

**MODERN FACILITIES TO BUILD UP
HIGH QUALITY PRODUCTION**



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● Awaji Factory No.1



● Awaji Factory No.5

Indexable Insert Endmill
FULLCUT MILL PAT.
Type FCR / FCM

Cutter Dia. : $\phi 12 - \phi 80$



Indexable insert endmills with both excellent sharpness and toughness, achieving the performance of solid endmills.

No. 134 For FULLCUT MILL, please refer to Catalog



- BBT and BDV Shank type
- HSK Shank type
- BIG COROMANT CAPTO type
- Cylindrical Shank type



BIG DAISHOWA SEIKI CO LTD

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JQA-QMA11602
AWAJI No.1 Factory
JQA-QM3913
FA Dept.

CATALOG No.EXm201-0710-2

Subject to technical changes by further developments.



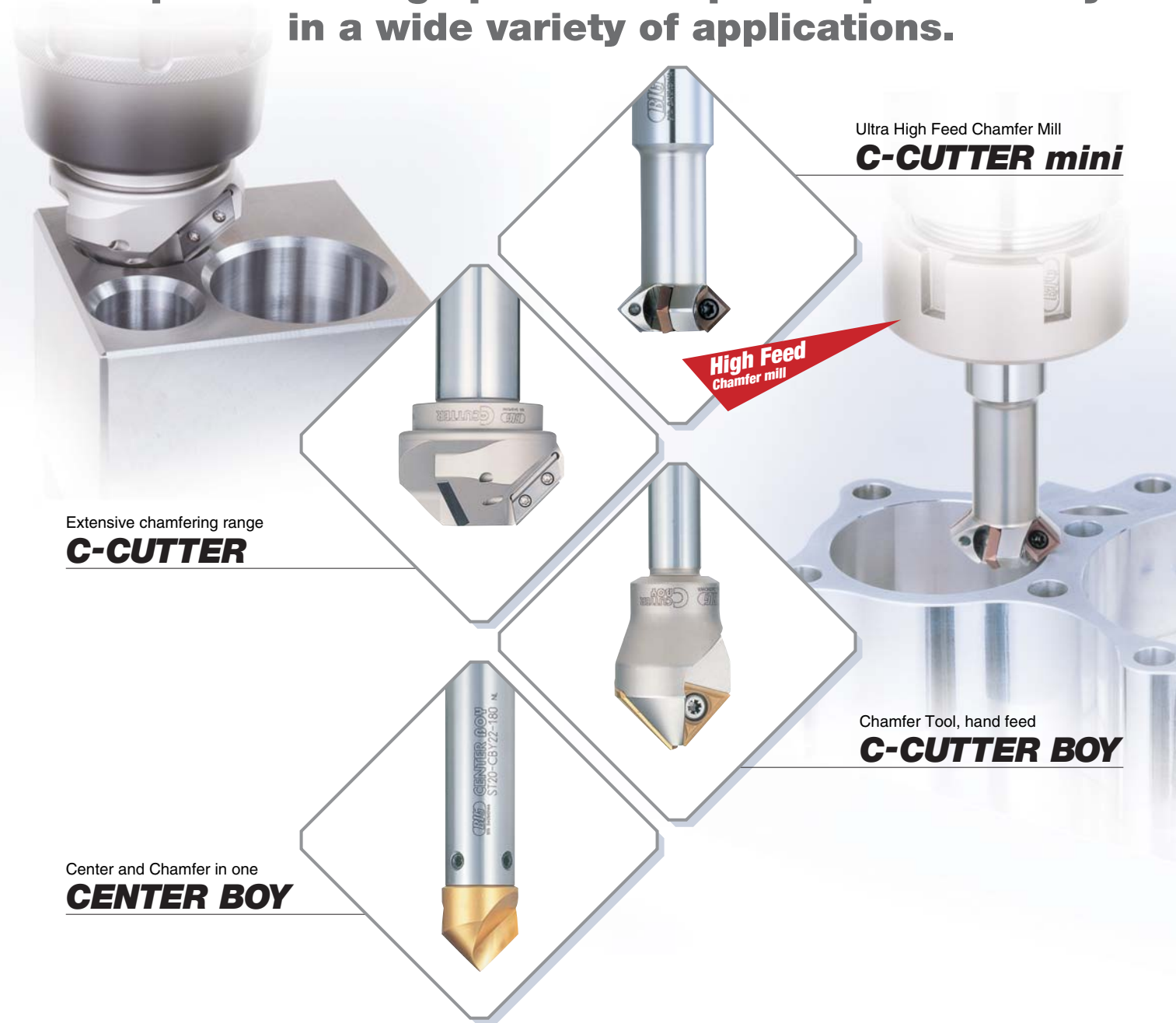
CHAMFERING TOOLS

BIG DAISHOWA SEIKI CO LTD

CATALOG No. **EXm201**

Breaking edge technology

Specialist range provides improved productivity in a wide variety of applications.



Ultra High Feed Chamfer Mill
C-CUTTER mini

High Feed Chamfer mill

Extensive chamfering range
C-CUTTER

Chamfer Tool, hand feed
C-CUTTER BOY

Center and Chamfer in one
CENTER BOY

BIG CHAMFERING TOOLS

BIG DAISHOWA

INDEX



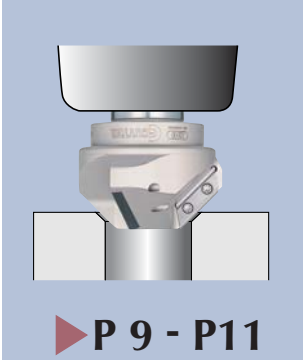
Ultra High Feed Chamfer Mill

C-CUTTER mini

For multi-functional cutting



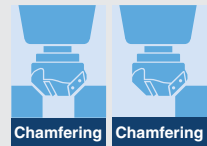
▶ P 2 - P 8



Extensive chamfering range

C-CUTTER

