400	540																
6	4,500	480	4,140	440	3,600	370	4,500	480																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.5D</td> </tr> </table>		a_p	a_e	0.05D	0.5D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.04D</td> <td>0.5D</td> </tr> </table>		a_p	a_e	0.04D	0.5D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.5D</td> </tr> </table>		a_p	a_e	0.03D	0.5D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.5D</td> </tr> </table>		a_p	a_e	0.05D	0.5D
a_p	a_e																							
0.05D	0.5D																							
a_p	a_e																							
0.04D	0.5D																							
a_p	a_e																							
0.03D	0.5D																							
a_p	a_e																							
0.05D	0.5D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

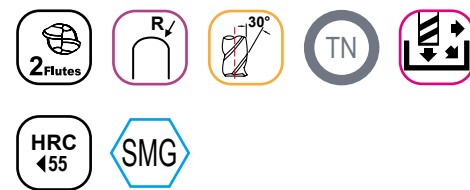
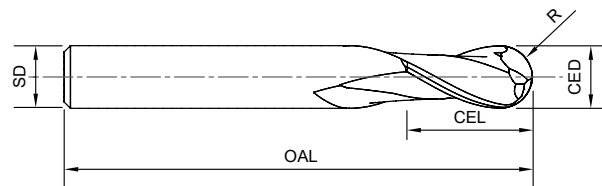
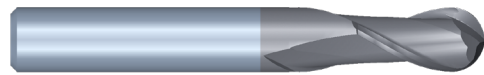


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Ball End Mill

S500⁺ - 81302TN

- ♦ Ball Nose - 2-Flute x 2D
- ♦ Helix 30°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	Flute
S500 ⁺ -81302TN	0.5R	2	4	50	2
	1R	4	4	50	
	1.5R	6	4	50	
	2R	8	4	50	
	2.5R	10	6	50	
	3R	12	6	50	
	4R	16	8	60	
	5R	20	10	75	
	6R	24	12	75	
8R	32	16	100		

Code No.	Radius	CEL	SD	OAL	Flute
S500 ⁺ -81302TN	EU 1.5R	6	6	57	2
	EU 2R	8	6	57	
	EU 2.5R	10	6	57	
	EU 3R	12	6	57	
	EU 4R	16	8	63	
	EU 5R	20	10	72	
	EU 6R	24	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

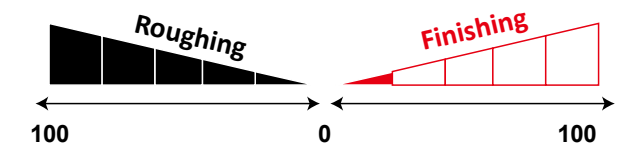
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
0.5R	30,000	700	28,000	420	24,000	290	30,000	700																
1.0R	21,600	870	17,000	520	13,800	350	21,600	870																
1.5R	14,000	840	11,700	540	10,100	432	14,000	840																
2R	10,800	840	9,000	520	7,700	410	10,800	840																
2.5R	8,600	830	7,200	510	6,100	430	8,600	830																
3R	7,200	830	5,800	490	5,100	460	7,200	830																
4R	5,400	810	5,000	560	3,800	550	5,400	810																
5R	4,300	810	3,500	560	3,000	510	4,300	810																
6R	3,600	810	2,900	510	2,500	390	3,600	810																
8R	2,700	800	2,200	490	1,900	360	2,700	800																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
0.05D	0.1D																							
a_p	a_e																							
0.03D	0.1D																							
a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

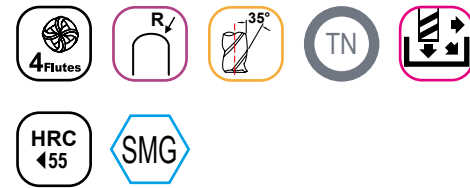
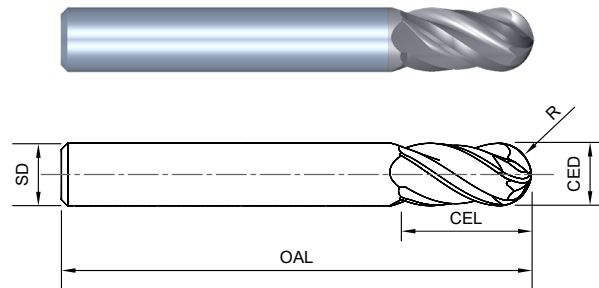


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Universal Ball End Mill

S500⁺ - 81354TN

- ◆ Ball Nose - 4-Flute x 2D
- ◆ Helix 35°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	Flute
S500 ⁺ -81354TN	0.5R	2	4	50	4
	1R	4	4	50	
	1.5R	6	4	50	
	2R	8	4	50	
	2.5R	10	6	50	
	3R	12	6	50	
	4R	16	8	60	
	5R	20	10	75	
	6R	24	12	75	
	10R	40	20	100	

Code No.	Radius	CEL	SD	OAL	Flute
S500 ⁺ -81354TN	EU 1.5R	6	6	57	4
	EU 2R	8	6	57	
	EU 2.5R	10	6	57	
	EU 3R	12	6	57	
	EU 4R	16	8	63	
	EU 5R	20	10	72	
	EU 6R	24	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

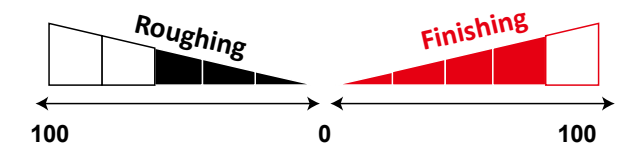
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
0.5R	28,800	960	28,800	760	28,800	600	28,800	960																
1.0R	22,500	1,520	21,420	1,210	17,000	960	22,500	1,520																
1.5R	15,030	2,300	14,310	1,600	11,400	1,280	15,030	2,300																
2R	11,250	2,100	13,410	1,710	8,600	1,360	11,250	2,100																
2.5R	9,000	1,900	8,550	1,530	6,800	1,220	9,000	1,900																
3R	7,560	2,100	7,200	1,680	5,700	1,300	7,560	2,100																
4R	5,670	2,160	5,360	1,700	7,300	1,360	5,670	2,160																
5R	4,600	2,080	4,320	1,600	3,420	1,280	4,600	2,080																
6R	3,780	1,900	3,600	1,900	2,880	1,300	3,780	1,900																
8R	2,800	1,440	2,700	1,530	2,160	1,220	2,800	1,440																
10R	2,250	1,150	2,160	1,260	1,710	1,010	2,250	1,150																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
0.05D	0.1D																							
a_p	a_e																							
0.03D	0.1D																							
a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

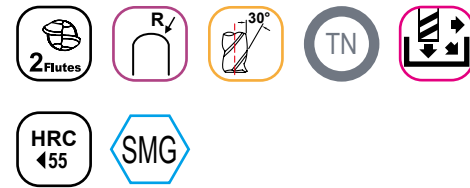
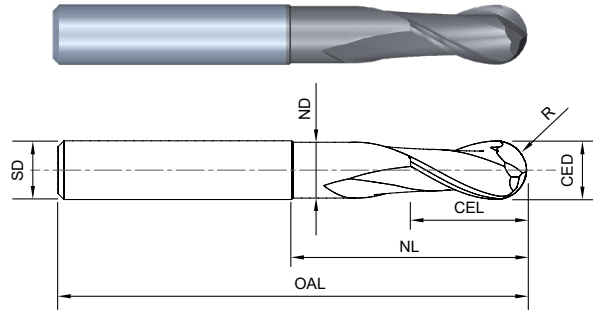


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Long Shank Type Ball End Mill

S500⁺ - 83302TN

- ♦ Ball Nose - 2-Flute x 2D / Long Shank with Neck
- ♦ Helix 30°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500 ⁺ -83302TN	0.5R	2	4	75	5	0.95	2
	1R	4	4	75	10	1.95	
	1.5R	6	4	75	15	2.85	
	2R	8	4	75	20	3.85	
	2.5R	10	6	75	25	4.85	
	3R	12	6	75	30	5.7	
	4R	16	8	100	35	7.6	
	5R	20	10	100	45	9.5	
6R	24	12	100	50	11.4		

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500 ⁺ -83302TN	EU 1.5R	6	6	80	15	2.85	2
	EU 2R	8	6	80	20	3.85	
	EU 2.5R	10	6	80	25	4.85	
	EU 3R	12	6	100	30	5.7	
	EU 4R	16	8	100	35	7.6	
	EU 5R	20	10	100	45	9.5	
EU 6R	24	12	150	50	11.4		

※ Customized Special sizes, Coating type and Inches are available to order.

