



Endmill

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Product Lines


CERAMATIC / Ceramic Endmill



Series	Features	DC (mm)	CICT	APMX (mm)	Pages
RCE.. series 	For HRSA materials <ul style="list-style-type: none"> High-speed machining of heat-resistant alloy is possible by utilizing the sialon ceramic grade "SX9" with excellent wear resistance. Compared to carbide end mills, high-efficiency machining over 10 times is possible. 	φ8 - 12.7	4,6 flute	- 9.525	A11 H05
RCS.. series 	For Cast iron / HRSA materials <ul style="list-style-type: none"> World-first ceramic end mill capable of machining cast iron (investigated by NTK). High-efficiency machining with at least 3 times better performance than carbide end mills. 	φ50 - 250	4,6,8 flute	- 14.29	A13 H06

RCL type rectangular tooth chamfering type

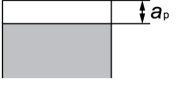

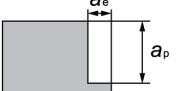

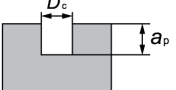



Series	Features	DC (mm)	CICT	APMX (mm)	Pages
RCL.. series 	Gear tooth chamfering type <ul style="list-style-type: none"> Special two-flute end mill with indexable inserts. C/T can be shortened by utilizing fine particle carbide inserts (compared to high-end mills) Longer life than single-flute end mill 	φ8 - 12.7	4,6	- 9.525	A15 H08

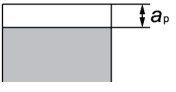

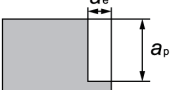

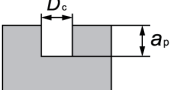

Recommended Cutting Conditions

CERAMATIC / Ceramic Endmill

Recommend Cutting Conditions for HRSA material

Application	Grade	ϕD_c	Flute	Cutting Speed (m/min)			Feed (mm/t)	Depth of cut (a_p -mm)	Width of cut (a_e -mm)	Coolant
				150	600	1000				
Face Milling 	SX9	8mm	4/6/8	[Red bar]	[Red bar]	0.03	≤ 1.2	—	DRY 	
		10mm					≤ 1.5			
		12mm					≤ 1.8			
		16mm					≤ 2.4			
		20mm					≤ 3.0			
		3/8"					≤ 1.4			
		1/2"					≤ 1.9			
		5/8"					≤ 2.4			
Side Milling 	SX9	8mm	4/6/8	[Red bar]	[Red bar]	0.03	≤ 4.0	≤ 0.8	DRY 	
		10mm					≤ 5.0	≤ 1.0		
		12mm					≤ 6.0	≤ 1.2		
		16mm					≤ 8.0	≤ 1.6		
		20mm					≤ 10.0	≤ 2.0		
		3/8"					≤ 4.8	≤ 0.9		
		1/2"					≤ 6.4	≤ 1.3		
		5/8"					≤ 8.0	≤ 1.6		
3/4"	≤ 9.5	≤ 1.9								
Slotting 	SX9	8mm	4	[Red bar]	[Red bar]	0.03	≤ 2.0	—	DRY 	
		10mm					≤ 2.5			
		12mm					≤ 3.0			
		16mm					≤ 4.0			
		3/8"					≤ 2.4			
		1/2"					≤ 3.2			
		5/8"					≤ 4.0			
		8mm					6			[Red bar]
	10mm	≤ 1.5								
	12mm	≤ 1.8								
	16mm	≤ 2.4								
	3/8"	≤ 1.4								
	1/2"	≤ 1.9								
	5/8"	≤ 2.4								

