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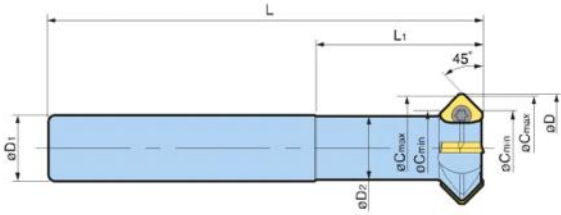
Front & back chamfering

Multi insert type



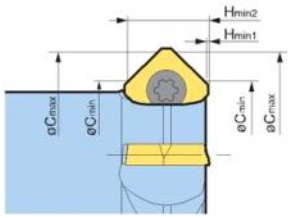
● in the table indicates Long Type

Chamfer øCmin	Chamfer øCmax	Model	øD	øD1	øD2	L	L1	Insert Model	No.of Insert	Insert Clamping Screw Set
10	12	ST12-C1012-45B-20	12.7	12	9.0	93	20	CM04 ···	3	S2SS-T6
		-35 ●				108	35			
11	16	ST12-C1116-45B-25	17.1	12	9.6	98	25	CM05 ···	4	S2TS-T6
		-40 ●				113	40			
15	20	ST16-C1520-45B-50	20.7	16	13.2	123	50			
19	24	ST20-C1924-45B-60	24.7	20	17.2	143	60			
22	32	ST20-C2232-45B-50	32.7	20	19.2	130	50	CM10 ···	4	S4S-T15
		-80 ●				160	80			
32	42	ST32-C3242-45B-65	42.7	32	30.6	175	65			
		-100 ●				211	100			

1. Wrench and screw are included. Inserts are ordered separately (10/pkg).
2. 10 screws and 1 wrench are included in Insert Clamping Screw Set.
3. In case of chamfering with 4 insert type, chatter may occur due to increasing cutting force when plunge cutting. Please try the different types with less inserts, 1 or 2.

Refer to the Cutting Condition on page 130

Detailed dimension



Cutter type	øCmin	øCmax	Hmin1	Hmin2
C1012	10	12	1.0	3.7
C1116	11	16	0.4	6.2
C1520	15	20	0.6	6.3
C1924	19	24	0.6	6.3
C2232	22	32	0.4	12.4
C3242	32	42	0.4	12.4

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■Indexable Inserts

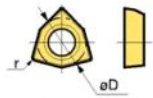

Fig.1

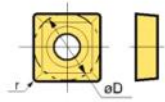

Fig.2

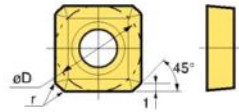

Fig.3

The suffix **SE** designates a sharp cutting edge version.

Fig.	Insert Model	øD	Nose Red. r	P ACP300	M ACP200	K ACP200	N DS20
1	CM0402	3.97	0.2	○	–	–	–
2	CM0502	5	0.2	–	○	○	
	CM0502SE			–	○	–	
3	CM10C1	10	C1	–	○	○	
	CM10C1SE			–	○	–	

1. Inserts are available in packet of 10pcs. Please specify model number and grade. (ie: CM0502-ACP200)
2. It is recommended to regularly replace clamping screws and wrench to ensure the correct clamping force is maintained.

New release, sharp cutting edge insert!! NEW

Sharp cutting edge minimises the generation of burrs. This is especially beneficial when cutting stainless and mild steel materials.

