




Endmill

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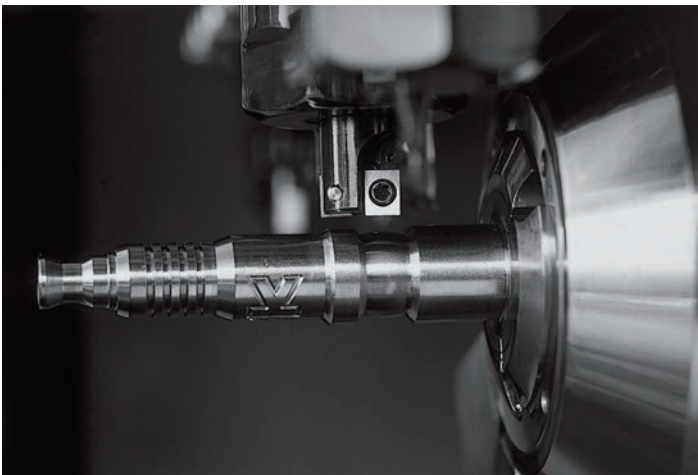
Product Lines



S-MILL / Solid Carbide Endmills



Series	Features	DC (mm)	CICT	APMX (mm)	Pages
RWEM.. series 	Small diameter solid end mill <ul style="list-style-type: none"> • Original NTK design for sharpness and ease of use on automated lathes • Stable machining even with small-diameter machining that is easy to vibrate • A lineup of full-length dimensions optimized for Swiss CNC lathes 	φ2 - 10	2,3,4 flute	- 6.0	X4

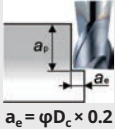
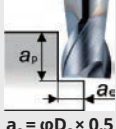
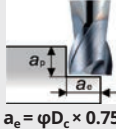
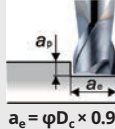
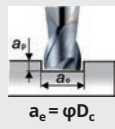
Indexable Endmills



Series	Features	DC (mm)	CICT	APMX (mm)	Pages
REZ.. series 	Lead angle 90° <ul style="list-style-type: none"> • Can be used for right angle milling • Plunging and D-cuts using an insert with a center cutting edge • Slope milling is possible • Oversized head allows for machining close to guide bushing • Standard 45 degree lead angle end mill with indexable inserts 	φ8 - 20	1,2,3 flute	- 5.3	X5
REL.. series 	Lead angle 89° <ul style="list-style-type: none"> • Solid → Easy tool management with indexable inserts • No need to re-grind or re-coat which reduces tool costs • Fine grain carbide - PVD coated inserts enable three to five times faster cutting speeds compared to high-speed end mills 	φ10	2 flute	- 5.3	X8

