

H700 Series for high feed milling (Hardened steel HRC 40~68)



- Ultra grain carbide rods with better abrasion resistance.
- SICO coating with anti-high temperature & anti-oxidation.
- The tools with large core diameter has good rigidity.
- Negative rake angle design is suitable for machining hardened material.
- The special design of multiple flutes provide excellent surface finishing.
- We also provide NACO coating.

Index

Appearance	Series	Code No.	Ø Range	Num of teeth	Helix Angle	Coating	Working Materials						Page
							P	M	K	N	S	H	

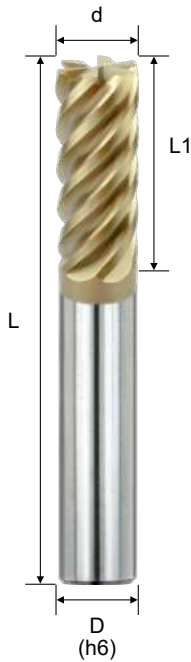
H700 Series for high feed milling (Hardened steel HRC 40~68)

	High Helix · Square · 6F	EHSSS	Ø6~Ø14	6	45°	SICO	●	○	●		○	●	A011
	High Helix · Square · 8F	EHSSS	Ø16~Ø20	8	45°	SICO	●	○	●		○	●	A011
	High Helix · Short Flute · Square · 4F	EHSUS	Ø1~Ø5	4	45°	SICO	●	○	●		○	●	A012
	High Helix · Short Flute · Square · 6F	EHSUS	Ø6~Ø12	6	45°	SICO	●	○	●		○	●	A012
	High Helix · Short Flute · Square · 8F	EHSUS	Ø16~Ø20	8	45°	SICO	●	○	●		○	●	A012
	Low Helix · Short Flute · Ball Nose · 2F	EHBUS	0.5R~8R	2	15°	SICO	●	○	●		○	●	A013
	High Feed · Short Flute · Corner Radius · 4F	EHCUK	Ø2~Ø12	4	0°	SICO	●	○	●		○	●	A014
	High Feed · Corner Radius · 4F	EHCUS	Ø1~Ø12	4	0°	SICO	●	○	●		○	●	A015

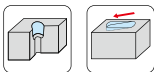
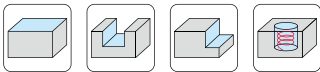
H700 - High Helix · Square · 6F / 8F

- SICO Nano coating provides a superior wear and heat resistance.
- Suitable for HRC 50 Hardened Steel, maximum up to HRC 65.
- Horsepower consumption will be decreased with greater shearing action.
- High Helix and 6 Flutes design gives a good finishing surface.
- The coating can change to Naco Blue is optional.

EHSSS



Order No.	Dia. (d)	CL (L1)	OAL (L)	Shank (D)	Flutes (F)
EHSSS606000S	6	15	50	6	6
EHSSS608000S	8	20	60	8	6
EHSSS610000S	10	25	75	10	6
EHSSS612000S	12	30	75	12	6
EHSSS614000S	14	30	75	14	6
EHSSS816000S	16	40	100	16	8
EHSSS818000S	18	40	100	18	8
EHSSS820000S	20	45	100	20	8
EHSSS825000S	25	45	100	25	8



d Tolerance	
d ≤ 12	0 ~ -0.02
d > 12	0 ~ -0.03

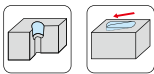
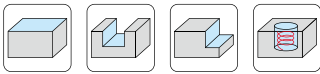
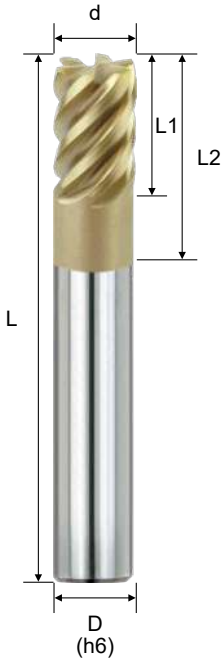
* **S** is SICO Coating
N is Naco Blue Coating

Cutting conditions : Table 001

H700 - High Helix · Short Flute · Square · 4F / 6F / 8F

- SICO Nano coating provides a superior wear and heat resistance.
- Suitable for HRC 50 Hardened Steel, maximum up to HRC 65.
- Greater shearing action results in increased speeds and feeds and faster stock removal.
- Prevents clogging of the flutes.
- The coating can change to Naco Blue is optional.