Anti-seizure Lubricant

5g contained

Model	BN-5

Recommended cutting condition

Work Material	Insert Size	Insert Grade	Side Cutting Vc (m/min)	Side Cutting f (mm/tooth)	Plunge Cutting Vc (m/min)	Plunge Cutting f (mm/tooth)	Face Milling (CM10 insert only) Ad≤2mm Vc (m/min)	Face Milling (CM10 insert only) Ad≤2mm f (mm/tooth)
General steel Alloy steel	CM04	ACP300	100 - 300	0.05 - 0.15	100 - 200	0.06 - 0.12	—	—
	CM05	ACP200	100 - 350	0.08 - 0.18	100 - 200	0.06 - 0.12	—	—
	CM10		100 - 350	0.08 - 0.25	100 - 220	0.08 - 0.18	100 - 200	0.1 - 0.2
High-alloy steel	CM04	ACP300	100 - 180	0.05 - 0.15	100 - 180	0.05 - 0.12	—	—
	CM05	ACP200	100 - 200	0.08 - 0.18	100 - 200	0.06 - 0.12	—	—
	CM10		100 - 220	0.08 - 0.22	100 - 250	0.06 - 0.16	100 - 220	0.08 - 0.2
Prehardened steel (Less than HRC40)	CM04	ACP300	50 - 80	0.05 - 0.08	50 - 80	0.04 - 0.10	—	—
	CM05	ACP200	60 - 100	0.06 - 0.10	60 - 100	0.04 - 0.12	—	—
	CM10		60 - 120	0.06 - 0.10	60 - 120	0.04 - 0.15	60 - 100	0.05 - 0.1
Stainless steel	CM04	ACP300	60 - 150	0.05 - 0.18	60 - 150	0.03 - 0.10	—	—
	CM05	ACP200	100 - 200	0.08 - 0.20	80 - 200	0.05 - 0.12	—	—
	CM10	SE	100 - 250	0.08 - 0.30	80 - 220	0.06 - 0.16	80 - 150	0.05 - 0.2
Cast iron	CM04	ACP300	80 - 150	0.05 - 0.20	80 - 150	0.06 - 0.12	—	—
	CM05	ACP200	100 - 200	0.08 - 0.30	100 - 200	0.08 - 0.15	—	—
	CM10		100 - 300	0.08 - 0.40	100 - 300	0.08 - 0.20	100 - 180	0.1 - 0.25
Aluminum	CM04	ACP300	100 - 800	0.05 - 0.20	100 - 600	0.05 - 0.20	—	—
	CM05	DS20	150 - 800	0.08 - 0.30	100 - 800	0.08 - 0.25	—	—
	CM10		200-1,000	0.08 - 0.45	200 -1,000	0.08 - 0.30	100 -1,000	0.05 - 0.3

1. The table is just a reference to determine cutting conditions. It should be adjusted according to the condition of the machine tool and workpiece.
2. Wet cutting is recommended to obtain the good surface quality.
3. In case built-up edge occurs cutting aluminum and stainless steel, use soluble oil.
4. Standard length type (w/o ● models) are reccomended for stainless and pre-hardened steel.

Ultra High Feed Chamfer Mill

C-CUTTER mini

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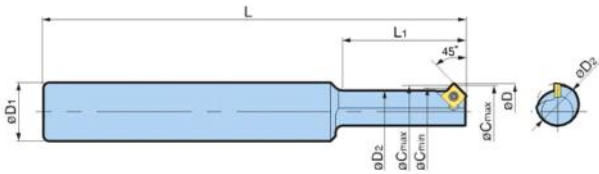
Front & back chamfering

Bolt hole & starting hole for tapping type

Tap size : M8 - M20

Tap hole Chamfering



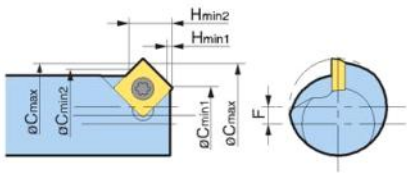
● in the table indicates Long Type

Chamfer øCmin	Chamfer øCmax	Model	øD	øD1	øD2	L	L1	Insert Model	Insert Clamping Screw Set
6.6	8.4	ST10-CM08-45B-19	9.2	10	6.3	81	19	CM04···	S2SS-T6
		-35●				97	35		
8.3	10.5	ST12-CM10-45B-25	11.3	12	8.0	99	25	CM05···	S2TS-T6
		-45●				119	45		
10.0	12.6	ST12-CM12-45B-29	13.4	12	9.7	102	29		
		-53●				126	53		
11.8	14.7	ST16-CM14-45B-33	15.5	16	11.5	107	33		
		-61●				135	61		
13.8	16.8	ST16-CM16-45B-37	17.6	16	13.5	110	37		
		-69●				142	69		
15.2	18.9	ST20-CM18-45B-42	19.7	20	14.9	126	42		
		-78●				162	78		
17.2	21.0	ST20-CM20-45B-46	21.8	20	16.9	129	46		
		-86●				169	86		

1. Wrench and screw are included. Inserts are ordered separately (10/pkg).
2. 10 screws and 1 wrench are included in Insert Clamping Screw Set.
3. For ● Long Type, standard insert is reccomeded rather than "SE" sharp edge insert to avoid chipping.