Recommended Cutting Conditions

S-MILL / Solid Carbide Endmills

Flute	φD_c (mm)	Carbon steel S45C		Alloy steel S45C		Stainless steel SUS304										
		RPM (min ⁻¹)	Feed (mm/min)	RPM (min ⁻¹)	Feed (mm/min)	RPM (min ⁻¹)	Feed (mm/min)	a_p (mm)	a_e (mm)	a_p (mm)	a_e (mm)	a_p (mm)	a_e (mm)	a_p (mm)	a_e (mm)	a_p (mm)
2 flute	2.0	6,000	100	6,000	100	6,000	90	≤2.0	0.4	≤0.8	1.0	≤0.6	1.5	≤0.5	1.8	≤0.4
	3.0	6,000	210	6,000	240	6,000	180	≤3.0	0.6	≤1.2	1.5	≤0.9	2.3	≤0.7	2.7	≤0.6
	4.0	6,000	320	5,600	300	5,200	240	≤4.0	0.8	≤1.6	2.0	≤1.2	3.0	≤1.0	3.6	≤0.8
	5.0	5,000	370	4,500	330	4,100	260	≤5.0	1.0	≤2.0	2.5	≤1.5	3.8	≤1.2	4.5	≤1.0
	6.0	4,200	380	3,700	340	3,400	270	≤6.0	1.2	≤2.4	3.0	≤1.8	4.5	≤1.5	5.4	≤1.2
	7.0	3,600	370	3,200	330	3,000	270	≤6.0	1.4	≤2.8	3.5	≤2.1	5.3	≤1.7	6.3	≤1.4
	8.0	3,200	360	2,800	320	2,600	250	≤6.0	1.6	≤3.2	4.0	≤2.4	6.0	≤2.0	7.2	≤1.6
	10.0	2,500	320	2,200	280	2,100	230	≤6.0	2.0	≤4.0	5.0	≤3.0	7.5	≤2.5	9.0	≤2.0
3 flute	3.0	6,000	250	6,000	250	6,000	220	≤3.0	8.0	≤1.2	1.5	≤0.9	2.3	≤0.7	2.7	≤0.6
	4.0	6,000	390	5,600	360	5,200	290	≤4.0	0.8	≤1.6	2.0	≤1.2	3.0	≤1.0	3.6	≤0.8
	5.0	5,000	440	4,500	400	4,100	310	≤5.0	1.0	≤2.0	2.5	≤1.5	3.8	≤1.2	4.5	≤1.0
	6.0	4,200	460	3,700	410	3,400	330	≤6.0	1.2	≤2.4	3.0	≤1.8	4.5	≤1.5	5.4	≤1.2
	7.0	3,600	450	3,200	400	3,000	320	≤6.0	1.4	≤2.8	3.5	≤2.1	5.3	≤1.7	6.3	≤1.4
	8.0	3,200	430	2,800	380	2,600	310	≤6.0	1.6	≤3.2	4.0	≤2.4	6.0	≤2.0	7.2	≤1.6
4 flute	3.0	6,000	290	6,000	290	6,000	250	≤3.0	0.6	≤1.2	1.5	≤0.9	2.3	≤0.7	2.7	≤0.6
	4.0	6,000	450	5,500	410	5,200	340	≤4.0	0.8	≤1.6	2.0	≤1.2	3.0	≤1.0	3.6	≤0.8
	5.0	5,000	520	4,500	460	4,100	370	≤5.0	1.0	≤2.0	2.5	≤1.5	3.8	≤1.2	4.5	≤1.0
	6.0	4,200	540	3,700	480	3,400	380	≤6.0	1.2	≤2.4	3.0	≤1.8	4.5	≤1.5	5.4	≤1.2
	7.0	3,600	520	3,200	460	3,000	380	≤6.0	1.4	≤2.8	3.5	≤2.1	5.3	≤1.7	6.3	≤1.4
	8.0	3,200	500	2,800	440	2,600	360	≤6.0	1.6	≤3.2	4.0	≤2.4	6.0	≤2.0	7.2	≤1.6
10.0	2,500	440	2,200	390	2,100	320	≤6.0	2.0	≤4.0	5.0	≤3.0	7.5	≤2.5	9.0	≤2.0	

Cutting conditions (machine, work material...) affects surface finish and burr generation.

If cutting performance is not good with above cutting conditions, please adjust speed and feed by same ratio.

Indexable Endmills

Work Material	RPM (m/min)	Axial Feed (mm/t)	Depth of cut (mm)	Width of cut (mm)
Stainless	40 ~ 60	~ 0.05	~ 1.5	- 50% of cutter diameter
Steel	80 ~ 120	~ 0.05	~ 3.0	- 50% of cutter diameter

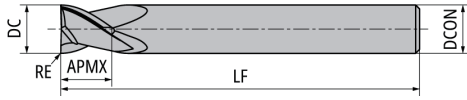
S-MILL

RWEM.. series

RWEM-H2



No.1



No.2

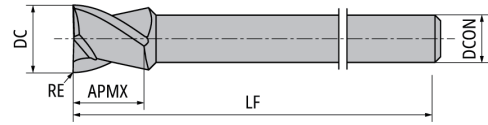
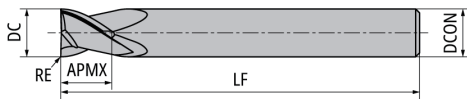