EHSUS



d Tolerance	
d ≤ 12	0 ~ -0.02
d > 12	0 ~ -0.03

Order No.	Dia. (d)	CL (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
* EHSUS441000S	1	1.5	2.5	50	4	4
* EHSUS442000S	2	3.0	5.0	50	4	4
EHSUS403000S	3	4.5	7.5	50	6	4
EHSUS404000S	4	6.0	10.0	50	6	4
EHSUS405000S	5	7.5	12.5	50	6	4
EHSUS606000S	6	9.0	15.0	50	6	6
EHSUS608000S	8	12.0	20.0	60	8	6
EHSUS610000S	10	15.0	25.0	75	10	6
EHSUS612000S	12	18.0	30.0	75	12	6
EHSUS816000S	16	24.0	40.0	100	16	8
EHSUS820000S	20	30.0	50.0	100	20	8
* EHSSH441000N	1	3	-	50	4	4
* EHSSH441500N	1.5	4	-	50	4	4
* EHSSH442000N	2	5	-	50	4	4
* EHSSH442500N	2.5	6	-	50	4	4
* EHSSH443000N	3	8	-	50	4	4
* EHSSH444000N	4	10	-	50	4	4

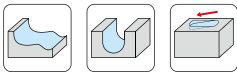
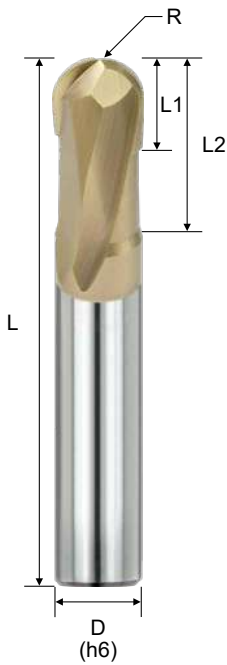
Cutting conditions : Table 002

- * **S** is SICO Coating
- N** is Naco Blue Coating

H700 - Low Helix · Short Flute · Ball Nose · 2F

- SICO Nano coating provides a superior wear and heat resistance.
- Suitable for HRC 50 Hardened Steel, maximum up to HRC 65.
- Due to short cutting length it provides an excellent surface roughness of the work pieces.
- Low helix design is suitable for hardened steel cutting.
- The coating can change to Naco Blue is optional.

EBBUS



Order No.	Radius (R)	Dia. (d)	CL (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
EBBUS241000S	0.50R	1.0	1.0	2	50	4	2
EBBUS241500S	0.75R	1.5	1.5	3	50	4	2
EBBUS202000S	1.00R	2.0	2.0	4	50	6	2
EBBUS203000S	1.50R	3.0	3.0	6	50	6	2
EBBUS204000S	2.00R	4.0	4.0	8	50	6	2
EBBUS205000S	2.50R	5.0	5.0	10	50	6	2
EBBUS206000S	3.00R	6.0	6.0	12	50	6	2
EBBUS208000S	4.00R	8.0	8.0	16	60	8	2
EBBUS210000S	5.00R	10.0	10.0	20	75	10	2
EBBUS212000S	6.00R	12.0	12.0	24	75	12	2
EBBUS216000S	8.00R	16.0	16.0	32	100	16	2

Cutting conditions : Table 003

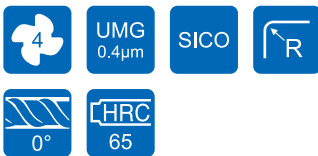
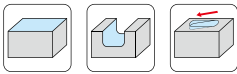
R Tolerance	
R ≤ 3	±0.010
R > 3	±0.015

* is SICO Coating
 is Naco Blue Coating

H700 - High Feed · Short Flute · Corner Radius · 4F

- SICO Nano coating provides a superior wear and heat resistance.
- Suitable for HRC 50 Hardened Steel, maximum up to HRC 65.
- Cutting edges are very strong and wear resistant.
- For High speed and high feed cutting.