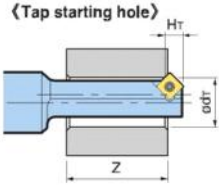
Refer to the Cutting Condition on page 132

Detailed dimension

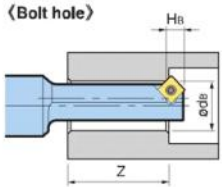


Cutter Type	øCmin1	øCmin2	øCmax	Hmin1	Hmin2	Offset F
CM08	6.4	6.6	8.4	1.0	3.7	1.45
CM10	5.5	8.3	10.5	0.5	5.0	1.65
CM12	7.6	10.0	12.6	0.5	5.2	1.85
CM14	9.7	11.8	14.7	0.5	5.3	2.00
CM16	11.8	13.8	16.8	0.5	5.4	2.05
CM18	13.9	15.2	18.9	0.5	5.7	2.40
CM20	16.0	17.2	21.0	0.5	5.8	2.45

〈Tap starting hole〉



〈Bolt hole〉



Cutter Type	Tap starting hole ødT	Tap starting hole HT	Bolt hole ødB	Bolt hole HB	Z Standard type	Z Long type
CM08	6.8(M8)	3.6	6.6 (M6)	3.7	13	29
CM10	8.5(M10)	4.9	9 (M8)	4.6	17	37
CM12	10.3(M12)	5.0	11 (M10)	4.7	21	45
CM14	12.0(M14)	5.2	–	–	25	53
CM16	14.0(M16)	5.3	14 (M12)	5.3	29	61
CM18	15.5(M18)	5.6	16 (M14)	5.3	33	69
CM20	17.5(M20)	5.6	18 (M16)	5.4	37	77

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■Indexable Inserts

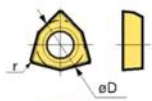


Fig.1

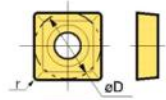
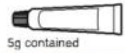


Fig.2

Fig.	Insert Model	øD	Nose Red. r	P	M	K	N
				ACP300		ACP200	DS20
1	**CM0402**	3.97	0.2	○	–	–	–
2	**CM0502**	5	0.2	–	○	○	○

Anti-seizure Lubricant



5g contained

Model	BN-5

1. Inserts are available in packet of 10pcs. Please specify model number and grade. (ie: CM0502-ACP200)
2. It is recommended to regularly replace clamping screws and wrench to ensure the correct clamping force is maintained.

Recommended cutting condition

Work Material	Cutter Type	Insert Grade	Standard Type		●Long Type	
			Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)
General steel Alloy steel	CM08	ACP300	80 - 180	0.03 - 0.10	30 - 80	0.03 - 0.08
	CM10, CM12	ACP200	120 - 200	0.04 - 0.12	30 - 100	0.04 - 0.1
	CM14, CM16		120 - 200	0.04 - 0.15	30 - 100	0.04 - 0.1
	CM18, CM20		120 - 250	0.05 - 0.20	40 - 100	0.05 - 0.12
High-alloy steel	CM08	ACP300	80 - 160	0.03 - 0.08	20 - 80	0.03 - 0.08
	CM10, CM12	ACP200	100 - 180	0.04 - 0.10	30 - 100	0.04 - 0.1
	CM14, CM16		100 - 200	0.04 - 0.10	30 - 100	0.04 - 0.1
	CM18, CM20		100 - 220	0.05 - 0.12	40 - 100	0.05 - 0.12
Prehardened steel (Less than HRC40)	CM08	ACP300	40 - 80	0.03 - 0.08	20 - 80	0.03 - 0.08
	CM10, CM12	ACP200	40 - 80	0.04 - 0.10	30 - 80	0.04 - 0.1
	CM14, CM16		40 - 80	0.04 - 0.10	30 - 80	0.04 - 0.1
	CM18, CM20		40 - 100	0.05 - 0.12	40 - 100	0.05 - 0.12
Stainless steel	CM08	ACP300	60 - 120	0.03 - 0.08	20 - 80	0.03 - 0.08
	CM10, CM12	ACP200	60 - 120	0.04 - 0.10	30 - 100	0.04 - 0.1
	CM14, CM16		60 - 150	0.04 - 0.10	30 - 100	0.04 - 0.1
	CM18, CM20		60 - 150	0.05 - 0.12	40 - 100	0.05 - 0.1
Cast iron	CM08	ACP300	80 - 150	0.03 - 0.08	20 - 100	0.03 - 0.08
	CM10, CM12	ACP200	100 - 180	0.04 - 0.10	30 - 100	0.04 - 0.12
	CM14, CM16		100 - 200	0.04 - 0.10	30 - 120	0.04 - 0.12
	CM18, CM20		100 - 250	0.05 - 0.12	50 - 150	0.05 - 0.15
Aluminum	CM08	ACP300	100 - 500	0.03 - 0.08	20 - 100	0.03 - 0.08
	CM10, CM12	DS20	100 - 600	0.04 - 0.10	30 - 120	0.04 - 0.1
	CM14, CM16		100 - 800	0.04 - 0.15	30 - 120	0.04 - 0.1
	CM18, CM20		100 - 800	0.05 - 0.20	40 - 150	0.05 - 0.12