Reduced number of tool holders and machining time by wide chamfering range.



30° & 60° chamfering types are newly introduced! **NEW**

▶ P 9 - P11



Chamfer Tool, hand feed

C-CUTTER BOY

Carbide insert and support pad improve chamfering in less rigid bench drilling machine.



For manual bench drilling machine

▶ P12



Center and Chamfer in one

CENTER BOY

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



▶ P13 - P14



For multi-functional cutting



C-CUTTER mini

Ultra High Feed Rate!
Increases the feed rate up to 400% using 4 Inserts!

(Compared with competitor's cutter)



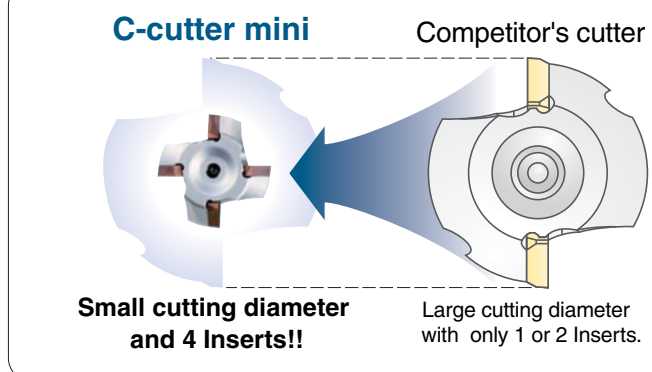
Cutting efficiency is improved by **8 times.**

Work material : C55
Chamfering amount : 1mm x 45°
Feed per tooth : 0.1mm

	Competitor's Tool	C-cutter mini (ST12-C1116-45B-25)
Chamfering dia.	ø29	ø13.5 <small>Small dia.</small>
Number of teeth	2	4 UP
Cutting speed (m/min)	150	300 UP
Spindle speed (min ⁻¹)	1,646	7,040 UP
Feed (mm/min)	329	2,820 8.5x Higher

4 Inserts, small diameter and new coating achieve **Triple effect.**

- Effect 1** Superb design. Ultra high feed by 4 Inserts. Compared with 1 or 2 Inserts per cutter, a 4 Insert cutter multiplies feed rate.
- Effect 2** Increased Spindle speed by Ultra compact diameter. A smaller tool diameter means faster spindle speeds.
- Effect 3** Latest coating [ACP200] increases the Cutting speed. Wear resistant multi layer PVD coating increases the cutting speed!!