Recommended cutting conditions for Cast Iron

Application	Grade	ϕD_c	Flute	Cutting Speed (m/min)			Feed (mm/t)	Depth of cut (a_p - mm)	Width of cut (a_e - mm)	Coolant
				150	600	1000				
Face Milling 	SX9	12mm	4/6/8	[Red bar]	[Red bar]	0.1	≤ 3.0	—	DRY 	
		16mm					≤ 4.0			
		20mm					≤ 5.0			
		1/2"					≤ 2.0			
		5/8"					≤ 4.0			
		3/4"					≤ 5.0			
Side Milling 	SX9	12mm	4/6/8	[Red bar]	[Red bar]	0.1	≤ 9.0	≤ 2.0	DRY 	
		16mm					≤ 12.0	≤ 2.5		
		20mm					≤ 15.0	≤ 3.0		
		1/2"					≤ 9.0	≤ 2.0		
		5/8"					≤ 12.0	≤ 2.5		
		3/4"					≤ 14.0	≤ 3.0		
Slotting 	SX9	12mm	4/6/8	[Red bar]	[Red bar]	0.1	≤ 3.0	—	DRY 	
		16mm					≤ 4.0			
		20mm					≤ 5.0			
		1/2"					≤ 2.0			
		5/8"					≤ 4.0			
		3/4"					≤ 5.0			

For Maximum Productivity

- A continuous cut is recommended. An interrupted cut may cause chipping or breakage.
- When using a Hydraulic or Shrink chuck, blow air to the arbor body, DON'T blow air to the endmill itself.
- A Minimum speed of 300m/min is required. (Don't run at lower speed.)
- A 1.5 degree ramping angle is recommended. Run at 50% lower feed rate when ramping cut.

RCL type rectangular tooth chamfering type

Cutter diameter	Recommended module	Recommended feed rate
φ14	2.25 or less	0.3mm/rev or less
φ12	2.15 or less	0.3mm/rev or less

If the recommended module or the recommended feed rate is exceeded, the clamping screw should be retightened at least once or twice a day to keep insert secure.

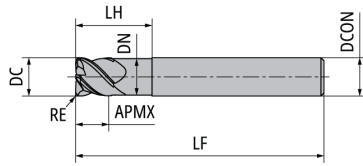
Precautions

1. When mounting the end milling tool, ensure a minimum amount of overhang from the chuck to the tool nose in order to prevent run out during machining (Target value: approx. 20mm).
2. As is probably known, gear tooth chamfering applies shock loading due to interrupted cutting. For this reason, the holder and clamping screw may deteriorate quicker than normal. Therefore, we request that you replace the holder and clamping screw periodically with new ones for safer and more stable operation.
3. In addition, please re-tighten the clamping screw regularly to avoid loss of clamping force during machining.

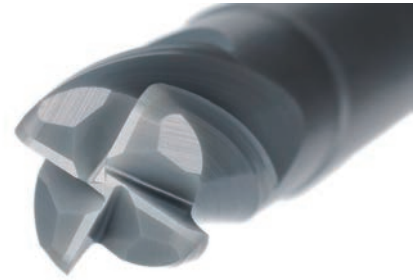
CERAMATIC

RCE.. series for HRSA materials

RCE-H4



● No center cutting edge

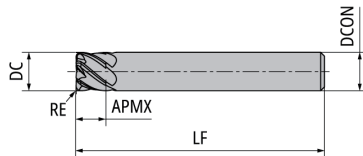


Tolerances (mm)

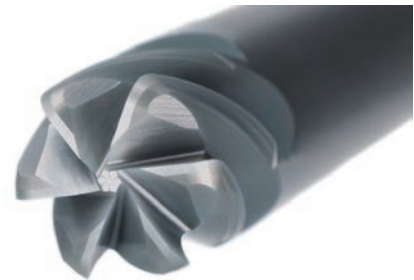
DC	DC (e8)	DCON (h6)
8,10,3/8"	-0.024/-0.047	+0/-0.009
12,1/2"	-0.032/-0.059	+0/-0.011

Item Number	NOF	APMX		DC		DCON		DN		FHA	LF		LH		RE		Silicon Nitride Ceramics SX9
		mm	inch	mm	inch	mm	inch	mm	inch		°	mm	inch	mm	inch	mm	
RCEM080H4R100S	4	6	.236	8	.315	8	.315	7.6	.299	35	60	2.362	16	.630	1	.039	●
RCEM100H4R125S	4	7.5	.295	10	.394	10	.394	9.6	.378	35	65	2.559	20	.787	1.25	.049	●
RCEM120H4R150S	4	9	.354	12	.472	12	.472	11.6	.457	35	70	2.756	24	.945	1.5	.059	●
RCEI375H4R047S	4	7.14	9/32	9.525	3/8	9.525	3/8	9.125	.359	35	63.5	2.500	19.05	3/4	1.19	.047	●
RCEI500H4R068S	4	9.525	3/8	12.7	1/2	12.7	1/2	12.3	.484	35	69.85	2.750	25.4	1.000	1.73	.068	●