Figure	Item Number	NOF	APMX mm	DC mm	DCON mm	LF mm	RE mm	Carbide AC3
1	RWEM020H2R00S04	2	2	2	4	40	0	●
1	RWEM030H2R00S04	2	3	3	4	40	0	●
1	RWEM040H2R00S04	2	4	4	4	40	0	●
1	RWEM050H2R00S06	2	5	5	6	45	0	●
1	RWEM060H2R00S06	2	6	6	6	45	0	●
1	RWEM070H2R00S08	2	6	7	8	50	0	●
2	RWEM080H2R00S07	2	6	8	7	50	0	●
1	RWEM080H2R00S08	2	6	8	8	50	0	●
2	RWEM100H2R00S07	2	6	10	7	50	0	●
1	RWEM100H2R00S10	2	6	10	10	50	0	●

RWEM-H3



No.1



No.2

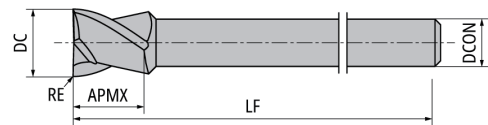
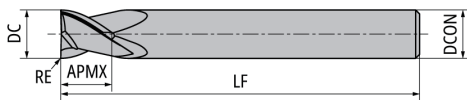


Figure	Item Number	NOF	APMX mm	DC mm	DCON mm	LF mm	RE mm	Carbide AC3
1	RWEM030H3R00S04	3	3	3	4	40	0	●
1	RWEM040H3R00S04	3	4	4	4	40	0	●
1	RWEM050H3R00S06	3	5	5	6	45	0	●
1	RWEM060H3R00S06	3	6	6	6	45	0	●
1	RWEM070H3R00S08	3	6	7	8	50	0	●
2	RWEM080H3R00S07	3	6	8	7	50	0	●
1	RWEM080H3R00S08	3	6	8	8	50	0	●
2	RWEM100H3R00S07	3	6	10	7	50	0	●
1	RWEM100H3R00S10	3	6	10	10	50	0	●

RWEM-H4



No.1



No.2

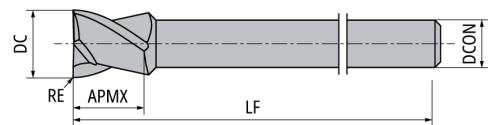


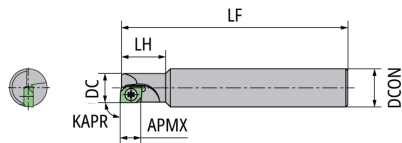
Figure	Item Number	NOF	APMX mm	DC mm	DCON mm	LF mm	RE mm	Carbide AC3
1	RWEM030H4R00S04	4	3	3	4	40	0	●
1	RWEM040H4R00S04	4	4	4	4	40	0	●
1	RWEM050H4R00S06	4	5	5	6	45	0	●
1	RWEM060H4R00S06	4	6	6	6	45	0	●
1	RWEM070H4R00S08	4	6	7	8	50	0	●
2	RWEM080H4R00S07	4	6	8	7	50	0	●
1	RWEM080H4R00S08	4	6	8	8	50	0	●
2	RWEM100H4R00S07	4	6	10	7	50	0	●
1	RWEM100H4R00S10	4	6	10	10	50	0	●

X Endmill

Indexable Endmills

REZ.. series/Toolholders for Lead angle 90°

REZ-1R



● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX	CICT	DC mm	DCON mm	KAPR °	LF mm	LH mm	Insert Gage
5276498	REZ080C1R212	●	R	※5.3	1	8	10	90	60	12	CZH04..
5285812	REZ100C1R218	●	R	※5.3	1	10	10	90	75	12	CZH05..-141

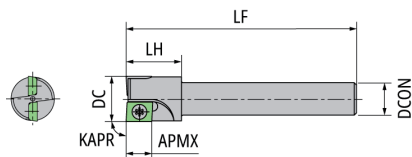
※4.0mm for an insert with a center cutting edge

Note : The model number stamped on the actual holder is partly shortened for reasons of space.