C-cutter mini **Competitor's cutter**

Small cutting diameter and 4 Inserts!! Large cutting diameter with only 1 or 2 Inserts.

Considerably Improved!!
Feed rate = $\frac{\text{UP Spindle speed}}{\pi \times \text{UP Cutting diameter (Small dia.)}} \times \text{Feed per tooth} \times \text{UP Number of teeth}$

World smallest hex insert

Highly-efficient back chamfering from 6mm starting hole diameter. 3-corner insert saves cost.



World's smallest
Inscribed circle ø3.97

High speed back-chamfering!!

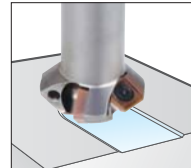
High speed back-chamfering reduces hand de-burring!!



Face milling is possible even with this chamfering cutter

Minor cutting edge allows light face milling.

(Possible only with 45 degree chamfering type with 10mm square insert)

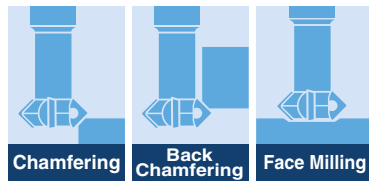


BIG
BIG DAISHOWA

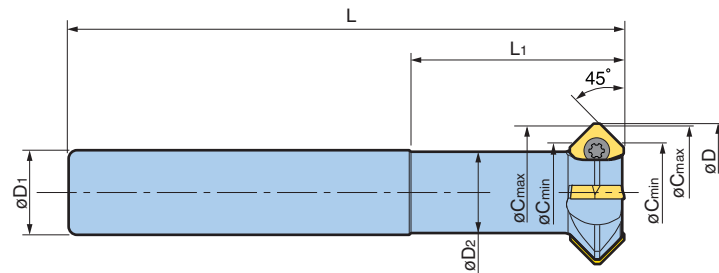
Ultra High Feed Chamfer Mill

Front & back chamfering

Multi insert type



World's smallest
Hexagon insert



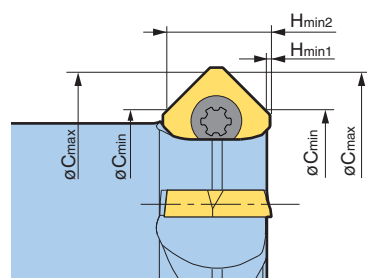
Chamfer		Model	øD	øD1	øD2	L	L1	Insert Model	No. of Insert	Insert Clamping Screw Set
øCmin	øCmax									
10	12	ST12-C1012-45B-20	12.7	12	9.0	93	20	CM04 ...	3	S2SS-T6
		-35				108	35			
11	16	ST12-C1116-45B-25	17.1	12	9.6	98	25	CM05 ...	4	S2TS-T6
		-40				113	40			
15	20	ST16-C1520-45B-50	20.7	16	13.2	123	50	CM10 ...	4	S4S-T15
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	CM10 ...	4	S4S-T15
		-100				211	100			

- Wrench and screw are included. Inserts are ordered separately (10/pkg).
- 10 screws and 1 wrench are included in Insert Clamping Screw Set.
- When plunge cutting chatter may occur due to increased cutting force. Please reduce the number of insert to 1 or 2.

For cutting conditions, refer to the table on page 4.

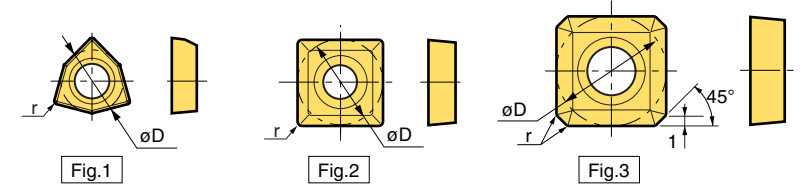
Please refer to Inserts : P4

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

Indexable Inserts



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

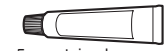
Fig.	Insert Model	øD	Nose r	P	M	K	N
				ACP300	ACP200	DS20	
1	CM0402	3.97	0.2	○	-	-	-
2	CM0502	5	0.2	-	○	-	○
	CM0502SE			-	○	-	-
3	CM10C1	10	0.2	-	○	-	○
	CM10C1SE			-	○	-	-