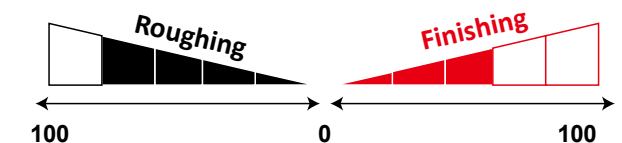
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron													
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min												
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$												
0.5R	25,900	680	24,000	430	22,000	340	25,900	680												
1.0R	25,900	1,720	19,440	960	16,200	760	25,900	1,720												
1.5R	17,000	1,550	12,960	1,040	10,930	830	17,000	1,550												
2R	12,900	1,430	9,720	1,080	8,060	860	12,900	1,430												
2.5R	10,100	1,280	7,700	1,090	6,440	870	10,100	1,280												
3R	8,500	1,110	6,440	1,000	5,380	800	8,500	1,110												
4R	6,440	1,090	4,800	870	4,010	700	6,440	1,090												
5R	5,140	980	3,890	740	3,240	600	5,140	980												
6R	4,290	980	3,240	610	2,670	490	4,290	980												
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D		
a_p	a_e																			
0.03D	0.1D																			
a_p	a_e																			
0.03D	0.05D																			
a_p	a_e																			
0.05D	0.1D																			

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

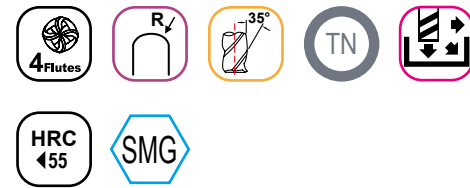
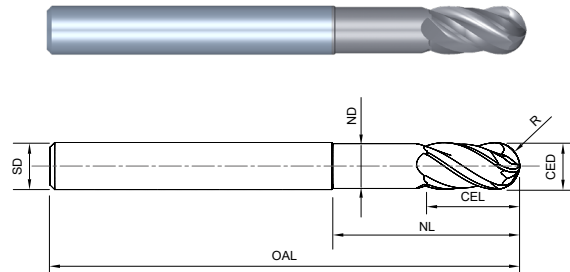


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Long Shank Type Ball End Mill

S500⁺ - 83354TN

- ♦ Ball Nose - 4-Flute x 2D / Long Shank with Neck
- ♦ Helix 35°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500 ⁺ -83354TN	3R	12	6	75	18	5.7	4
	4R	16	8	100	32	7.6	
	5R	20	10	100	40	9.5	
	6R	24	12	100	48	11.4	
	8R	32	16	150	64	15.5	
	10R	40	20	150	80	19.5	

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500 ⁺ -83354TN	EU 3R	12	6	100	30	5.7	4
	EU 4R	16	8	100	35	7.6	
	EU 5R	20	10	100	45	9.5	
	EU 6R	24	12	150	50	11.4	

※ Customized Special sizes, Coating type and Inches are available to order.

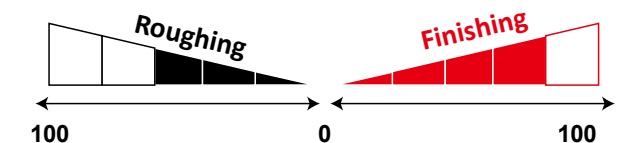
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
3R	7,560	1,680	7,150	1,340	5,710	1,070	7,560	1,680																
4R	5,670	1,650	5,350	1,320	4,270	1,055	5,670	1,650																
5R	5,140	1,480	4,320	1,060	3,420	950	5,140	1,480																
6R	4,290	1,480	3,600	1,060	2,880	950	4,290	1,480																
8R	3,240	1,430	2,700	1,030	2,160	980	3,240	1,430																
10R	2,590	1,340	2,160	960	1,710	890	2,590	1,340																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
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a_p	a_e																							
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a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

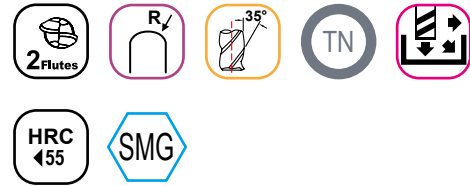
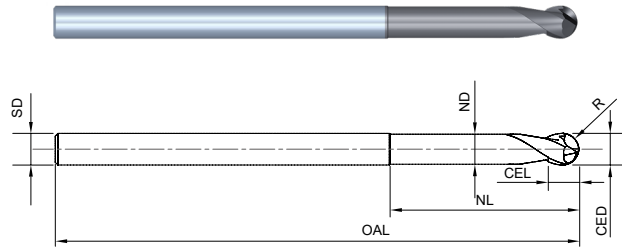


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Rib Processing Ball End Mill

RPS500⁺ - 84352TN

- ♦ Ball Nose - 2-Flute x 1D / Stub Flute - Long Neck
- ♦ Helix 35°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
RPS500 ⁺ -84352TN	0.25R	0.5	4	50	3	0.45	2
	0.5R	1	4	50	6	0.95	
	0.75R	1.5	4	50	9	1.45	
	1R	2	4	50	12	1.95	
	1.5R	3	6	75	18	2.85	
	2R	4	6	75	24	3.85	
	2.5R	5	6	100	30	4.85	
	3R	6	6	100	36	5.85	

※ Customized Special sizes, Coating type and Inches are available to order.

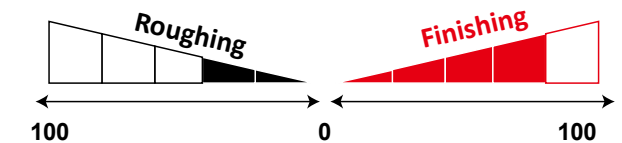
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.02D$	$a_e: 0.03D$	$a_p: 0.05D$	$a_e: 0.1D$
0.25R	36,000	420	36,000	310	36,000	280	36,000	420
0.5R	36,000	980	27,000	580	22,500	420	36,000	980
0.75R	27,000	1,200	27,000	860	22,500	650	27,000	1,200
1.0R	22,500	1,420	22,500	1,150	18,000	860	22,500	1,420
1.5R	18,000	1,800	16,200	1,150	12,600	860	18,000	1,800
2R	18,000	2,160	14,400	1,300	10,800	980	18,000	2,160
2.5R	16,200	2,100	10,800	1,080	8,280	870	16,200	2,100
3R	14,400	1,900	7,200	860	6,300	720	14,400	1,900
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

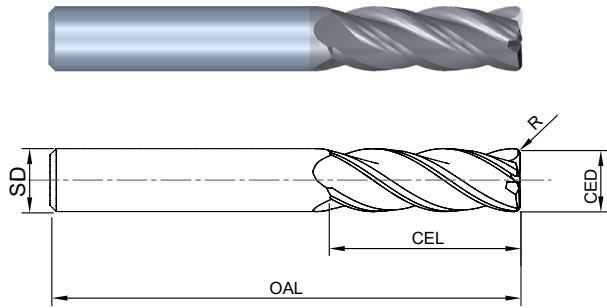


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Corner Radius End Mill

S500⁺ - 21354TN

- ◆ Corner Radius - 4-Flute x 3D
- ◆ Helix 35°



CED Tolerance(mm)	
1~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~12	0~-0.025

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Radius	Flute
S500 ⁺ -21354TN	1	3	4	50	0.2R	4
	2	6	4	50	0.2R	
	3	9	4	50	0.2R	
	4	12	4	50	0.2R	
	5	15	6	50	0.2R	
	6	18	6	50	0.2R	
	8	24	8	65	0.2R 0.5R	
	10	30	10	75	0.2R 0.5R	
	12	36	12	80	0.2R 0.5R	

Code No.	CED	CEL	SD	OAL	Radius	Flute
S500 ⁺ -21354TN	EU 3	9	6	57	0.2R	4
	EU 4	12	6	65	0.2R	
	EU 5	15	6	65	0.2R	
	EU 6	18	6	65	0.2R	
	EU 8	24	8	75	0.2R 0.5R	
	EU 10	30	10	80	0.2R 0.5R	
	EU 12	36	12	93	0.2R 0.5R	

※ Customized Special sizes, Coating type and Inches are available to order.

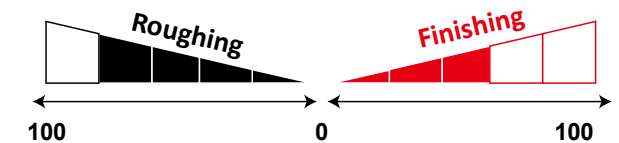
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	a _p : 1.5D	a _e : 0.1D	a _p : 1.5D	a _e : 0.05D	a _p : 1.5D	a _e : 0.03D	a _p : 1.5D	a _e : 0.1D
1	24,000	190	14,000	85	12,500	60	24,000	190
2	12,000	270	7,000	120	6,350	85	12,000	270
3	8,000	380	5,300	135	4,240	100	8,000	380
4	6,000	410	4,250	145	3,700	105	6,000	410
5	4,800	470	3,550	150	3,150	110	4,800	470
6	4,000	470	2,950	175	2,650	115	4,000	470
8	3,000	460	2,200	170	1,950	115	3,000	460
10	2,400	460	1,750	160	1,550	115	2,400	460
12	2,000	460	1,470	160	1,300	115	2,000	460
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

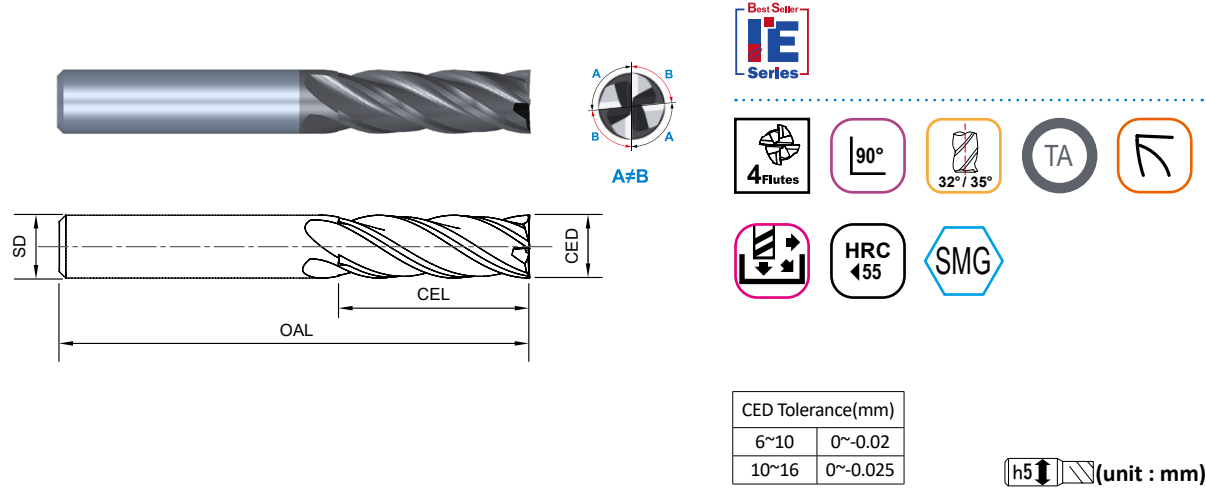


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2. Please select the suitable coolant fluid.
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5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500IE⁺ - 11324TA

- ◆ Square - 4-Flute x 3D
- ◆ Uneven Flute / Variable Helix Angle 32° / 35°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11324TA	6	18	6	50	4
	8	24	8	65	
	10	30	10	75	
	12	36	12	80	
	16	48	16	100	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11324TA	EU 6	18	6	65	4
	EU 8	24	8	75	
	EU 10	30	10	80	
	EU 12	36	12	93	

※ Customized Special sizes, Coating type and Inches are available to order.