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
REZ080C1R212	FSI02-2.2*4.0	T-07
REZ100C1R218	FSI02-2.2*4.3	T-07

REZ-2R



● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX	CICT	DC mm	DCON mm	KAPR °	LF mm	LH mm	Insert Gage
5520317	REZ100B2R329	●	R	※5.3	2	10	5	90	40	10	CZH04..
5120936	REZ100C2R133	●	R	※5.3	2	10	6	90	50	12	CZH04..
5120951	REZ100C2R132	●	R	※5.3	2	10	7	90	50	12	CZH04..
5137971	REZ100C2R141	●	R	※5.3	2	10	10	90	50	12	CZH04..
5355458	REZ120C2R141	●	R	※5.3	2	12	10	90	50	12	CZH04..
5355466	REZ140C2R141	●	R	※5.3	2	14	10	90	50	12	CZH04..

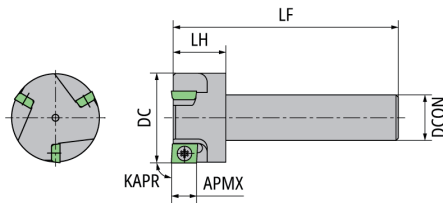
※4.0mm for an insert with a center cutting edge

Note : The model number stamped on the actual holder is partly shortened for reasons of space.

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
REZ100B2R329	FSI02-2.2*4.3	T-07
REZ100C2R133	FSI02-2.2*4.3	T-07
REZ100C2R132	FSI02-2.2*4.3	T-07
REZ100C2R141	FSI02-2.2*4.3	T-07
REZ120C2R141	FSI02-2.2*4.3	T-07
REZ140C2R141	FSI02-2.2*4.3	T-07

REZ-3R for oversized head



● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX	CICT	DC mm	DCON mm	KAPR °	LF mm	LH mm	Insert Gage
5520325	REZ150B3R330	●	R	※5.3	3	15	5	90	40	10	CZH04..
5496088	REZ200M3R319	●	R	※5.3	3	20	7	90	50	12	CZH04..
5496096	REZ200M3R320	●	R	※5.3	3	20	10	90	50	12	CZH04..

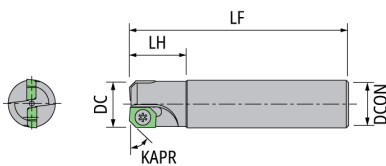
※4.0mm for an insert with a center cutting edge

Note : The model number stamped on the actual holder is partly shortened for reasons of space.

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
REZ150B3R330	FSI02-2.2*4.3	T-07
REZ200M3R319	FSI02-2.2*4.3	T-07
REZ200M3R320	FSI02-2.2*4.3	T-07

REZ-2R for Lead angle 45°



● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	CICT	DC mm	DCON mm	KAPR °	LF mm	LH mm	Insert Gage
5880281	REZ100C2R461	●	R	2	10	10	45	50	12	CZH04.. CZH04..-C45
5880299	REZ100C2R466	●	R	2	10	7	45	50	12	CZH04.. CZH04..-C45

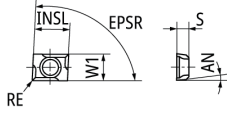
Note : The model number stamped on the actual holder is partly shortened for reasons of space.

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
REZ100C2R461	FSI02-2.2*4.3	T-07
REZ100C2R466	FSI02-2.2*4.3	T-07

REZ.. series/Insert Carbide

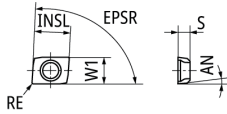
CZH-BL Less tool pressure with chipbreaker



● Diagram shows right-hand tool

Item Number	Chip-breaker	Center cutting edge	Wiper	AN	EPSR	INSL	RE	S	W1	Carbide PVD	
				°	°	mm	mm	mm	mm	DM4	TM4
CZH04005CFR-BL	Yes	No	No	7	87	5.56	0.05	1.88	4.2	●	●
CZH0402CFR-BL	Yes	No	No	7	87	5.56	0.2	1.88	4.2	●	●