RCE-J6



● No center cutting edge



Endmill H

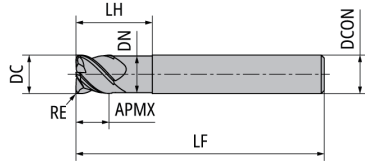
Tolerances (mm)

DC	DC (e8)	DCON (h6)
8,10,3/8"	-0.00098/-0.00185"	+0/-0.00035"
12,1/2"	-0.032/-0.059	+0/-0.011

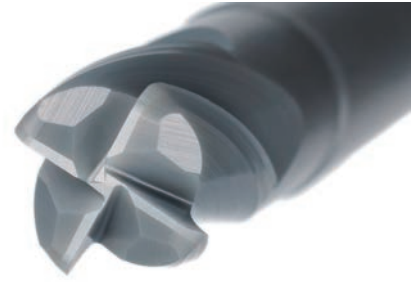
Item Number	NOF	APMX		DC		DCON		FHA	LF		RE		Silicon Nitride Ceramics SX9
		mm	inch	mm	inch	mm	inch		°	mm	inch	mm	
RCEM080J6R100S	6	6	.236	8	.315	8	.315	40	60	2.362	1	.039	●
RCEM100J6R125S	6	7.5	.295	10	.394	10	.394	40	65	2.559	1.25	.049	●
RCEM120J6R150S	6	9	.354	12	.472	12	.472	40	70	2.756	1.5	.059	●
RCEI375J6R047S	6	7.14	9/32	9.525	3/8	9.525	3/8	40	63.5	2.500	1.19	.047	●
RCEI500J6R068S	6	9.525	3/8	12.7	1/2	12.7	1/2	40	69.85	2.750	1.73	.068	●

RCS.. series for Cast iron / HRSA materials

RCS-H4



● No center cutting edge

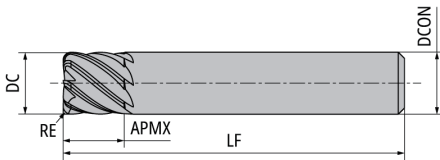


Tolerances mm

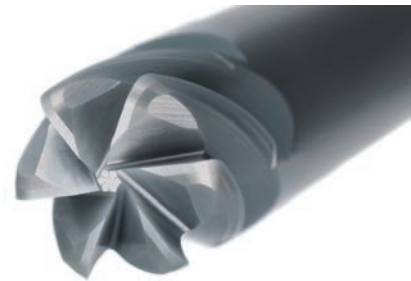
DC	DC (e8)	DCON (h6)
8, 10, 3/8"	-0.024/-0.047	+0/-0.009
12,16, 1/2", 5/8"	-0.032/-0.059	+0/-0.011
20, 3/4"	-0.04/-0.073	+0/-0.013

Item Number	NOF	APMX		DC		DCON		DN		FHA	LF		LH		RE		Silicon Nitride Ceramics
		mm	inch	mm	inch	mm	inch	mm	inch		°	mm	inch	mm	inch	mm	inch
RCSM120H4R150S	4	9	.354	12	.472	12	.472	11.6	.457	35	70	2.756	24	.945	1.5	.059	■
RCSM160H4R200S	4	12	.472	16	.630	16	.630	15.5	.610	35	75	2.953	32	1.260	2	.079	■
RCSI500H4R068S	4	9.525	3/8	12.7	1/2	12.7	1/2	12.3	.484	35	69.85	2.750	25.4	1.000	1.73	.068	■
RCSI625H4R078S	4	11.91	.469	15.875	5/8	15.875	5/8	15.375	.605	35	76.2	3.000	31.75	1-1/4	1.98	.078	■