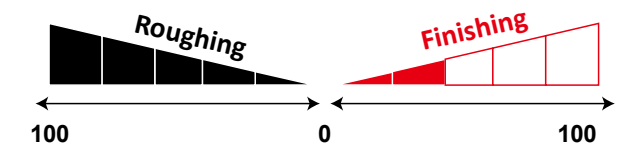
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
6	6,400	910	5,400	700	5,100	560	6,400	910																
8	4,800	900	4,200	690	3,800	550	4,800	900																
10	3,800	890	3,400	650	3,000	520	3,800	890																
12	3,200	830	2,900	500	2,500	400	3,200	830																
16	2,200	680	1,800	400	1,700	320	2,200	680																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1.5D	0.05D																							
a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	○

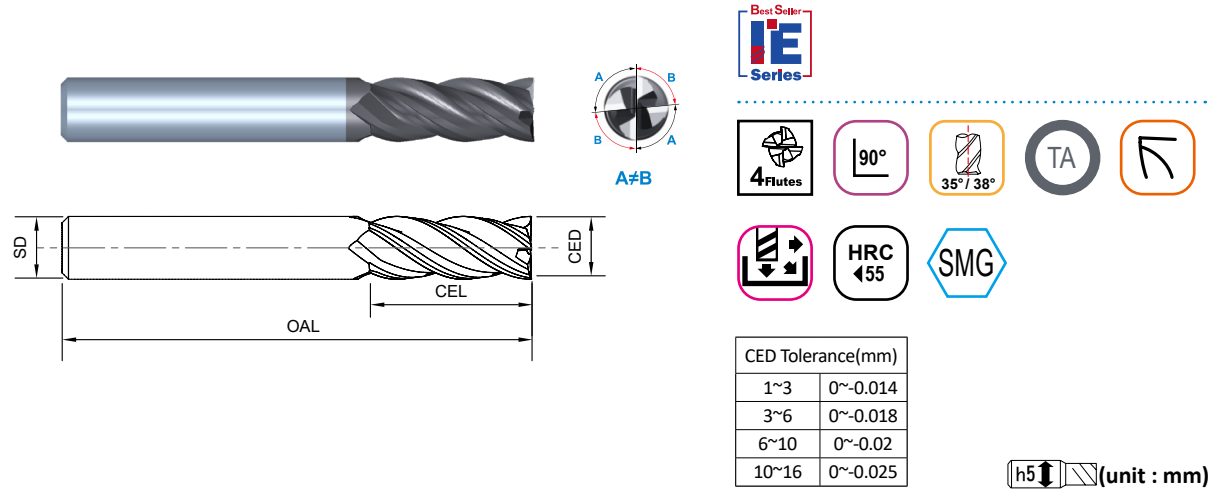


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500IE⁺ - 11354TA

- ◆ Square - 4-Flute x 2.5D
- ◆ Uneven Flute / Variable Helix 35° / 38°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11354TA	1	3	4	50	4
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
	16	40	16	100	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11354TA	EU 3	8	6	57	4
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

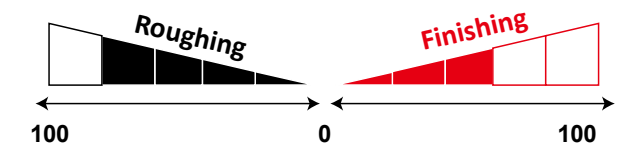
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
1	28,000	480	25,400	360	22,400	290	28,000	480
2	17,300	590	14,200	440	13,800	350	17,300	590
3	12,700	700	10,800	500	10,100	400	12,700	700
4	9,600	750	8,000	520	7,700	410	9,600	750
5	7,600	800	6,600	590	6,100	470	7,600	800
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000
10	3,800	890	3,400	650	3,000	520	3,800	890
12	3,200	830	2,900	500	2,500	400	3,200	830
16	2,400	620	2,200	400	1,900	320	2,400	620
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

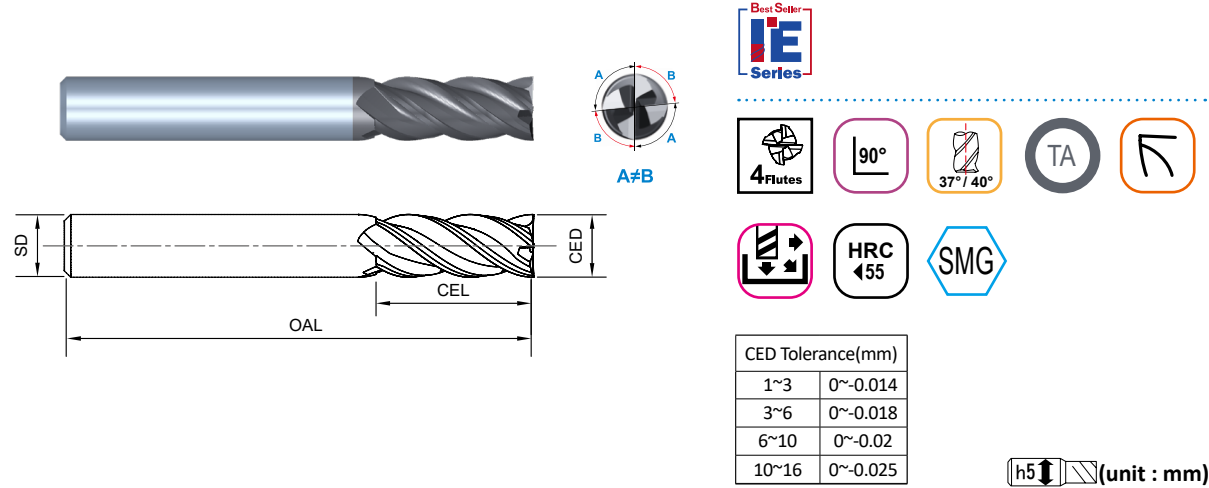


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500IE⁺ - 11374TA

- ◆ Square - 4-Flute x 2.5D
- ◆ Uneven Flute / Variable Helix 37° / 40°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11374TA	1	3	4	50	4
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	65	
	10	25	10	75	
	12	30	12	75	
	16	40	16	100	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11374TA	EU 3	8	6	57	4
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

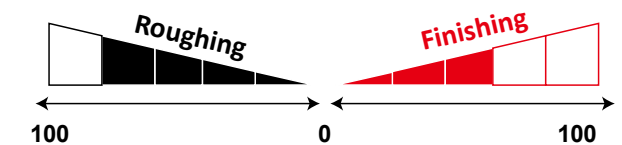
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
1	28,000	480	25,400	360	22,400	290	28,000	480
2	17,300	590	14,200	440	13,800	350	17,300	590
3	12,700	700	10,800	500	10,100	400	12,700	700
4	9,600	750	8,000	520	7,700	410	9,600	750
5	7,600	800	6,600	590	6,100	470	7,600	800
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000
10	3,800	890	3,400	650	3,000	520	3,800	890
12	3,200	830	2,900	500	2,500	400	3,200	830
16	2,400	620	2,200	400	1,900	320	2,400	620
Depth of cut								

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

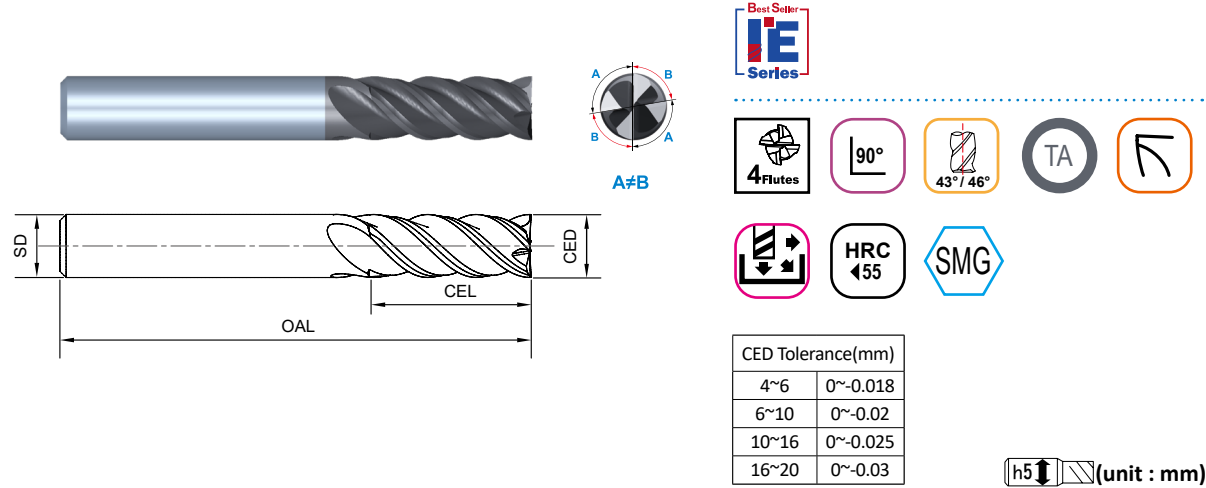


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500IE⁺ - 11434TA

- ◆ Square - 4-Flute x 2.5D
- ◆ Uneven Flute / Variable Helix 43° / 46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11434TA	4	10	4	50	4
	5	13	6	50	
	6	15	6	50	
	8	20	8	75	
	10	25	10	75	
	12	30	12	75	
	16	40	16	100	
	20	50	20	110	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11434TA	EU 4	11	6	57	4
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