- Inserts are available in packet of 10pcs. Please specify model number and grade. (ie: CM0502-ACP200)
- 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		Plunge Cutting		Face Milling (CM10 insert only)	
			Vc (m/min)	f (mm/tooth)	Vc (m/min)	f (mm/tooth)	Vc (m/min)	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	ACP200	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	ACP200	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	ACP200	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	ACP200	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	ACP200	150 - 800	0.08 - 0.30	100 - 800	0.08 - 0.25	—	—
	CM10	DS20	200-1,000	0.08 - 0.45	200 -1,000	0.08 - 0.30	100 -1,000	0.05 - 0.3

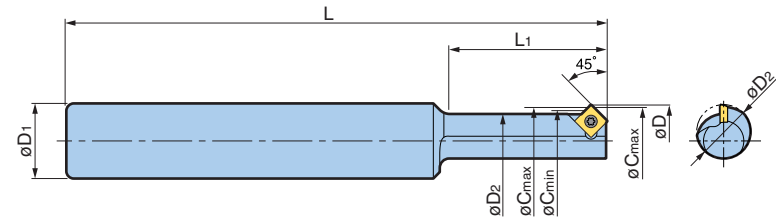
Vc: Cutting speed (m/min.) f: Feed per revolution (mm/rev.)

- The table is just a reference to determine cutting conditions. It should be adjusted according to the condition of the machine tool and workpiece.
- Wet cutting is recommended to obtain the good surface quality.
- In case built-up edge occurs cutting aluminum and stainless steel, use soluble oil.

Front & back chamfering

Bolt hole & starting hole for tapping type

Tap size : M8 - M20



● in the table indicates Long Type

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

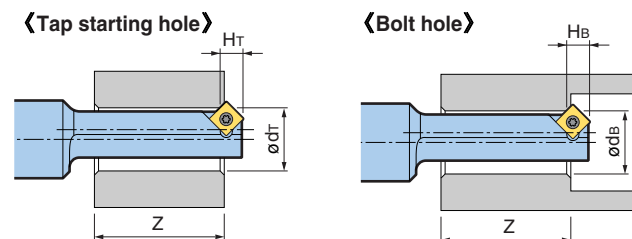
1. Wrench and screw are included. Inserts are ordered separately (10/pkg).
2. 10 screws and 1 wrench are included in Insert Clamping Screw Set.
3. For ● Long Type, standard insert is recommended rather than "SE" sharp edge insert to avoid chipping.

For cutting conditions, refer to the table on page 6.

Please refer to Inserts : P6

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



Cutter Type	Tap starting hole		Bolt hole		Z	
	ødT	Ht	ødB	Hb	Standard type	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

Indexable Inserts

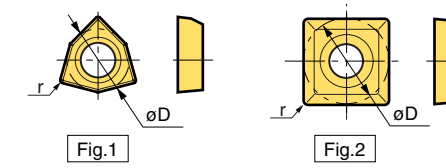
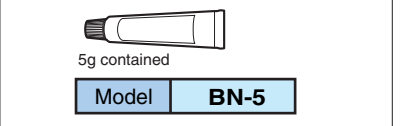


Fig.	Insert Model	øD	Nose r	P	M	K	N
				ACP300	ACP200	DS20	
1	CM0402	3.97	0.2	○	-	-	-
2	CM0502	5	0.2	-	○	-	○

Anti-seizure Lubricant



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.

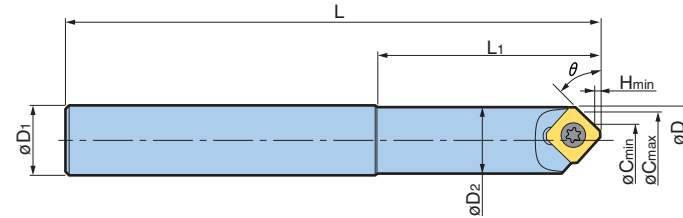
Recommended cutting condition

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. Shorter models (w/o ●) are recommended for stainless and pre-hardened steel.