RCS-J6



● No center cutting edge

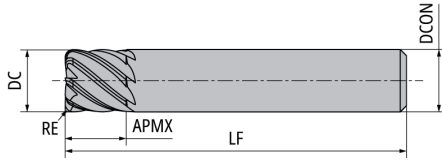


Tolerances mm

DC	DC (e8)	DCON (h6)
8, 10, 3/8"	-0.024/-0.047	+0/-0.009
12,16, 1/2", 5/8"	-0.032/-0.059	+0/-0.011
20, 3/4"	-0.04/-0.073	+0/-0.013

Item Number	NOF	APMX		DC		DCON		FHA	LF		RE		Silicon Nitride Ceramics
		mm	inch	mm	inch	mm	inch		°	mm	inch	mm	inch
RCSM120J6R150S	6	9	.354	12	.472	12	.472	40	70	2.756	1.5	.059	■
RCSM160J6R200S	6	12	.472	16	.630	16	.630	40	75	2.953	2	.079	■
RCSI500J6R068S	6	9.525	3/8	12.7	1/2	12.7	1/2	40	69.85	2.750	1.73	.068	■
RCSI625J6R078S	6	11.91	.469	15.875	5/8	15.875	5/8	40	76.2	3.000	1.98	.078	■

RCS-J8



● No center cutting edge



Tolerances

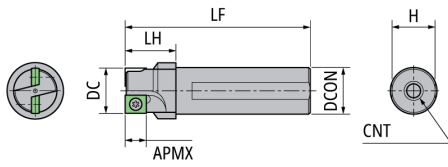
mm

DC	DC (e8)	DCON (h6)
8, 10, 3/8"	-0.024/-0.047	+0/-0.009
12, 16, 1/2", 5/8"	-0.032/-0.059	+0/-0.011
20, 3/4"	-0.04/-0.073	+0/-0.013

Item Number	NOF	APMX		DC		DCON		FHA	LF		RE		Silicon Nitride Ceramics SX9
		mm	inch	mm	inch	mm	inch		°	mm	inch	mm	
RCSM200J8R250S	8	15	.591	20	.787	20	.787	40	110	4.331	2.5	.098	■
RCSI750J8R094S	8	14.29	.563	19.05	3/4	19.05	3/4	40	107.95	4.250	2.38	.094	■

RCL type rectangular tooth chamfering type RCL.. series/Toolholders

RCL-066



● Diagram shows right-hand tool

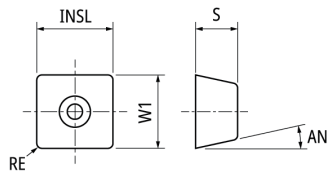
EDP	Item Number	Stock	Hand	APMX mm	CICT	CNT	DC mm	DCON mm	H mm	KAPR °	LF mm	LH mm	Insert Gage
5051792	RCL100D2R066	●	R	(5)	2	M4*20L	10	10	9.5	90	60	18	CLH04..035
5051784	RCL100D2L066	●	L	(5)	2	M4*20L	10	10	9.5	90	60	18	CLH04..035

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
RCL100D2R066	FSI04-2.0*4.3	T-06
RCL100D2L066	FSI04-2.0*4.3	T-06

RCL.. series/Insert Carbide

CLH04-035

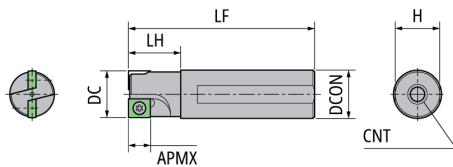


● No center cutting edge

Item Number	Chip-breaker	Wiper	AN °	INSL mm	KAPR °	RE mm	S mm	W1 mm	Carbide PVD	
									DM4	ZM3
CLH0402CFN-035	No	No	7	5.56	90	0.2	1.88	4.2	●	●
CLH0402CT00525-035	No	No	7	5.56	90	0.2	1.88	4.2	●	●

RCL.. series/Toolholders

RCL-050



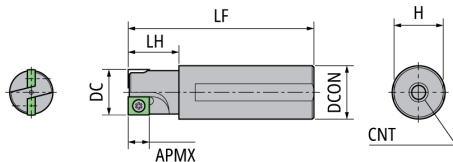
● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX mm	CICT	CNT	DC mm	DCON mm	H mm	KAPR °	LF mm	LH mm	Insert Gage
5025952	RCL120D2R050	●	R	(5)	2	M4*20L	12	12	11	90	60	15	CLH04..004
5025945	RCL120D2L050	●	L	(5)	2	M4*20L	12	12	11	90	60	15	CLH04..004