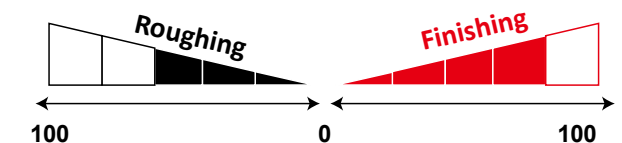
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
4	9,600	750	8,000	520	7,700	410	9,600	750																
5	7,600	800	6,600	590	6,100	470	7,600	800																
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000																
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000																
10	3,800	890	3,400	650	3,000	520	3,800	890																
12	3,200	830	2,900	500	2,500	400	3,200	830																
16	2,400	620	2,200	400	1,900	320	2,400	620																
20	1,900	500	1,800	280	1,500	220	1,900	500																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1.5D	0.05D																							
a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

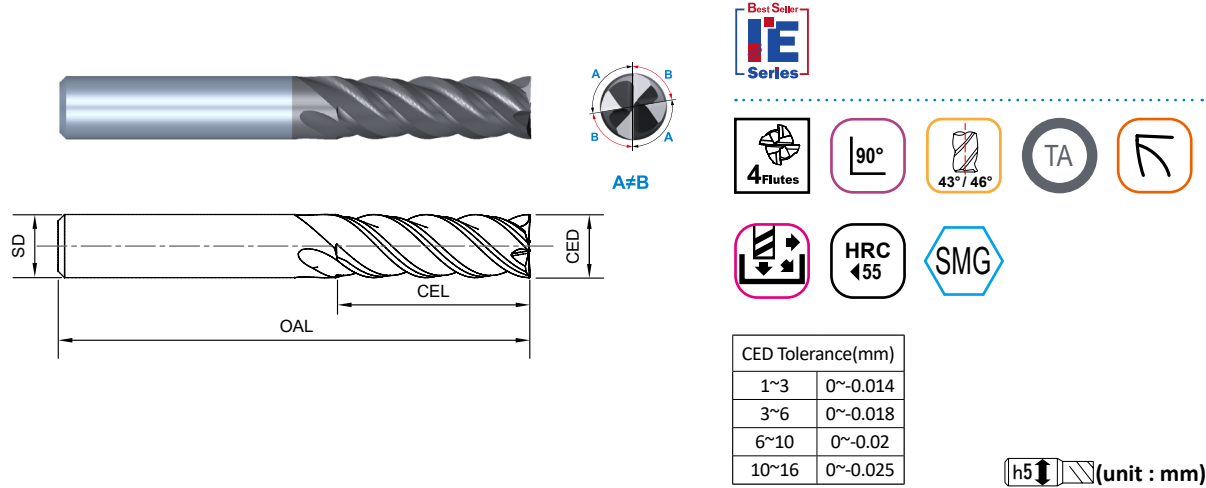


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2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500IE⁺ - 11434TA

- ◆ Square - 4-Flute x 3D
- ◆ Uneven Flute / Variable Helix 43° / 46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11434TA	1	3	4	50	4
	2	6	4	50	
	3	9	4	50	
	4	12	4	50	
	5	15	6	50	
	6	18	6	50	
	8	24	8	65	
	10	30	10	75	
	12	36	12	80	
16	48	16	100		

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -11434TA	EU 3	9	6	57	4
	EU 4	12	6	65	
	EU 5	15	6	65	
	EU 6	18	6	65	
	EU 8	24	8	75	
	EU 10	30	10	80	
	EU 12	36	12	93	

※ Customized Special sizes, Coating type and Inches are available to order.

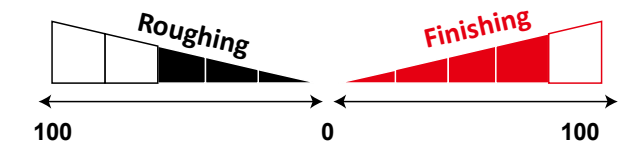
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
1	28,000	480	25,400	360	22,400	290	28,000	480																
2	17,300	590	14,200	440	13,800	350	17,300	590																
3	12,700	700	10,800	500	10,100	400	12,700	700																
4	9,600	750	8,000	520	7,700	410	9,600	750																
5	7,600	800	6,600	590	6,100	470	7,600	800																
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000																
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000																
10	3,800	890	3,400	650	3,000	520	3,800	890																
12	3,200	830	2,900	500	2,500	400	3,200	830																
16	2,400	620	2,200	400	1,900	320	2,400	620																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1.5D	0.05D																							
a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

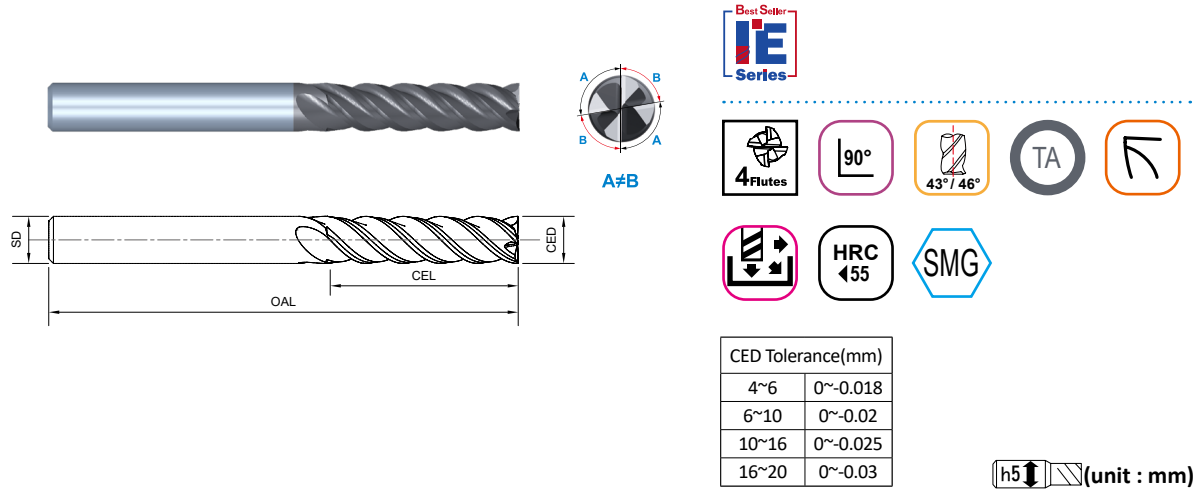


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2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Long Flute Type End Mill

S500IE⁺ - 12434TA

- ◆ Square - 4-Flute x 4D / Long Flute
- ◆ Uneven Flute / Variable Helix 43° / 46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12434TA	4	16	4	50	4
	5	20	6	60	
	6	24	6	65	
	8	32	8	90	
	10	40	10	100	
	12	48	12	100	
	16	64	16	140	
	20	80	20	160	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12434TA	EU 4	16	6	65	4
	EU 5	20	6	65	
	EU 6	24	6	65	
	EU 8	32	8	80	
	EU 10	40	10	90	
	EU 12	48	12	100	

※ Customized Special sizes, Coating type and Inches are available to order.

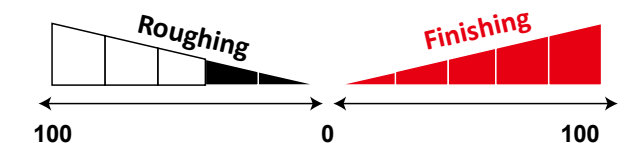
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 2.5D$	$a_e: 0.05D$	$a_p: 2.5D$	$a_e: 0.03D$	$a_p: 2.5D$	$a_e: 0.02D$	$a_p: 2.5D$	$a_e: 0.05D$																
4	5,750	500	5,400	450	4,700	300	5,750	500																
5	4,620	530	4,340	470	3,820	310	4,620	530																
6	3,850	730	2,300	530	1,500	270	3,850	730																
8	2,900	770	1,980	550	1,200	280	2,900	770																
10	2,300	830	1,760	570	1,150	220	2,300	830																
12	1,900	790	1,480	520	1,000	260	1,900	790																
16	1,430	690	1,090	460	720	220	1,430	690																
20	1,150	570	870	380	580	200	1,150	570																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	2.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	2.5D	0.02D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D
a_p	a_e																							
2.5D	0.05D																							
a_p	a_e																							
2.5D	0.03D																							
a_p	a_e																							
2.5D	0.02D																							
a_p	a_e																							
2.5D	0.05D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

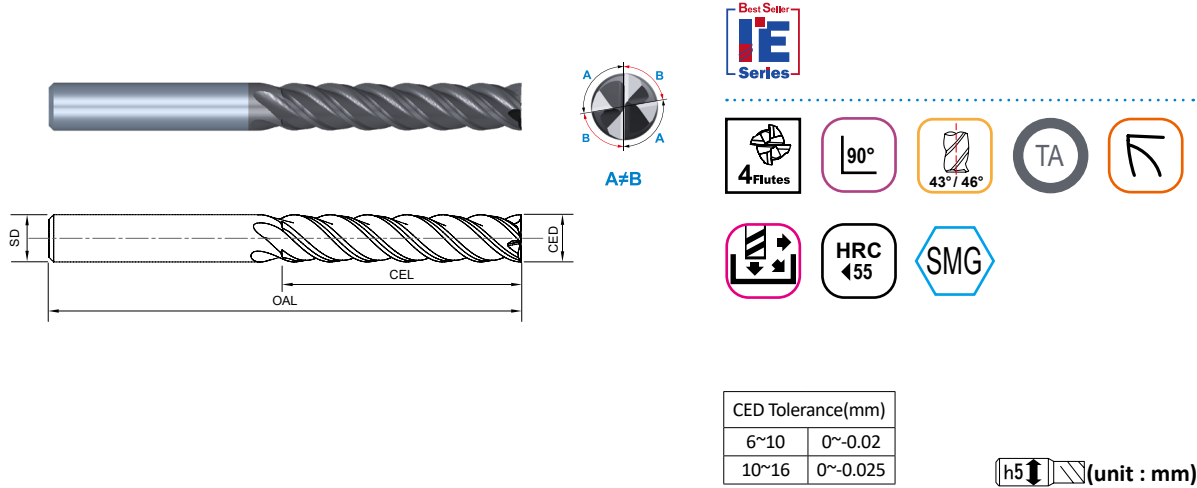


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2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Long Flute Type End Mill

S500IE⁺ - 12434TA

- ◆ Square - 4-Flute x 5D / Long Flute
- ◆ Uneven Flute / Variable Helix Angle 43° / 46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12434TA	6	30	6	75	4
	8	40	8	90	
	10	50	10	100	
	12	60	12	110	
	16	80	16	160	

※ Customized Special sizes, Coating type and Inches are available to order.