Vc: Cutting speed (m/min.) f: Feed per revolution (mm/rev.)

1. The table is just a reference to determine cutting conditions.
   It should be adjusted according to the condition of the machine tool and workpiece.
2. Wet cutting is recommended to obtain the good surface quality.
3. In case built-up edge occurs cutting aluminum and stainless steel, use soluble oil.
4. Standard length type (w/o ● models) are reccomended for stainless and pre-hardened steel.

Ultra High Feed Chamfer Mill

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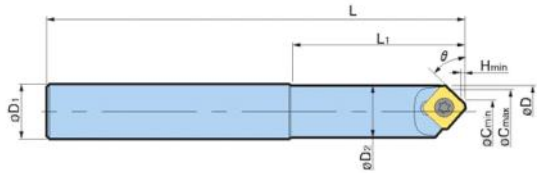
Front chamfering



● in the table indicates Long Type

Chamfer øCmin	Chamfer øCmax	Chamfering angle θ	Model	øD	øD1	øD2	L	L1	Hmin	Insert Model	Insert Clamping Screw Set
2	7	45°	ST10-C0207-45-20	8.1	10	7.8	81	20	0.4	CM05···	S2TS-T6
			-35 ●				96	35			
5	15	45°	ST16-C0515-45-50	15.8	16	15.2	122	50	0.4	CM10···	S4S-T15
2	14	30°	ST16-C0214-30-40	15.9	16	15.4	105	40	0.2	CM10···	
9	16	60°	ST16-C0916-60-40	16.5	16	15.6	105	40	0.8	CM10···	

1. Wrench and screw are included. Inserts are ordered separately (10/pkg).
2. 10 screws and 1 wrench are included in Insert Clamping Screw Set.
3. Centering is not possible.

■Indexable Inserts

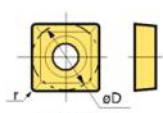


Fig.1

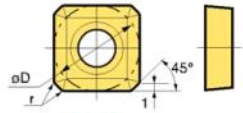


Fig.2

Fig.	Insert Model	øD	Nose Red. r	P	M	K	N
				ACP200			DS20
1	CM0502	5.0	0.2	○			○
2	CM10C1	10.0	C1	○			○

Anti-seizure Lubricant

5g contained

Model	BN-5

1. Inserts are available in packet of 10pcs. Please specify model number and grade. (ie: CM0502-ACP200)
2. It is recommended to regularly replace clamping screws and wrench to ensure the correct clamping force is maintained.

Recommended cutting condition

Work Material	Insert Model	Insert Grade	Plunge Cutting	
			Vc (m/min)	f (mm/rev)
General steel Alloy steel	CM05	ACP200	100 - 250	0.08 - 0.18
	CM10			0.08 - 0.20
Prehardened steel (Less than HRC40)	CM05	ACP200	60 - 150	0.08 - 0.15
	CM10			0.08 - 0.18
Stainless steel	CM05	ACP200	60 - 120	0.06 - 0.10
	CM10			0.08 - 0.15
Cast iron	CM05	ACP200	80 - 200	0.08 - 0.18
	CM10			0.08 - 0.25
Aluminum	CM05	DS20	100 -1,000	0.08 - 0.25
	CM10			0.08 - 0.35

1. The table is just a reference to determine cutting conditions.
   It should be adjusted according to the condition of the machine tool and workpiece.
2. Wet cutting is recommended to obtain the good surface quality.
3. In case built-up edge occurs cutting aluminum and stainless steel, use soluble oil.
4. Standard length type (w/o ● models) are reccomended for stainless and pre-hardened steel.