EHCUK



Order No.	Dia. (d)	RADIUS (R)	Flute Length (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
EHCUK40200506S	2	0.5R	1.0	6	50	6	4
EHCUK40300508S	3	0.5R	1.5	8	50	6	4
EHCUK40400512S	4	0.5R	2.0	12	60	6	4
EHCUK40400516S	4	0.5R	2.0	16	60	6	4
EHCUK40401012S	4	1.0R	2.0	12	60	6	4
EHCUK40401016S	4	1.0R	2.0	16	60	6	4
EHCUK40600512S	6	0.5R	3.0	12	60	6	4
EHCUK40600515S	6	0.5R	3.0	15	60	6	4
EHCUK40601015S	6	1.0R	3.0	15	60	6	4
EHCUK40601515S	6	1.5R	3.0	15	60	6	4
EHCUK40800520S	8	0.5R	4.0	20	60	8	4
EHCUK40801020S	8	1.0R	4.0	20	60	8	4
EHCUK41000525S	10	0.5R	5.0	25	75	10	4
EHCUK41001025S	10	1.0R	5.0	25	75	10	4
EHCUK41201030S	12	1.0R	6.0	30	75	12	4
EHCUK41202030S	12	2.0R	6.0	30	75	12	4

Cutting conditions : Table 004

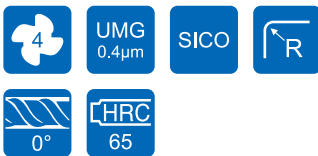
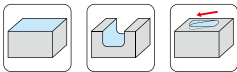
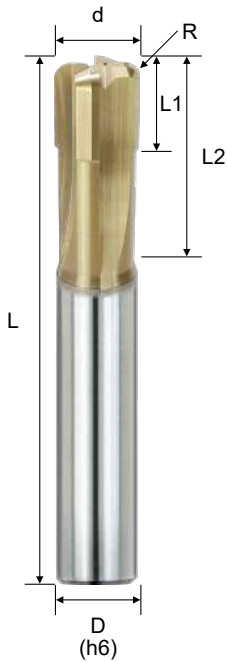
d Tolerance	
d ≤ 12	0 ~ -0.02
d > 12	0 ~ -0.03

R Tolerance	
R < 2	±0.015
R ≥ 2	±0.020

H700 - High Feed · Corner Radius · 4F

- SICO Nano coating provides a superior wear and heat resistance.
- Suitable for HRC 50 Hardened Steel, maximum up to HRC 65.
- Non-Helix Design.
- Cutting edges are very strong and wear resistant.
- The coating can change to Naco Blue is optional.

EHCUS



Order No.	Dia. (d)	Corner Radius (R)	CL (L1)	EFF-L (L2)	OAL (L)	Shank (D)	Flutes (F)
EHCUS441002S	1	0.20R	1	2.5	50	4	4
EHCUS442002S	2	0.25R	2	6.5	50	4	4
EHCUS403005S	3	0.50R	3	7.5	50	6	4
EHCUS404005S	4	0.50R	4	10.0	50	6	4
EHCUS404010S	4	1.00R	4	10.0	50	6	4
EHCUS405010S	5	1.00R	5	12.5	50	6	4
EHCUS406010S	6	1.00R	6	15.0	50	6	4
EHCUS406015S	6	1.50R	6	15.0	50	6	4
EHCUS408010S	8	1.00R	8	20.0	60	8	4
EHCUS408015S	8	1.50R	8	20.0	60	8	4
EHCUS408020S	8	2.00R	8	20.0	60	8	4
EHCUS410010S	10	1.00R	10	25.0	75	10	4
EHCUS410020S	10	2.00R	10	25.0	75	10	4
EHCUS412010S	12	1.00R	12	30.0	75	12	4
EHCUS412020S	12	2.00R	12	30.0	75	12	4
EHCUS412030S	12	3.00R	12	30.0	75	12	4