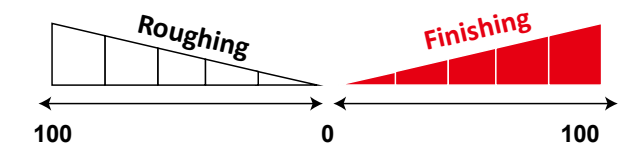
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 3.5D$	$a_e: 0.05D$	$a_p: 3.5D$	$a_e: 0.03D$	$a_p: 3.5D$	$a_e: 0.02D$	$a_p: 3.5D$	$a_e: 0.05D$																
6	3,800	500	2,800	300	1,680	160	3,800	500																
8	2,900	520	2,200	320	1,320	170	2,900	520																
10	2,300	520	1,760	310	1,050	170	2,300	520																
12	1,900	510	1,480	300	890	170	1,900	510																
16	1,400	500	1,100	290	660	160	1,400	500																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	3.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	3.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	3.5D	0.02D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	3.5D	0.05D
a_p	a_e																							
3.5D	0.05D																							
a_p	a_e																							
3.5D	0.03D																							
a_p	a_e																							
3.5D	0.02D																							
a_p	a_e																							
3.5D	0.05D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	○

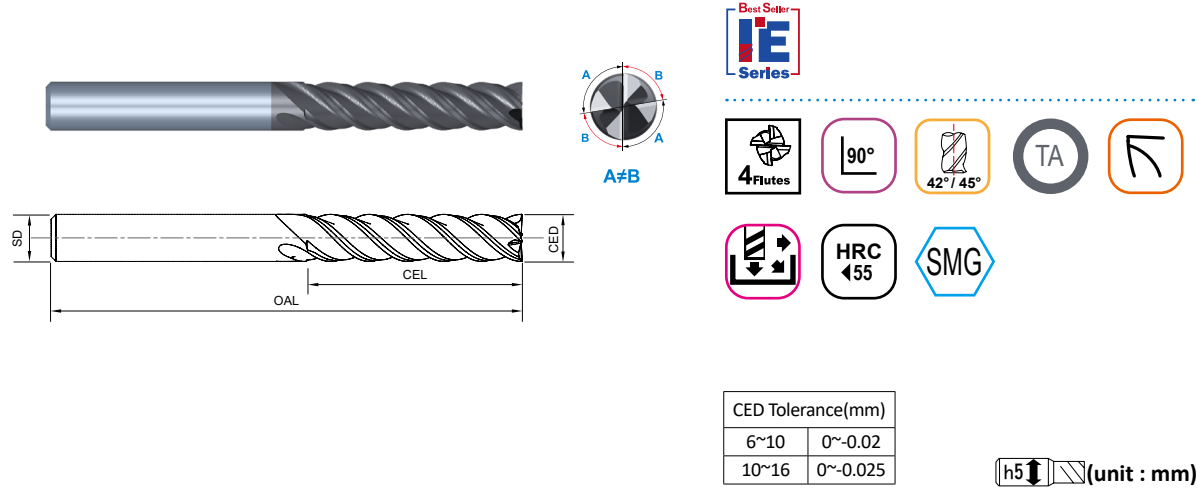


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3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Long Shank Type End Mill

S500IE⁺ - 12424TA

- ◆ Square - 4-Flute / Long Flute / Long Shank
- ◆ Uneven Flute / Variable Helix Angle 42° / 45°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12424TA	6	45	6	100	4
	8	38	8	100	
	10	45	10	100	
	12	55	12	100	
	16	90	16	150	

※ Customized Special sizes, Coating type and Inches are available to order.

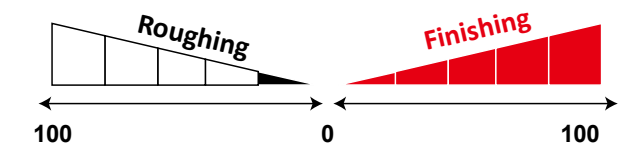
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 3.5D$	$a_e: 0.05D$	$a_p: 3.5D$	$a_e: 0.03D$	$a_p: 3.5D$	$a_e: 0.02D$	$a_p: 3.5D$	$a_e: 0.05D$																
6	3,800	500	2,800	300	1,680	160	3,800	500																
8	2,900	520	2,200	320	1,320	170	2,900	520																
10	2,300	520	1,760	310	1,050	170	2,300	520																
12	1,900	510	1,480	300	890	170	1,900	510																
16	1,400	500	1,100	290	660	160	1,400	500																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	3.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	3.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	3.5D	0.02D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>3.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	3.5D	0.05D
a_p	a_e																							
3.5D	0.05D																							
a_p	a_e																							
3.5D	0.03D																							
a_p	a_e																							
3.5D	0.02D																							
a_p	a_e																							
3.5D	0.05D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

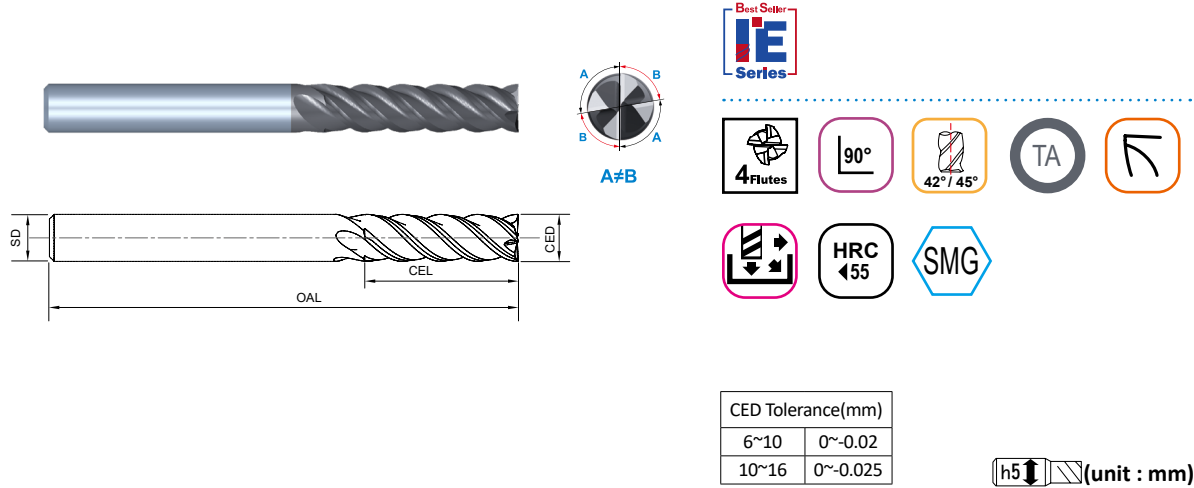


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Long Shank Type End Mill

S500IE⁺ - 13424TA

- ◆ Square - 4-Flute / Long Shank
- ◆ Uneven Flute / Variable Helix Angle 42° / 45°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -13424TA	6	16	6	75	4
	8	20	8	100	
	10	32	10	100	
	12	32	12	100	
	16	45	16	150	

※ Customized Special sizes, Coating type and Inches are available to order.

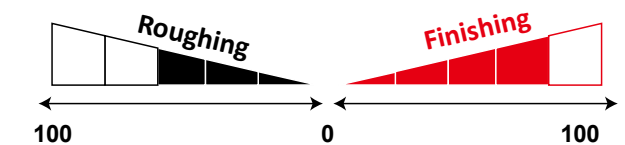
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
6	3,800	500	2,800	300	1,680	160	3,800	500																
8	2,900	520	2,200	320	1,320	170	2,900	520																
10	2,300	520	1,760	310	1,050	170	2,300	520																
12	1,900	510	1,480	300	890	170	1,900	510																
16	1,400	500	1,100	290	660	160	1,400	500																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
a_p	a_e																							
1.5D	0.05D																							
a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	○

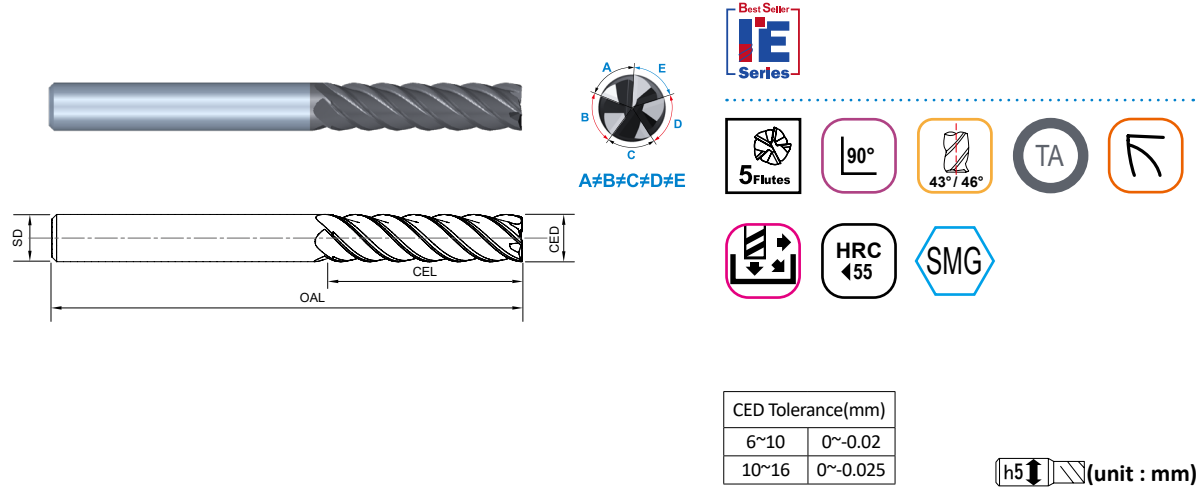


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Finishing Long Flute End Mill

S500IE⁺ - 12435TA

- ◆ Square - 5-Flute x 4D / Multi-Flute / Long Flute Type
- ◆ Uneven Flute / Variable Helix 43° / 46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12435TA	6	24	6	65	5
	8	32	8	90	
	10	40	10	100	
	12	48	12	110	
	16	64	16	140	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12435TA	EU 6	24	6	65	5
	EU 8	32	8	80	
	EU 10	40	10	90	
	EU 12	48	12	100	

※ Customized Special sizes, Coating type and Inches are available to order.

