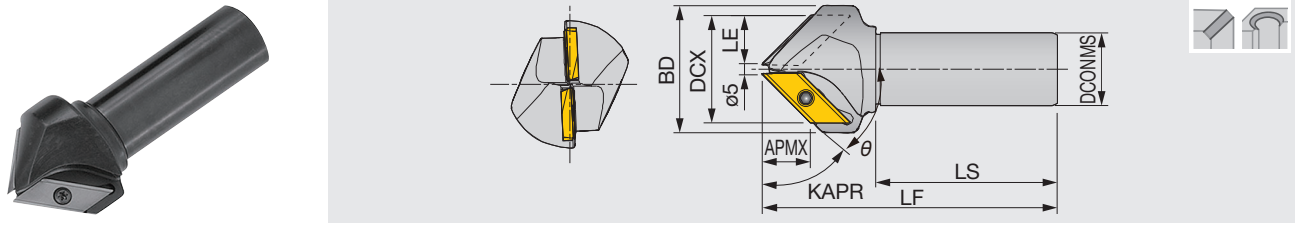


ECC31

Chamfering endmill, screw clamp system, for large parallelogram inserts



Designation	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005R-30	34	1	60°	30°	40	14.5	25.5	32	80	130.2	XCET3104...
ECC31005R-45	46	2	45°	45°	56	20.5	20.5	32	80	130.1	XCET3104...
ECC31005R-60	55	2	30°	60°	72	25.5	14.5	32	80	130.1	XCET3104...

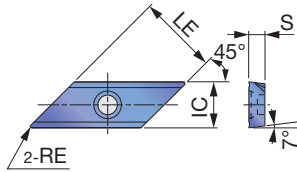
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ECC31...	CSTB-5S	M-1000	T-20D

* Recommended clamping torque: CSTB-5S=5

INSERT

XCET31



	P	M	K	N	S	H
Steel	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆
Stainless	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆
Cast iron	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆
Non-ferrous	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆
Superalloys	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆
Hard materials	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆	★☆☆

★ : First choice
☆ : Second choice

Designation	RE	Coated					Cermet	Un-coated	LE	IC	S
		AH3135	AH330	AH120	NS740	UX30					
XCET310404ER	0.4	●	●	●	●	●			22	12.7	4.5

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	No. of revolutions: <i>n</i> (min-1)	Feed per tooth: <i>fz</i> (mm/t)
P	Carbon steels S55C, etc. C55, etc. Alloy steels SCM440, etc. 42CrMo4, etc. < 300 HB	NS740	1000 - 3000 - 7000	0.1 - 0.25
		UX30	700 - 2000 - 4900	0.1 - 0.25
M	Die steels SKD61, etc. X40CrMoV5-1, etc. < 300 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.2
		AH3135	1000 - 3000 - 7000	0.1 - 0.25
K	Stainless steels SUS304, etc. X5CrNi18-10, etc. < 250 HB	AH3135	1000 - 3000 - 7000	0.1 - 0.25
		AH330	1000 - 3000 - 7000	0.1 - 0.25

Notes:

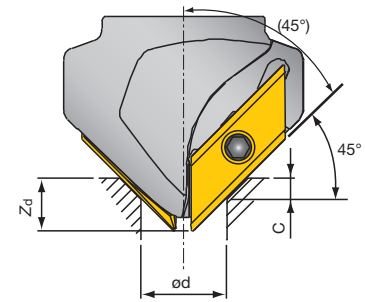
- When the hole diameter to be chamfered is small or the cutting edges near the front end of tool are used, use at higher side of the revolution range shown in the Table.
In contrast, when the hole diameter to be chamfered is large or the cutting edges far from the tool's front end are used, use the lower side of the revolution range shown in the Table.

- When chamfering a small diameter hole (smaller than $\phi 10$ mm) in a plungemilling mode, peck-feeding should not be used.
- When the hole diameter to be chamfered is smaller than $\phi 10$ mm or the cutting edges near the tool's front end are used, the feed should be set within 0.15 mm/t.