Cutting conditions : Table 005

* **S** is SICO Coating
N is Naco Blue Coating

d Tolerance	
d ≤ 12	0 ~ -0.02
d > 12	0 ~ -0.03

R Tolerance	
R < 2	±0.015
R ≥ 2	±0.020

Recommended Cutting Conditions

Table 001

H700 Seires EHSSS

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL																																											
CODE	SKT, SKD		SKT, SKD		SKT, SKD																																											
HARDNESS	HRC 45~55		HRC 55~60		HRC 60~70																																											
Vc	129 M/min		98 M/min		65 M/min																																											
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)																																										
6mm	6,890	1,900	5,200	1,000	3,445	505																																										
8mm	5,200	1,900	3,900	1,000	2,600	505																																										
10mm	4,160	1,900	3,120	1,000	2,080	505																																										
12mm	3,445	1,900	2,600	1,000	1,755	505																																										
14mm	2,925	1,800	2,210	1,000	1,430	505																																										
16mm	2,535	1,700	2,015	930	1,294	505																																										
18mm	2,275	1,600	1,885	895	1,151	505																																										
20mm	2,015	1,500	1,495	845	1,040	505																																										
25mm	1,625	1,500	1,242	915	826	505																																										
Milling Amount (mm)	<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> <td>1.5D</td> <td>0.03D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 1.0mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	ap	ae	1.5D	0.05D	1.5D	0.03D	1.0D	0.02D	aeMax ≦ 1.0mm		aeMax ≦ 0.5mm		aeMax ≦ 0.5mm		<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	1.5D	0.03D	1.0D	0.02D	aeMax ≦ 0.5mm		aeMax ≦ 0.5mm		<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.0D</td> <td>0.02D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	1.0D	0.02D	1.0D	0.02D	aeMax ≦ 0.5mm		aeMax ≦ 0.5mm	
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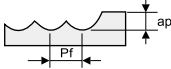
Table 002

H700 Seires EHSUS4, EHSUS6, EHSUS8

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL																																											
CODE	SKT, SKD		SKT, SKD		SKT, SKD																																											
HARDNESS	HRC 45~55		HRC 55~60		HRC 60~70																																											
Vc	208 M/min		195 M/min		129 M/min																																											
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)																																										
6mm	11,050	2,450	10,335	2,000	6,890	1,210																																										
8mm	8,255	2,440	7,735	1,995	5,200	1,215																																										
10mm	6,630	2,450	6,110	1,970	4,160	1,215																																										
12mm	5,525	2,450	5,135	1,985	3,445	1,210																																										
14mm	4,680	2,420	4,420	1,995	2,925	1,200																																										
16mm	4,095	2,420	3,900	2,000	2,535	1,285																																										
18mm	3,640	2,420	3,445	2,000	2,275	1,200																																										
20mm	3,250	2,400	3,055	1,970	2,015	1,180																																										
25mm	2,600	2,400	2,470	1,990	1,625	1,190																																										
Milling Amount (mm)	<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.5D</td> <td>0.05D</td> <td>1.5D</td> <td>0.03D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 1.0mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	ap	ae	1.5D	0.05D	1.5D	0.03D	1.0D	0.02D	aeMax ≦ 1.0mm		aeMax ≦ 0.5mm		aeMax ≦ 0.5mm		<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.5D</td> <td>0.03D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	1.5D	0.03D	1.0D	0.02D	aeMax ≦ 0.5mm		aeMax ≦ 0.5mm		<table border="1"> <tr> <td>ap</td> <td>ae</td> <td>ap</td> <td>ae</td> </tr> <tr> <td>1.0D</td> <td>0.02D</td> <td>1.0D</td> <td>0.02D</td> </tr> <tr> <td colspan="2">aeMax ≦ 0.5mm</td> <td colspan="2">aeMax ≦ 0.5mm</td> </tr> </table>		ap	ae	ap	ae	1.0D	0.02D	1.0D	0.02D	aeMax ≦ 0.5mm		aeMax ≦ 0.5mm	
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Recommended Cutting Conditions

Table 003
H700 Seires EHBUS2

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL					
CODE	SKT, SKD		SKT, SKD		SKT, SKD					
HARDNESS	HRC 45~55		HRC 55~60		HRC 60~70					
Vc	86 ~ 129 m/min		77 ~ 116 m/min		42 ~ 63 m/min					
Radius	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)				
0.5R	41,600	960	39,000	850	33,150	500				
1.0R	40,950	1,900	37,050	1,880	20,150	600				
1.5R	27,300	2,080	24,700	1,880	13,650	625				
2.0R	20,150	2,050	18,200	1,850	10,335	630				
2.5R	16,250	2,060	14,300	1,815	8,255	630				
3.0R	13,650	2,080	12,350	1,880	6,890	630				
4.0R	10,335	1,550	9,295	1,400	5,135	470				
5.0R	8,255	1,250	7,410	1,100	4,095	375				
6.0R	6,890	1,050	6,175	950	3,445	315				
8.0R	5,135	790	4,745	710	2,535	230				
Milling Amount (mm)	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>ap</td> <td>Pf</td> </tr> <tr> <td>0.02D</td> <td>0.1D</td> </tr> </table> 						ap	Pf	0.02D	0.1D
ap	Pf									
0.02D	0.1D									

1. Use as highly rigid and accurate machine as possible.
2. If the rpm available is lower than the recommend condition, please reduce the feed rate to the same ratio.
3. Use long shank type please reduce the rpm and feed rate.
4. The Feed and RPM may be changed depending on the M/C conditions ,lubricating and cooling system.