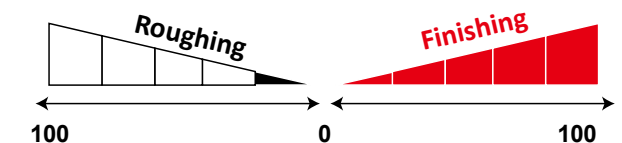
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC													
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min												
CED	$a_p: 2.5D$	$a_e: 0.05D$	$a_p: 2.5D$	$a_e: 0.03D$	$a_p: 2.5D$	$a_e: 0.02D$												
6	3,850	730	2,300	530	1,500	270												
8	2,900	770	1,980	550	1,200	280												
10	2,300	830	1,760	570	1,150	220												
12	1,900	790	1,480	520	1,000	260												
16	1,430	690	1,090	460	720	220												
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	2.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	2.5D	0.02D
a_p	a_e																	
2.5D	0.05D																	
a_p	a_e																	
2.5D	0.03D																	
a_p	a_e																	
2.5D	0.02D																	

Work Material

P			H		
G1	G2	G3	G14	G15	G16
●	●	●	●	●	●

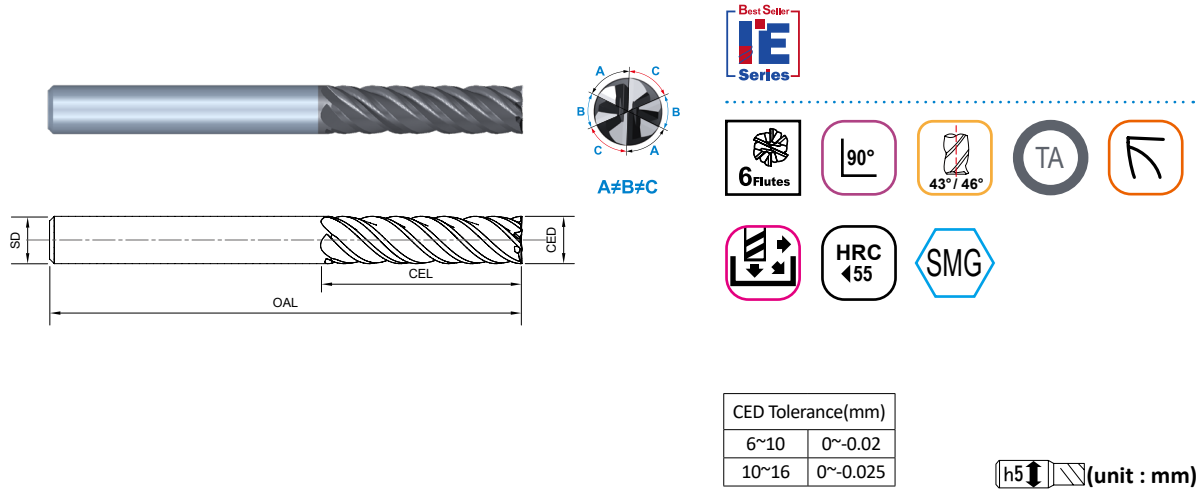


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Finishing Long Flute End Mill

S500IE⁺ - 12436TA

- ◆ Square - 6-Flute x 4D / Multi-Flute / Long Flute Type
- ◆ Uneven Flute / Variable Helix 43°/46°



Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12436TA	6	24	6	65	6
	8	32	8	90	
	10	40	10	100	
	12	48	12	110	
	16	64	16	140	

Code No.	CED	CEL	SD	OAL	Flute
S500IE ⁺ -12436TA	EU 6	24	6	65	6
	EU 8	32	8	80	
	EU 10	40	10	90	
	EU 12	48	12	100	

※ Customized Special sizes, Coating type and Inches are available to order.

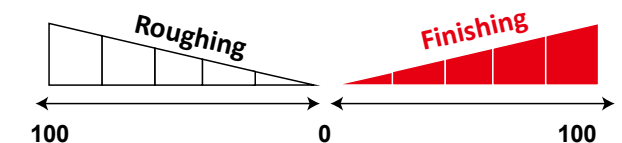
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC													
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min												
CED	$a_p: 2.5D$	$a_e: 0.05D$	$a_p: 2.5D$	$a_e: 0.03D$	$a_p: 2.5D$	$a_e: 0.02D$												
6	3,850	730	2,300	530	1,500	270												
8	2,900	770	1,980	550	1,200	280												
10	2,300	830	1,760	570	1,150	220												
12	1,900	790	1,480	520	1,000	260												
16	1,430	690	1,090	460	720	220												
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	2.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	2.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>2.5D</td> <td>0.02D</td> </tr> </table>		a_p	a_e	2.5D	0.02D
a_p	a_e																	
2.5D	0.05D																	
a_p	a_e																	
2.5D	0.03D																	
a_p	a_e																	
2.5D	0.02D																	

Work Material

P			H		
G1	G2	G3	G14	G15	G16
●	●	●	●	●	●

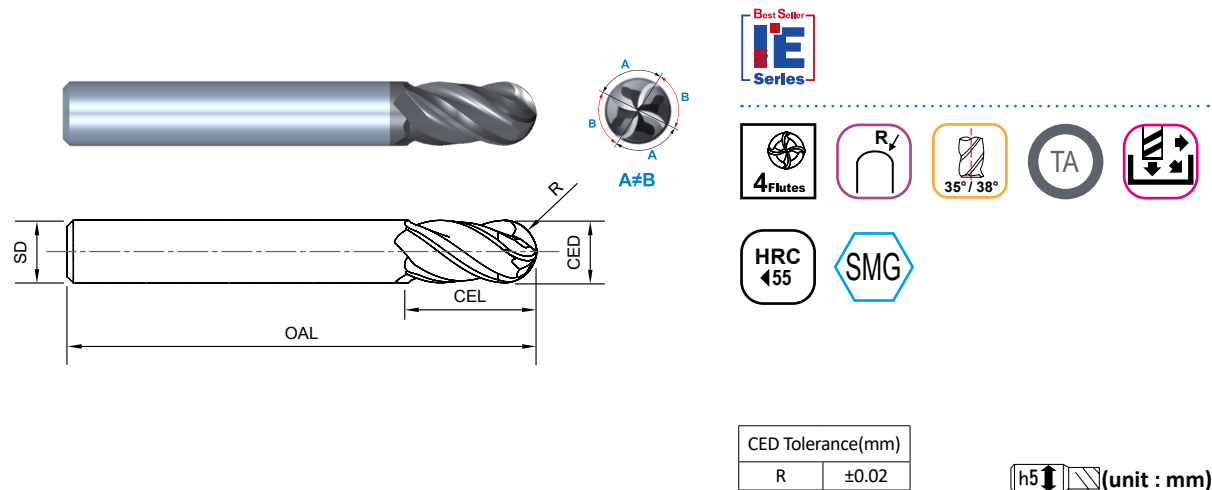


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Ball End Mill

S500IE⁺ - 81354TA

- ♦ Ball Nose - 4-Flute x 2D
- ♦ Uneven Flute / Variable Helix 35°/38°



Code No.	Radius	CEL	SD	OAL	Flute
S500IE ⁺ -81354TA	3R	12	6	50	4
	4R	16	8	60	
	5R	20	10	75	
	6R	24	12	75	
	8R	32	16	100	
	10R	40	20	100	

Code No.	Radius	CEL	SD	OAL	Flute
S500IE ⁺ -81354TA	EU 3R	12	6	57	4
	EU 4R	16	8	63	
	EU 5R	20	10	72	
	EU 6R	24	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

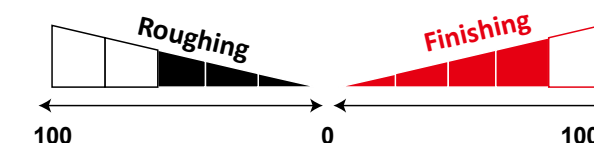
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
3R	8,400	2,300	7,950	1,600	6,350	1,280	8,400	2,300																
4R	6,300	2,400	5,950	1,600	4,750	1,280	6,300	2,400																
5R	5,050	2,320	4,800	1,560	3,800	1,250	5,050	2,320																
6R	4,200	2,120	4,000	1,720	3,200	1,370	4,200	2,120																
8R	3,150	1,600	3,000	1,360	2,400	1,200	3,150	1,600																
10R	2,500	1,280	2,400	1,120	1,900	970	2,500	1,280																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
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a_p	a_e																							
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a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