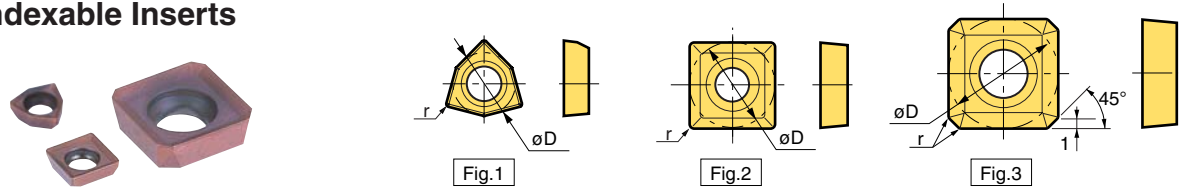
Front chamfering



Chamfer phi Cmin	Chamfer phi Cmax	Chamfering angle theta	Model	phi D	phi D1	phi D2	L	L1	Hmin	Insert Model	Insert Clamping Screw Set
2	7	45°	ST10-C0207-45-20 -35	8.1	10	7.8	81 96	20 35	0.4	CM05...	S2TS-T6
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



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

Fig.	Insert Model	phi D	Nose r	P	M	K	N
				ACP300	ACP200	DS20	
1	CM0402	3.97	0.2	○	-	-	-
2	CM0502	5	0.2	-	○	○	○
	CM0502SE			-	○	-	-
3	CM10C1	10	0.2	-	○	○	○
	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

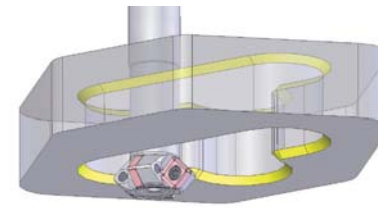
Work Material	Insert Model	Insert Grade	Plunge Cutting	
			Vc (m/min)	f (mm/rev)
General steel Alloy steel	CM05	ACP200	100 - 250	0.08 - 0.18
	CM10			0.08 - 0.20
Prehardened steel (Less than HRC40)	CM05	ACP200	60 - 150	0.08 - 0.15
	CM10			0.08 - 0.18
Stainless steel	CM05	ACP200	60 - 120	0.06 - 0.10
	CM10			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

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.

Application example

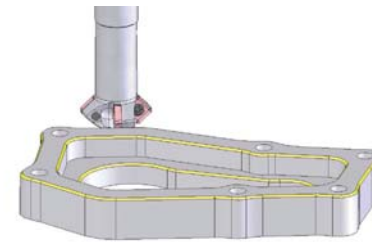
Front & Back chamfering for Stainless



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.	phi 30	phi 28
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.	phi 40	phi 12
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 : phi 6.6
 Chamfering dia. : phi 8.4

	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

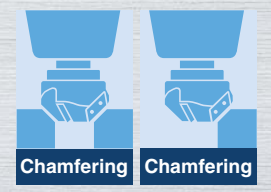
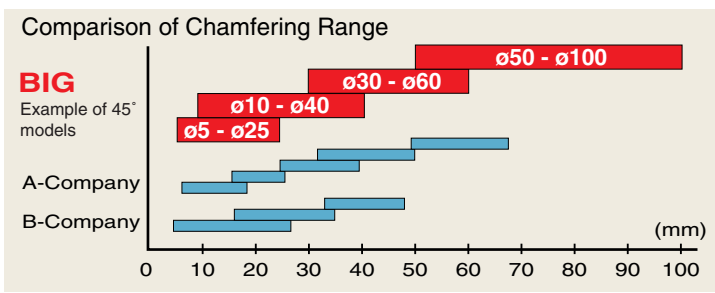
Extensive chamfering range

C-CUTTER

Reduced number of tool holders and machining time by wide chamfering range.

One C-Cutter to cover a wide chamfering range

The wide chamfering range saves on the number of tool holders required and thus tool changing times. Effective use of magazine pots and shorter machining times are achievable.

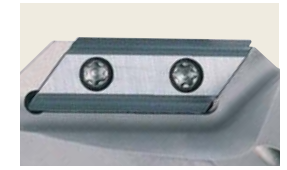


30° & 60° chamfering types are newly introduced!