Recommended Cutting Conditions

Table 004
H700 Seires EHCUK4

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL																			
HARDNESS	HRC 40~50		HRC 50~55		HRC 55~60																			
Vc	90 ~ 130 m/min		55 ~ 78 m/min		36 ~ 52 m/min																			
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)																		
2mm	20,700	5,750	12,420	3,450	8,280	2,310																		
3mm	13,800	6,050	8,280	3,640	5,520	2,420																		
4mm	10,350	7,030	6,210	4,220	4,140	2,810																		
6mm	6,900	6,900	4,140	4,140	2,760	2,760																		
8mm	5,200	6,850	3,105	4,090	2,070	2,730																		
10mm	4,150	6,600	2,500	3,970	1,650	2,640																		
12mm	3,450	6,900	2,070	4,140	1,380	2,760																		
Milling Amount (mm)	<table border="1"> <tr><td></td><td>ae</td><td>ap</td></tr> <tr><td>R ≤ 1</td><td>0.2 x R</td><td>0.025D</td></tr> <tr><td>R > 1</td><td>0.4mm</td><td>0.025D</td></tr> </table>			ae	ap	R ≤ 1	0.2 x R	0.025D	R > 1	0.4mm	0.025D	<table border="1"> <tr><td></td><td>ae</td><td>ap</td></tr> <tr><td>R ≤ 1</td><td>0.1 x R</td><td>0.025D</td></tr> <tr><td>R > 1</td><td>0.2mm</td><td>0.025D</td></tr> </table>			ae	ap	R ≤ 1	0.1 x R	0.025D	R > 1	0.2mm	0.025D		
	ae	ap																						
R ≤ 1	0.2 x R	0.025D																						
R > 1	0.4mm	0.025D																						
	ae	ap																						
R ≤ 1	0.1 x R	0.025D																						
R > 1	0.2mm	0.025D																						

Table 005
H700 Seires EHCUS4

WORKING MATERIAL	HARDENED STEEL		HARDENED STEEL		HARDENED STEEL																			
CODE	SKT, SKD		SKT, SKD		SKT, SKD																			
HARDNESS	HRC 45~55		HRC 55~60		HRC 60~70																			
Vc	65 M/min		39 M/min		26 M/min																			
DIAMETER	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)	R.P.M	FEED (mm/min)																		
1mm	20,670	2,150	12,350	980	8,281	500																		
2mm	10,335	2,145	6,175	980	4,134	500																		
3mm	6,890	2,150	4,160	990	2,756	500																		
4mm	5,200	2,160	3,120	990	2,067	500																		
6mm	4,350	2,150	2,600	990	1,750	500																		
8mm	3,260	2,160	1,950	990	1,310	500																		
10mm	2,600	2,160	1,560	980	1,050	500																		
12mm	2,175	2,190	1,300	980	875	500																		
Milling Amount (mm)	<table border="1"> <tr><td></td><td>ae</td><td>ap</td></tr> <tr><td>R ≤ 2</td><td>0.2 x R</td><td>0.05D</td></tr> <tr><td>R > 2</td><td>0.4mm</td><td>0.05D</td></tr> </table>			ae	ap	R ≤ 2	0.2 x R	0.05D	R > 2	0.4mm	0.05D	<table border="1"> <tr><td></td><td>ae</td><td>ap</td></tr> <tr><td>R ≤ 2</td><td>0.1 x R</td><td>0.05D</td></tr> <tr><td>R > 2</td><td>0.2mm</td><td>0.05D</td></tr> </table>			ae	ap	R ≤ 2	0.1 x R	0.05D	R > 2	0.2mm	0.05D		
	ae	ap																						
R ≤ 2	0.2 x R	0.05D																						
R > 2	0.4mm	0.05D																						
	ae	ap																						
R ≤ 2	0.1 x R	0.05D																						
R > 2	0.2mm	0.05D																						

1. Use as highly rigid and accurate machine as possible.
2. If the rpm available is lower than the recommend condition, please reduce the feed rate to the same ratio.
3. Use long shank type please reduce the rpm and feed rate.
4. The Feed and RPM may be changed depending on the M/C conditions ,lubricating and cooling system.