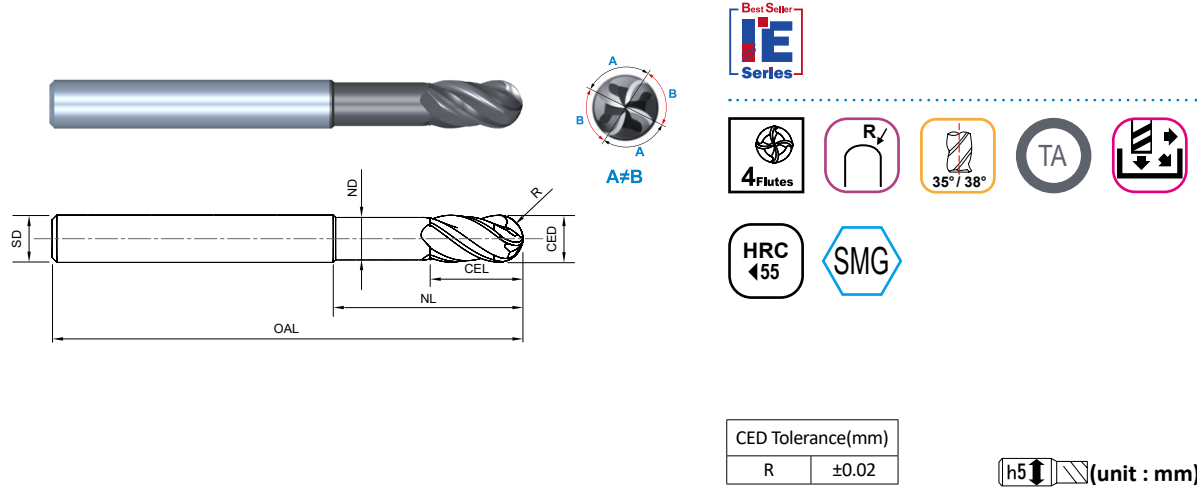


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Long Shank Type Ball End Mill

S500IE⁺ - 83354TA

- ♦ Ball Nose - 4-Flute x 2D / Long Shank with Neck
- ♦ Uneven Flute / Variable Helix 35°/38°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500IE ⁺ -83354TA	3R	12	6	75	18	5.7	4
	4R	16	8	100	32	7.6	
	5R	20	10	100	40	9.5	
	6R	24	12	100	48	11.4	
	8R	32	16	150	64	15.5	
	10R	40	20	150	80	19.5	

Code No.	Radius	CEL	SD	OAL	NL	ND	Flute
S500IE ⁺ -83354TA	EU 3R	12	6	100	30	5.7	4
	EU 4R	16	8	100	35	7.6	
	EU 5R	20	10	100	45	9.5	
	EU 6R	24	12	150	50	11.4	

※ Customized Special sizes, Coating type and Inches are available to order.

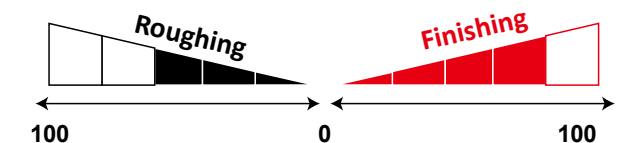
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
3R	8,400	2,300	7,950	1,600	6,350	1,280	8,400	2,300																
4R	6,300	2,400	5,950	1,600	4,750	1,280	6,300	2,400																
5R	5,050	2,320	4,800	1,560	3,800	1,250	5,050	2,320																
6R	4,200	2,120	4,000	1,720	3,200	1,370	4,200	2,120																
8R	3,150	1,600	3,000	1,360	2,400	1,200	3,150	1,600																
10R	2,500	1,280	2,400	1,120	1,900	970	2,500	1,280																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
0.05D	0.1D																							
a_p	a_e																							
0.03D	0.1D																							
a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

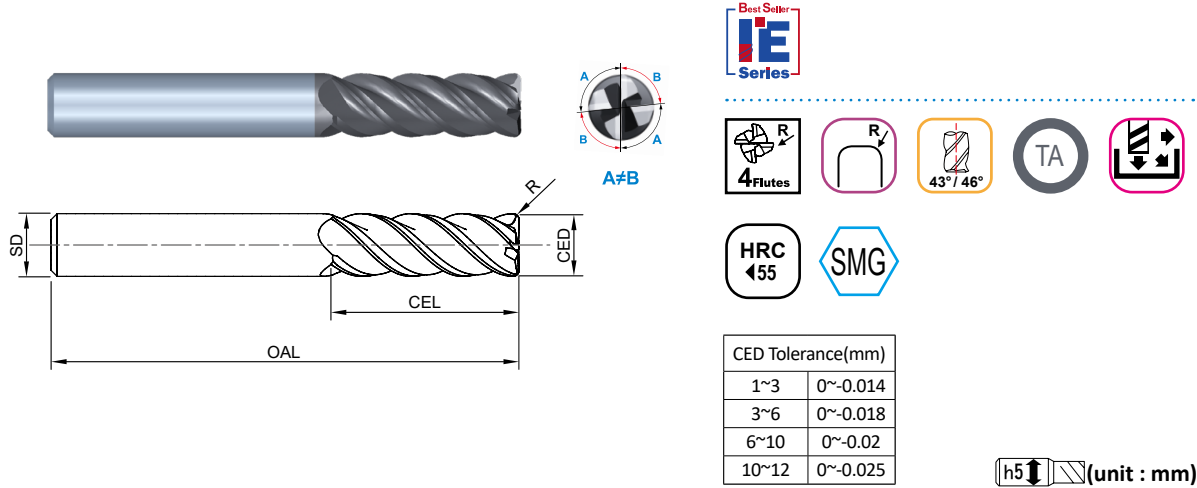


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Corner Radius End Mill

S500IE⁺ - 21434TA

- ◆ Corner Radius - 4-Flute x 3D
- ◆ Uneven Flute / Variable Helix 43°/46°



Code No.	CED	CEL	SD	OAL	Radius	Flute
S500IE ⁺ -24134TA	1	3	4	50	0.2R	4
	2	6	4	50	0.2R	
	3	9	4	50	0.2R	
	4	12	4	50	0.2R	
	5	15	6	50	0.2R	
	6	18	6	50	0.2R	
	8	24	8	65	0.2R 0.5R	
	10	30	10	75	0.2R 0.5R	
	12	36	12	80	0.2R 0.5R	

Code No.	CED	CEL	SD	OAL	Radius	Flute
S500IE ⁺ -24134TA	EU 3	9	6	57	0.2R	4
	EU 4	12	6	65	0.2R	
	EU 5	15	6	65	0.2R	
	EU 6	18	6	65	0.2R	
	EU 8	24	8	75	0.2R 0.5R	
	EU 10	30	10	80	0.2R 0.5R	
	EU 12	36	12	93	0.2R 0.5R	

※ Customized Special sizes, Coating type and Inches are available to order.

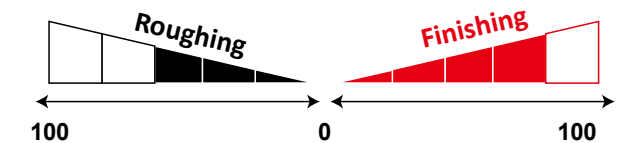
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$
1	28,000	480	25,400	360	22,400	290	28,000	480
2	17,300	590	14,200	440	13,800	350	17,300	590
3	12,700	700	10,800	500	10,100	400	12,700	700
4	9,600	750	8,000	520	7,700	410	9,600	750
5	7,600	800	6,600	590	6,100	470	7,600	800
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000
10	3,800	890	3,400	650	3,000	520	3,800	890
12	3,200	830	2,900	500	2,500	400	3,200	830
Depth of cut	 a_p a_e $1.5D$ $0.1D$		a_p a_e $1.5D$ $0.05D$		a_p a_e $1.5D$ $0.03D$		a_p a_e $1.5D$ $0.1D$	

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	○	●	●	●

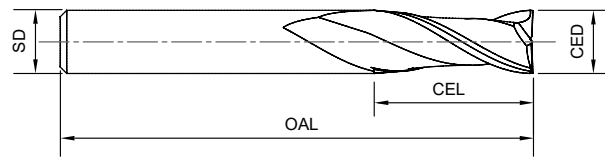
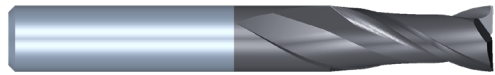


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

S500E⁺ - 11302TA

- ◆ Square - 2-Flute x 2.5D
- ◆ Variable Helix Angle 30°/33°



CED Tolerance(mm)	
1~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025

h5 (unit : mm)

Code No.	CED	CEL	SD	OAL	Flute
S500E ⁺ -11302TA	1	3	4	50	2
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
16	40	16	100		

Code No.	CED	CEL	SD	OAL	Flute
S500E ⁺ -11302TA	EU 3	8	6	57	2
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

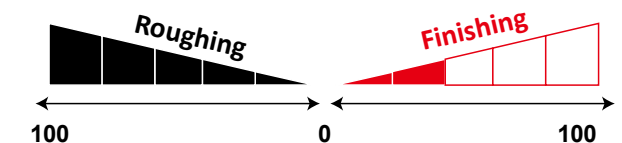
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
1	24,000	280	19,200	130	15,360	90	24,000	280																
2	12,000	310	9,600	180	7,680	120	12,000	310																
3	8,200	380	6,500	250	5,600	170	8,200	380																
4	6,200	390	4,900	270	4,200	180	6,200	390																
5	4,600	430	3,600	300	3,300	210	4,600	430																
6	4,100	440	3,200	310	2,800	220	4,100	440																
8	3,100	440	2,400	310	2,100	220	3,100	440																
10	2,400	430	1,900	320	1,700	250	2,400	430																
12	2,000	400	1,560	300	1,400	210	2,000	400																
16	1,500	350	1,200	240	1,050	170	1,500	350																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
1.5D	0.1D																							
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a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○