Guidelines for programming

Z-axis plunging depth Z_d (mm) in 45° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	3	4	5
5	0.7	1.2	1.7	2.2	3.2	-	-
6	1.2	1.7	2.2	2.7	3.7	-	-
6.8	1.6	2.1	2.6	3.1	4.1	-	-
8	2.2	2.7	3.2	3.7	4.7	-	-
8.5	2.4	2.9	3.4	3.9	4.9	-	-
10	3.2	3.7	4.2	4.7	5.7	6.7	7.7
10.2	3.3	3.8	4.3	4.8	5.8	6.8	7.8
12	4.2	4.7	5.2	5.7	6.7	7.7	8.7
14	5.2	5.7	6.2	6.7	7.7	8.7	9.7
16	6.2	6.7	7.2	7.7	8.7	9.7	10.7
17.5	6.9	7.4	7.9	8.4	9.4	10.4	11.4
20	8.2	8.7	9.2	9.7	10.7	11.7	12.7
21	8.7	9.2	9.7	10.2	11.2	12.2	13.2
24	10.2	10.7	11.2	11.7	12.7	13.7	14.7
30	13.2	13.7	14.2	14.7	15.7	16.7	17.7
33	14.7	15.2	15.7	16.2	17.2	18.2	19.2
36	16.2	16.7	17.2	17.7	18.7	19.7	-
42	19.2	19.7	20.2	-	-	-	-

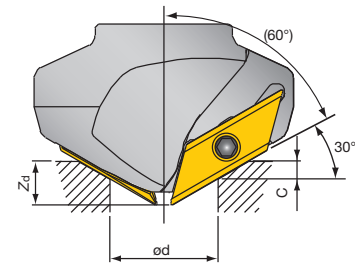


Tool: ECC31005R-45

Note: When the hole depth is smaller than the Z-axis plunging depth (Z_d), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Z_d (mm) in 30° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)						
	0.5	1	1.5	2	2.5	3	3.5
5	0.6	1.1	1.6	2.1	-	-	-
6	0.9	1.4	1.9	2.4	-	-	-
6.8	1.1	1.6	2.1	2.6	-	-	-
8	1.4	1.9	2.4	2.9	-	-	-
8.5	1.6	2.1	2.6	3.1	-	-	-
10	2	2.5	3	3.5	4	4.5	5
10.2	2.1	2.6	3.1	3.6	4.1	4.6	5.1
12	2.6	3.1	3.6	4.1	4.6	5.1	5.6
16	3.7	4.2	4.7	5.2	5.7	6.2	6.7
17.5	4.2	4.7	5.2	5.7	6.2	6.7	7.2
20	4.9	5.4	5.9	6.4	6.9	7.4	7.9
21	5.2	5.7	6.2	6.7	7.2	7.7	8.2
24	6.1	6.6	7.1	7.6	8.1	8.6	9.1
30	7.8	8.3	8.8	9.3	9.8	10.3	10.8
33	8.7	9.2	9.7	10.2	10.7	11.2	11.7
36	9.5	10	10.5	11	11.5	12	12.5
38	10.1	10.6	11.1	11.6	12.1	12.6	13.1
42	11.2	11.7	12.2	12.7	13.2	13.7	14.2
46	12.4	12.9	13.4	13.9	14.4	-	-
48	13	13.5	14	14.5	-	-	-
52	14.1	-	-	-	-	-	-

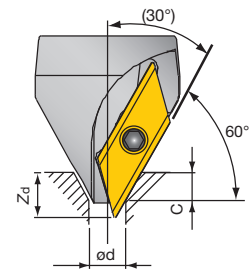


Tool: ECC31005R-60

Note: When the hole depth is smaller than the Z-axis plunging depth (Z_d), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Z_d (mm) in 60° chamfering of hole