Chamfer cutter

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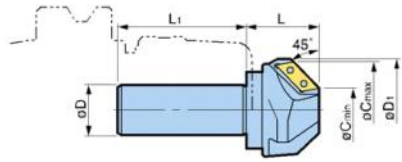
One C-Cutter to cover a wide chamfering range.

ø5 - ø25 | ø10 - ø40 | ø30 - ø60 | ø50 - ø100

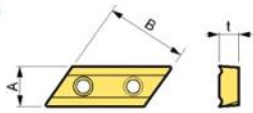


Chamfer		Model	ød	ød1	L	L1	No. of Insert	Insert Model	Screw Set	Wrench
øCmin.	øCmax.									
5.0	25.0	**ST20-C0525**	20	33	25	48	1	CW12	S2S-B	FLR-13S
10.0	40.0	**ST25-C1040**	25	45	35	58	2	CW19	S3S	FLR-20S
30.0	60.0	**ST32-C3060**	32	65	45	80	3			
50.0	100.0	**ST42-C50100**	42	106	70	80	3	CW31	S5S	FLR-28S

1. Inserts are ordered separately. An Insert Clamping key and Screws are included.
2. 10pcs. of screws and 1pce. of wrench are included in Screw Set.

C-Cutter with **coolant through holes** is available. Please add **"C"** after each model number when ordering.
Example : **ST20-C0525C**

■Exclusive indexible



A=Non-coated **AZX**=TiCN+TiAlN multilayer coating

Insert Model	A	B	t	P30	P20
				A	AZX
CW1206	6.35	12.7	2.7	○	○
CW1909	9.525	19.05	4.5	○	○
CW3115	15.875	31.75	7.0	○	○

1. Insert is available form 1 pce.
2. Insert set is available in packs of 10 pcs. Please add "S" before each model number when ordering.
Example:**SCW1206A**

Recommended cutting condition

Work Material	Cutter Type	Max. Chamfer	Insert Grade	Side Cutting		Plunge Cutting	
				Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)
General steel Alloy steel	**C0525**	C2	**AZX**	80	0.15	50	0.1
	C1040	C3		120	0.3	90	0.15
	C3060 C50100	C4		150	0.45	150	0.45
Stainless steel	**C0525**	C1.5	**A**	60	0.1	30	0.08
	C1040	C2		60	0.2	40	0.12
	C3060 C50100	C3		60	0.3	60	0.3
Cast iron	**C0525**	C2	**AZX**	50	0.15	40	0.1
	C1040	C3		90	0.2	60	0.15
	C3060 C50100	C4		120	0.6	120	0.5
Aluminum	**C0525**	C2.5	**A**	100	0.15	80	0.1
	C1040	C4		160	0.3	100	0.2
	C3060 C50100	C5		200	0.6	220	0.6

Vc: Cutting speed (m/min.) f: Feed per revolution (mm/rev.)

1. Cutting condition is the same for both non-coated and coated inserts. Coated inserts will achieve better surface finish and extended insert life.
2. Reduce cutting speed if a larger chamfer than the max. amount shown in the table is required.
3. Peck feed is necessary in case cutting chips are too long.
4. A High rigidity toolholder is recommended, such as BIG HMC or MEGA-D Chuck.

Center and Chamfer in one

CENTER BOY

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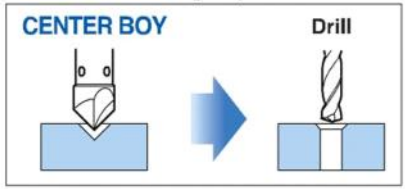
Centering and Chamfering

Accurate centering and chamfering can be obtained in a single operation.