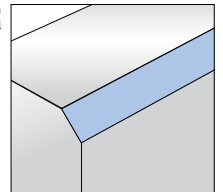
Double-screwed exclusive indexable inserts

Parallelogram shaped long inserts can achieve the ideal cutting performance for chamfering. With double screws, strong and reliable clamping is achieved.

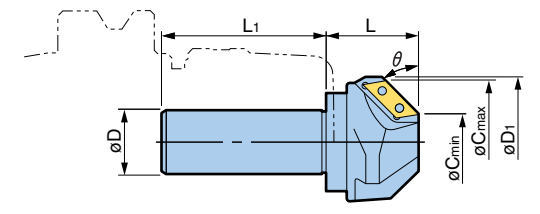


Rigid construction of C-CUTTER eliminates vibration during radial / contour chamfering

For radial / contour chamfering within C5, C-CUTTER mini is recommended.



Cylindrical Shank Coolant-through hole



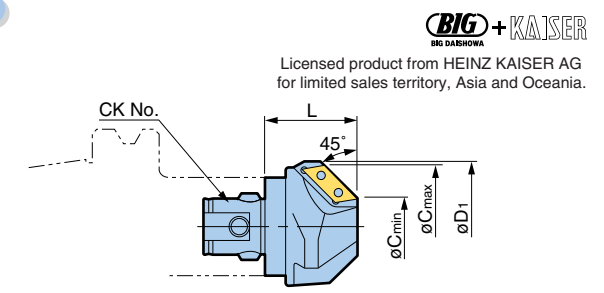
Chamfering angle θ	Chamfer		Model	ϕD	ϕD_1	L	L ₁	No. of Insert	Insert Model	Screw Set	Wrench
	$\phi C_{min.}$	$\phi C_{max.}$									
30°	16	52	ST32-C1652C-30 NEW	32	68	48	80	2	CW19	S3S	FLR-20S
	50	85	ST42-C5085C-30 NEW	42	96	52	80	3	CW19	S3S	FLR-20S
45°	5	25	ST20-C0525C	20	33	25	48	1	CW12	S2S-B	FLR-13S
	10	40	ST25-C1040C	25	45	35	58	2	CW19	S3S	FLR-20S
	30	60	ST32-C3060C	32	65	45	80	3	CW19	S3S	FLR-20S
60°	50	100	ST42-C50100C	42	106	70	80	3	CW31	S5S	FLR-28S
	14	34	ST25-C1434C-60 NEW	25	39	37	58	2	CW19	S3S	FLR-20S
	30	50	ST32-C3050C-60 NEW	32	54	45	80	3	CW19	S3S	FLR-20S
	45	65	ST32-C4565C-60 NEW	32	69	50	80	3	CW19	S3S	FLR-20S

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.

For cutting conditions, refer to the table on page 11

Please refer to Inserts : P11

CKB Shank for CK BORING SYSTEM Coolant-through hole



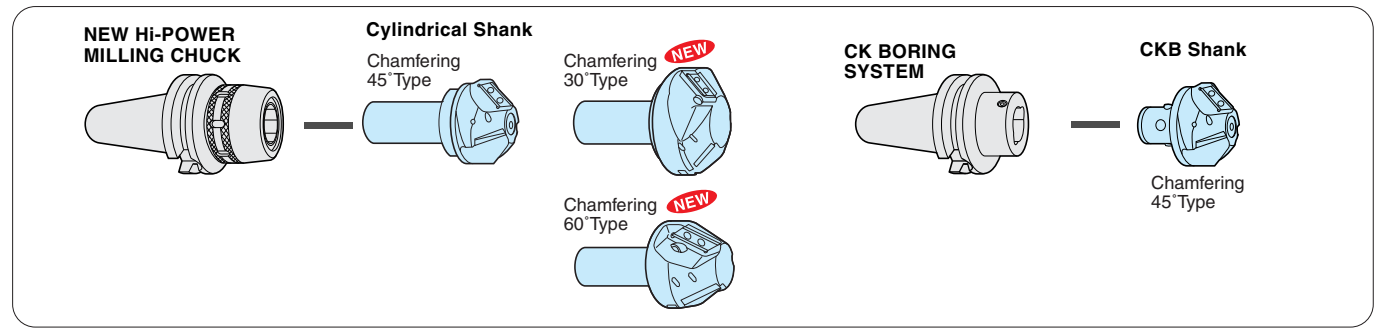
Chamfering angle	Chamfer		Model	CK No.	ϕD_1	L	No. of Insert	Insert Model	Screw Set	Wrench
	$\phi C_{min.}$	$\phi C_{max.}$								
45°	5	25	CKB2-C0525C	2	28.5	25	1	CW12	S2S-B	FLR-13S
	10	40	CKB4-C1040C	4	45	35	2	CW19	S3S	FLR-20S
	30	60	※CKB5-C3060	5	65	40	3	CW19	S3S	FLR-20S
	50	100	CKB6-C50100C	6	106	65	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.
3. Models marked with ※ does not have a through coolant hole.