Hole dia. ød (mm)	Size of chamfering C (mm)							
	0.5	1	1.5	2	2.5	3	3.5	4
5	0.8	1.3	1.8	2.3	2.8	-	-	-
6	1.7	2.2	2.7	3.2	3.7	-	-	-
6.8	2.4	2.9	3.4	3.9	4.4	-	-	-
8	3.4	3.9	4.4	4.9	5.4	-	-	-
8.5	3.8	4.3	4.8	5.3	5.8	-	-	-
10	5.1	5.6	6.1	6.6	7.1	7.6	8.1	8.6
10.2	5.3	5.8	6.3	6.8	7.3	7.8	8.3	8.8
12	6.9	7.4	7.9	8.4	8.9	9.4	9.9	10.4
16	10.3	10.8	11.3	11.8	12.3	12.8	13.3	13.8
17.5	11.6	12.1	12.6	13.1	13.6	14.1	14.6	15.1
20	13.7	14.2	14.7	15.2	15.7	16.2	16.7	17.2
21	14.6	15.1	15.6	16.1	16.6	17.1	17.6	18.1
24	17.2	17.7	18.2	18.7	19.2	19.7	20.2	20.7
30	22.4	22.9	23.4	23.9	24.4	24.9	25.4	-
33	24.9	25.4	-	-	-	-	-	-

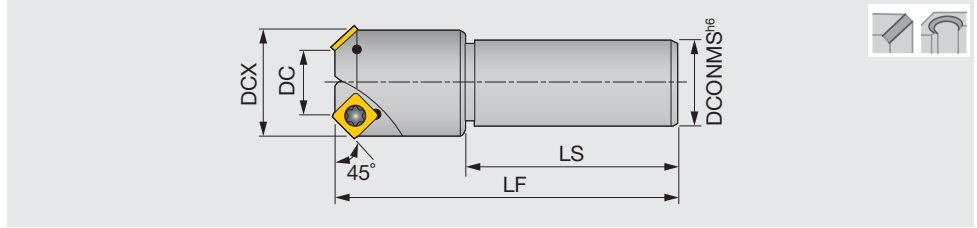


Tool: ECC31005R-30

Note: When the hole depth is smaller than the Z-axis plunging depth (Z_d), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

ECP4400R

Chamfering endmill, screw clamp system, for square inserts



Designation	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR	10	1	27.5	32	130	80	SPMA422*N
ECP4423R	23	2	40.3	32	130	80	SPMA422*N
ECP4436R	36	3	53.3	32	130	80	SPMA422*N

SPARE PARTS

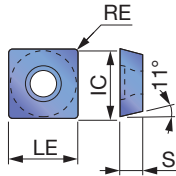


Designation	Clamping screw	Wrench
ECP44...	CSTA-4	T-15D

* Recommended clamping torque: CSTA-4=3.5

INSERT

SPMA42



	P	M	K	N	S	H
Steel	★ ☆ ☆					
Stainless						
Cast iron			★			
Non-ferrous						
Superalloys						
Hard materials						

★ : First choice
☆ : Second choice

Designation	RE	Cermet		Uncoated		LE	IC	S
		NS740	N308	UX30	TH10			
SPMA422TN	0.8	●	●	●		12.7	12.7	3.18
SPMA422FN	0.8			●		12.7	12.7	3.18

● : Line up

STANDARD CUTTING CONDITIONS

Operations	Workpiece material	Grade	Cutting speed Vc (m/min)	Maximum depth of cut ap (mm)	Feed per tooth fz (mm/t)
Single or double chamfering, Hole chamfering	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	100 - 150	-	0.2 - 0.5
	Die steels < 30HRC	NS740 · N308 UX30	50 - 70	-	0.15 - 0.4
	Cast irons	TH10	90 - 110	-	0.2 - 0.6
Facing, Grooving	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	100 - 150	3	0.1 - 0.15
	Die steels < 30HRC	UX30	50 - 70	2	0.1 - 0.15
	Cast irons	TH10	90 - 110	3	0.1 - 0.15

Notes:

- When chamfering stainless steel, down-milling is recommended. Conventional milling may cause edge chipping.
- When chamfering above C3.0, the feed per tooth should be set at the lower side of the value shown in the above table.