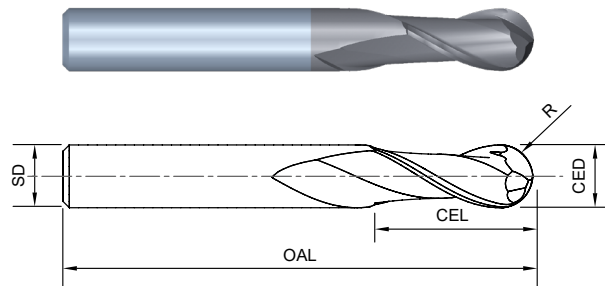


1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Ball End Mill

S500E⁺ - 81302TA

- ♦ Ball Nose - 2-Flute x 2.5D
- ♦ Variable Helix Angle 30°/33°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	Flute
S500E ⁺ -81302TA	0.5R	3	4	50	2
	1R	5	4	50	
	1.5R	8	4	50	
	2R	10	4	50	
	2.5R	13	6	50	
	3R	15	6	50	
	4R	20	8	60	
	5R	25	10	75	
	6R	30	12	75	
8R	40	16	100		

Code No.	Radius	CEL	SD	OAL	Flute
S500E ⁺ -81302TA	EU 1.5R	8	6	57	2
	EU 2R	11	6	57	
	EU 2.5R	13	6	57	
	EU 3R	13	6	57	
	EU 4R	19	8	63	
	EU 5R	22	10	72	
	EU 6R	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

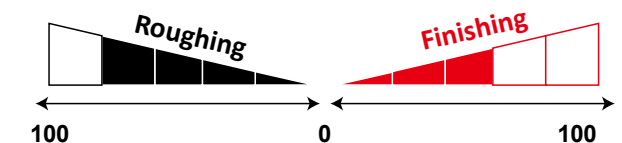
Recommended Cutting Condition

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	a _p : 0.05D	a _e : 0.1D	a _p : 0.03D	a _e : 0.1D	a _p : 0.03D	a _e : 0.05D	a _p : 0.05D	a _e : 0.1D																
0.5R	30,000	700	28,000	420	24,000	290	30,000	700																
1.0R	21,600	870	17,000	520	13,800	350	21,600	870																
1.5R	14,000	840	11,700	540	10,100	432	14,000	840																
2R	10,800	840	9,000	520	7,700	410	10,800	840																
2.5R	8,600	830	7,200	510	6,100	430	8,600	830																
3R	7,200	830	5,800	490	5,100	460	7,200	830																
4R	5,400	810	5,000	560	3,800	550	5,400	810																
5R	4,300	810	3,500	560	3,000	510	4,300	810																
6R	3,600	810	2,900	510	2,500	390	3,600	810																
8R	2,700	800	2,200	490	1,900	360	2,700	800																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a _p	a _e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a _p	a _e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a _p	a _e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a _p	a _e	0.05D	0.1D
a _p	a _e																							
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0.03D	0.05D																							
a _p	a _e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○



1. Please select high rigid tool holder and collet chuck during machining.
2. Please select the suitable coolant fluid.
3. For dry cutting, please use air blow for chip removal and cooling.
4. These cutting data are for reference only. Please adjust the cutting speed according to machine capability and working conditions.
5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

SMG Carbide - Anti-Vibration Square End Mill

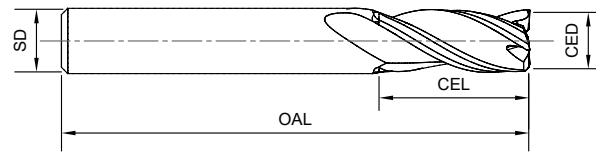
S500E⁺ - 11303TA

- ◆ Square - 3-Flute x 2.5D
- ◆ Variable Helix Angle 30° /31° /32°



CED Tolerance(mm)	
1~3	0~-0.014
3~6	0~-0.018
6~10	0~-0.02
10~16	0~-0.025

h5 (unit : mm)



Code No.	CED	CEL	SD	OAL	Flute
S500E ⁺ -11303TA	1	3	4	50	3
	2	5	4	50	
	3	8	4	50	
	4	10	4	50	
	5	13	6	50	
	6	15	6	50	
	8	20	8	60	
	10	25	10	75	
	12	30	12	75	
	16	40	16	100	

Code No.	CED	CEL	SD	OAL	Flute
S500E ⁺ -11303TA	EU 3	8	6	57	3
	EU 4	11	6	57	
	EU 5	13	6	57	
	EU 6	13	6	57	
	EU 8	19	8	63	
	EU 10	22	10	72	
	EU 12	26	12	83	

※ Customized Special sizes, Coating type and Inches are available to order.

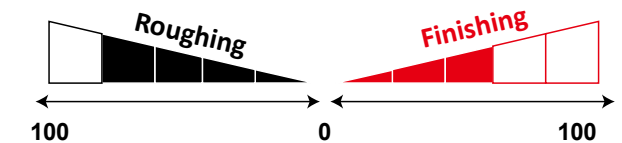
Recommended Cutting Condition

Side Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
CED	$a_p: 1.5D$	$a_e: 0.1D$	$a_p: 1.5D$	$a_e: 0.05D$	$a_p: 1.5D$	$a_e: 0.03D$	$a_p: 1.5D$	$a_e: 0.1D$																
1	28,000	480	25,400	360	22,400	290	28,000	480																
2	17,300	590	14,200	440	13,800	350	17,300	590																
3	12,700	700	10,800	500	10,100	400	12,700	700																
4	9,600	750	8,000	520	7,700	410	9,600	750																
5	7,600	800	6,600	590	6,100	470	7,600	800																
6	6,400	1,000	5,400	700	5,100	560	6,400	1,000																
8	4,800	1,000	4,200	690	3,800	550	4,800	1,000																
10	3,800	890	3,400	650	3,000	520	3,800	890																
12	3,200	830	2,900	500	2,500	400	3,200	830																
16	2,400	620	2,200	400	1,900	320	2,400	620																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	1.5D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> </tr> </table>		a_p	a_e	1.5D	0.03D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>1.5D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	1.5D	0.1D
a_p	a_e																							
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a_p	a_e																							
1.5D	0.03D																							
a_p	a_e																							
1.5D	0.1D																							

Work Material

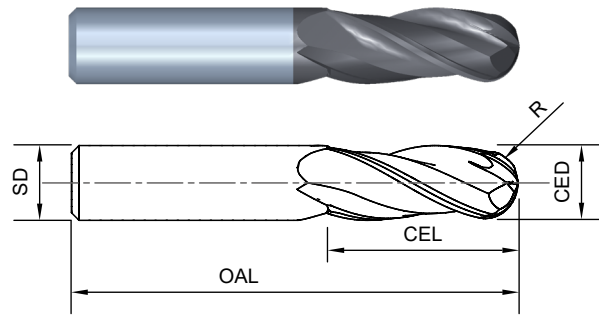
P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○



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2. Please select the suitable coolant fluid.
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5. If vibrations occur during cutting process, adjust and reduce the cutting speed.

S500E⁺ - 81303TA

- ♦ Ball Nose - 3-Flute x 2.5D
- ♦ Variable Helix Angle 30° /31° /32°



CED Tolerance(mm)	
R	±0.02

h5 (unit : mm)

Code No.	Radius	CEL	SD	OAL	Flute
S500E ⁺ -81303TA	0.5R	3	4	50	3
	1R	5	4	50	
	1.5R	8	4	50	
	2R	10	4	50	
	2.5R	13	6	50	
	3R	15	6	50	
	4R	20	8	60	
	5R	25	10	75	
	6R	30	12	75	
8R	40	16	100		

Code No.	Radius	CEL	SD	OAL	Flute
S500E ⁺ -81303TA	EU 1.5R	8	6	57	3
	EU 2R	11	6	57	
	EU 2.5R	13	6	57	
	EU 3R	13	6	57	
	EU 4R	19	8	63	
	EU 5R	22	10	72	
	EU 6R	26	12	83	

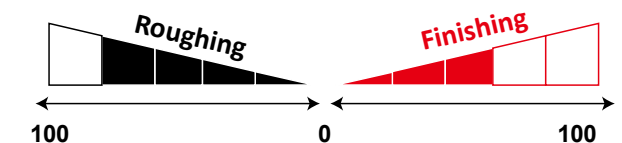
※ Customized Special sizes, Coating type and Inches are available to order.

General Milling

Work Material	Alloyed Steel 25~35HRC		Hardened Steel 35~45HRC		Hardened Steel 45~55HRC		Gray Cast Iron Malleable cast iron																	
	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min	RPM/min	FEED mm/min																
R	$a_p: 0.05D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.1D$	$a_p: 0.03D$	$a_e: 0.05D$	$a_p: 0.05D$	$a_e: 0.1D$																
0.5R	33,000	1,100	30,800	650	26,400	450	33,000	1,100																
1.0R	23,760	1,360	18,700	800	15,180	560	23,760	1,360																
1.5R	15,400	1,320	12,870	930	11,110	540	15,400	1,320																
2R	11,880	1,320	9,900	930	8,470	540	11,880	1,320																
2.5R	9,460	1,300	7,920	760	6,710	530	9,460	1,300																
3R	7,920	1,300	6,380	760	5,610	530	7,920	1,300																
4R	5,940	1,280	5,500	750	4,180	525	5,940	1,280																
5R	4,730	1,280	3,850	750	3,300	525	4,730	1,280																
6R	3,960	1,280	3,190	750	2,750	525	3,960	1,280																
8R	2,970	1,270	2,420	740	2,090	520	2,970	1,270																
Depth of cut	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.03D	0.1D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.03D</td> <td>0.05D</td> </tr> </table>		a_p	a_e	0.03D	0.05D	<table border="1"> <tr> <td>a_p</td> <td>a_e</td> </tr> <tr> <td>0.05D</td> <td>0.1D</td> </tr> </table>		a_p	a_e	0.05D	0.1D
a_p	a_e																							
0.05D	0.1D																							
a_p	a_e																							
0.03D	0.1D																							
a_p	a_e																							
0.03D	0.05D																							
a_p	a_e																							
0.05D	0.1D																							

Work Material

P			K	H		
G1	G2	G3	G5	G14	G15	G16
●	●	●	●	●	●	○



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