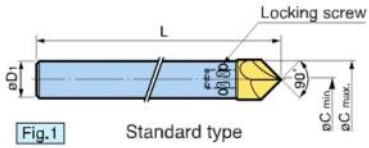


Fig.1 Standard type

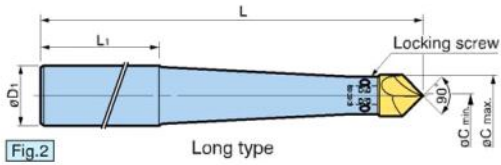


Fig.2 Long type

● in the table indicates Long Type

Chamfer øCmin	Chamfer øCmax	Model	Fig.	øD1	L	L1	Insert Model	Spare Locking Screw
0.9	10	**ST10-CBY09010**	1	10	150	–	CBY09010	H0403-5P
0.9	13	**ST12-CBY09013**		12			CBY09013	
1.0	16	**ST16-CBY09016**		16	180		CBY09016	H0504-5P
1.5	22	**ST20-CBY09022**		20			CBY09022	H0505-5P
0.9	13	**ST20-CBY09013-220** ●	2	20	220	120	CBY09013	H0403-5P
		-260 ●			260			
1.5	22	**ST32-CBY09022-260** ●		32	260	120	CBY09022	H0505-5P
		-300 ●			300			

1. 2 pcs of Inserts are included as standard accessories.
2. 2 pcs. of Locking Screws are included. Spare Locking Screws are available in a packet of 5 pcs.

⚠ Hand feed is not recommended.

■Insert

Model	CENTER BOY
CBY09010	ST10-CBY09010
CBY09013	ST12-CBY09013 / ST20-CBY09013
CBY09016	ST16-CBY09016
CBY09022	ST20-CBY09022 / ST32-CBY09022

1. Inserts are available in packages of 5 pcs.
2. Insert Grade is HSS with TiN coating.

Highly accurate Replaceable Insert

Recommended cutting condition

Work Material	Cutter Type	Chamfering Vc (m/min)	Chamfering f (mm/rev)	Centering Vc (m/min)	Centering f (mm/rev)
General steel Alloy steel	Standard	20-35	0.10	25-50	0.08
	long	20-35	0.08	20-50	0.08
Stainless steel	Standard	15-30	0.08	20-40	0.08
	long	15-30	0.06	15-30	0.06
Cast iron	Standard	20-40	0.12	30-45	0.10
	long	20-40	0.10	30-45	0.10
Aluminum	Standard	45-60	0.15	50-65	0.15
	long	40-60	0.12	40-60	0.12

Vc: Cutting speed (m/min.) f: Feed per revolution (mm/rev.)

1. The table is just a reference to determine cutting conditions. It should be adjusted according to the condition of the machine tool and workpiece.
2. In case vibration occurs, reduce cutting speed V.
3. Tool extension should be as short as possible.

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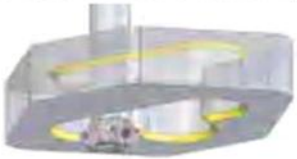
C-CUTTER mini

■Front & Back chamfering for Stainless



Material : X5CrNi18-9
Chamfer : 3mm x 45°
Feed : 0.1mm/tooth

	Competitor's tool (with TiAlN coated carbide insert)	C-CUTTER mini (ST20-C2232-45B-50)
Chamfering dia.	ø30	ø28
Number of tooth	1	4
Cutting speed(m/min)	140	180
Spindle speed(min^{-1})	1,490	2,050
Feed(mm/min)	149	819
Result	**5 times better Cutting efficiency**	

■Chamfering for Aluminum

Material : Al-Si7Mg(Fe)
Chamfer : 0.5mm x 45°
Feed : 0.1mm/tooth

	Competitor's tool	C-CUTTER mini (ST12-C1116-45B-25)
Chamfering dia.	ø40	ø12
Number of tooth	3	4
Cutting speed(m/min)	200	600
Spindle speed(min^{-1})	1,590	15,920
Feed(mm/min)	477	6,370
Result	**13 times better Cutting efficiency**	

■Front & back chamfering of starting holes for M8 tapping

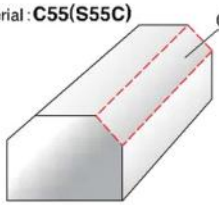
Material : FC250
Tapped hole : ø6.6
Chamfering dia. : ø8.4

	Competitor's tool (with Non-coated carbide insert)	C-CUTTER mini (ST10-CM08-45B-19)
Cutting speed(m/min)	30	150
Spindle speed(min^{-1})	1,140	5,680
Feed per tooth(mm/rev)	0.05	0.1
Feed(mm/min)	57	568

C-CUTTER

■C3 traverse chamfering

Workmaterial : **C55(S55C)**



High cutting parameter was achieved without chattering.

C-CUTTER	**ST25-C1040**
Insert Model	CW1909A
Spindle speed	3,000 min^{-1}
Feed	1,800mm/min