For cutting conditions, refer to the table on page 11

Please refer to Inserts : P11

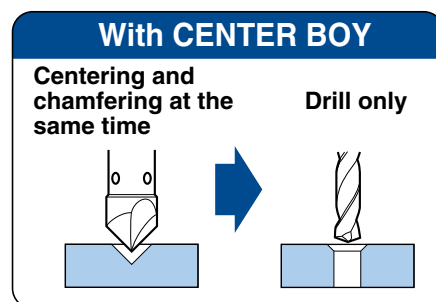
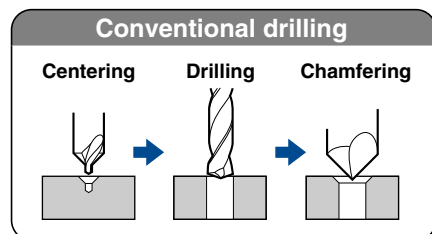
2 Types of shank are available



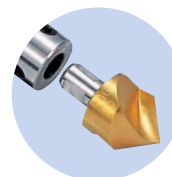
CENTER BOY

Accurate Centering and chamfering can be obtained in a single operation !!

Ease of operation shortens cycle time



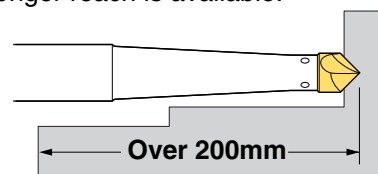
Highly accurate Replaceable Insert



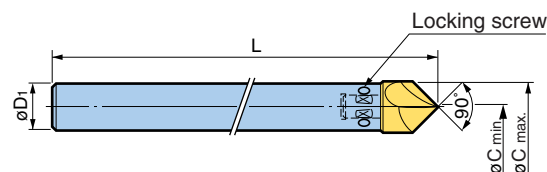
- Sharp cutting with optimum cutting edge.
- No more regrinding is necessary with Replaceable Insert.
- Minimum interference with slim extended shank.

Long Type avoids interference NEW

200mm or longer reach is available.



Standard type

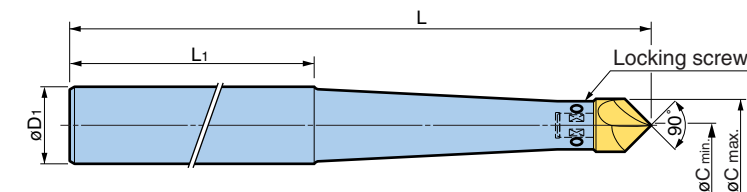


Chamfer		Model	øD1	L	Insert Model	Spare Locking Screw
øCmin	øCmax					
0.9	10	ST10-CBY09010	10	150	CBY09010	H0403-5P
0.9	13	ST12-CBY09013	12			
1.0	16	ST16-CBY09016	16	180	CBY09016	H0504-5P
1.5	22	ST20-CBY09022	20			

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.

Long type



Chamfer		Model	øD1	L	L1	Insert Model	Spare Locking Screw
øCmin	øCmax						
0.9	13	ST20-CBY09013-220	20	220	120	CBY09013	H0403-5P
		-260					
1.5	22	ST32-CBY09022-260	32	260	120	CBY09022	H0505-5P
		-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.

Recommended cutting conditions

Work Material	Cutter Type	Chamfering		Centering	
		Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)
General 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.