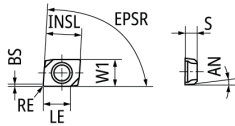
CZH-070



● Diagram shows right-hand tool

Item Number	Chip-breaker	Center cutting edge	Wiper	AN	EPSR	INSL	RE	S	W1	Carbide PVD	
				°	°	mm	mm	mm	mm	DT4	ZM3
CZH04005CFR-070	No	Yes	No	7	87	5.56	0.05	1.88	4.2	●	●
CZH0402CFR-070	No	Yes	No	7	87	5.56	0.2	1.88	4.2	●	●

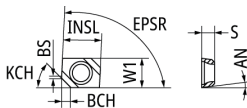
CZH-140/141



● Diagram shows right-hand tool

Item Number	Chip-breaker	Center cutting edge	Wiper	AN	BS	EPSR	INSL	LE	RE	S	W1	Carbide PVD	
				°	mm	°	mm	mm	mm	mm	mm	DT4	ZM3
CZH04005CFR-140	No	Yes	Straight	7	0.4	87	5.56	4	0.05	1.88	4.2	●	●
CZH0402CFR-140	No	Yes	Straight	7	0.4	87	5.56	4	0.2	1.88	4.2	●	●
CZH05005CFR-141	No	Yes	Straight	10	0.4	87	5.28	4	0.05	2.18	5.56	●	
CZH0502CFR-141	No	Yes	Straight	10	0.4	87	5.28	4	0.2	2.18	5.56	●	

CZH-C45 for Lead angle 45°



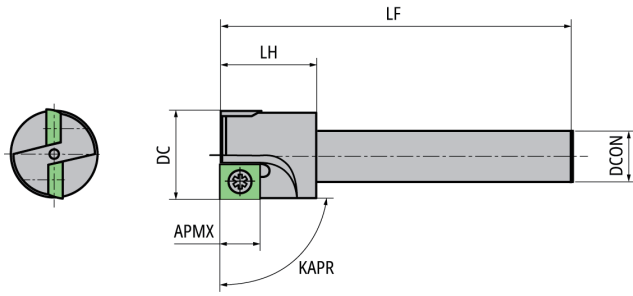
● Diagram shows right-hand tool

Item Number	Chip-breaker	Center cutting edge	Wiper	AN	BCH	BS	EPSR	INSL	KCH	S	W1	Carbide PVD	
				°	mm	mm	°	mm	°	mm	mm	DT4	QM3
CZH0400CFR-C45	Yes	No	Straight	7	1.35	0.3	87	5.56	45	1.88	4.2	●	●

Indexable Endmills

REL.. series/Toolholders for Lead angle 89°

REL-2R



● Diagram shows right-hand tool

EDP	Item Number	Stock	Hand	APMX	CICT	DC mm	DCON mm	KAPR °	LF mm	LH mm	Insert Gage
5092374	REL100C2R106	●	R	※	2	10	10	89	50	12	CLH04..-045
5092358	REL100C2R107	●	R	※	2	10	7	89	50	12	CLH04..-045

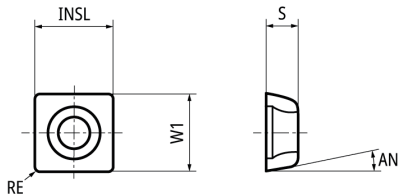
Note : The model number stamped on the actual holder is partly shortened for reasons of space.

Spare Parts

Item Number	Clamp screw	Wrench (for Clamp screw)
REL100C2R106	FSI02-2.2*4.3	T-07
REL100C2R107	FSI02-2.2*4.3	T-07

REL.. series/Insert Carbide

CLH-045



● Diagram shows right-hand tool

Item Number	Chip-breaker	Center cutting edge	Wiper	AN °	INSL mm	RE mm	S mm	W1 mm	Carbide PVD ZM3
CLH04005CFN-045	No	No	No	7	5.56	0.05	1.88	4.2	●
CLH0402CFN-045	No	No	No	7	5.56	0.2	1.88	4.2	●