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
RCL120D2R050	FSI01-2.5*5	CLR-15S
RCL120D2L050	FSI01-2.5*5	CLR-15S

RCL-059



● Diagram shows right-hand tool

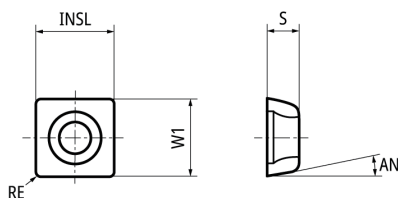
EDP	Item Number	Stock	Hand	APMX mm	CICT	CNT	DC mm	DCON mm	H mm	KAPR °	LF mm	LH mm	Insert Gage
5034913	RCL120D2R059	●	R	(5)	2	M6*20L	12	14	13	90	55	15	CLH04..004
5034921	RCL120D2L059	●	L	(5)	2	M6*20L	12	14	13	90	55	15	CLH04..004

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
RCL120D2R059	FSI01-2.5*5	CLR-15S
RCL120D2L059	FSI01-2.5*5	CLR-15S

RCL.. series/Insert Carbide

CLH04-004

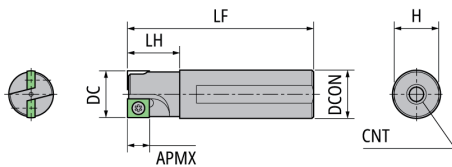


● No center cutting edge

Item Number	Chip-breaker	Wiper	AN °	INSL mm	KAPR °	RE mm	S mm	W1 mm	Carbide PVD	
									DM4	ZM3
CLH0402CFN-004	No	No	7	5.56	90	0.2	1.88	4.76	●	●
CLH0402CT00525-004	No	No	7	5.56	90	0.2	1.88	4.76	●	●

RCL.. series/Toolholders

RCL-021



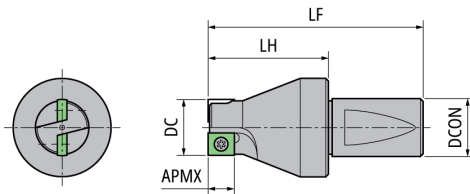
● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX mm	CICT	CNT	DC mm	DCON mm	H mm	KAPR °	LF mm	LH mm	Insert Gage
5005046	RCL140D2R021	●	R	(6)	2	M6*20L	14	14	13	90	55	15	CLH05..
5005053	RCL140D2L021	●	L	(6)	2	M6*20L	14	14	13	90	55	15	CLH05..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
RCL140D2R021	FSI01-2.5*5	CLR-15S
RCL140D2L021	FSI01-2.5*5	CLR-15S

RCL-020



● Diagram shows right-hand tool

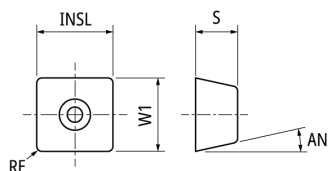
EDP	Item Number	Stock	Hand	APMX mm	CICT	CNT	DC mm	DCON mm	H mm	KAPR °	LF mm	LH mm	Insert Gage
5005236	RCL140Z2R020	●	R	(6)	2	-	14	14	-	90	54	30	CLH05..
5005228	RCL140Z2L020	●	L	(6)	2	-	14	14	-	90	54	30	CLH05..

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
RCL140Z2R020	FSI01-2.5*5	CLR-15S
RCL140Z2L020	FSI01-2.5*5	CLR-15S

RCL.. series/Insert Carbide

CLH05



Item Number	Chip-breaker	Wiper	AN °	INSL mm	KAPR °	RE mm	S mm	W1 mm	Carbide PVD	
									DM4	ZM3
CLH0502CFN	No	No	11	6.35	90	0.2	2.18	5.56	●	●
CLH0504CFN	No	No	11	6.35	90	0.4	2.18	5.56	●	●