

● **Recommend Cutting Conditions for HRSA material**

Application	Grade	$\phi D_c$	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	3/8"	4/6/8	150	600	1000	0.03	1.4	—	DRY 
		1/2"								
		5/8"								
		3/4"								
		8mm								
		10mm								
		12mm								
		16mm								
Side Milling 	SX9	3/8"	4/6/8	150	600	1000	0.03	4.8	0.9	DRY 
		1/2"								
		5/8"								
		3/4"								
		8mm								
		10mm								
		12mm								
		16mm								
Slotting 	SX9	3/8"	4	150	600	1000	0.03	2.4	—	DRY 
		1/2"								
		5/8"								
		8mm								
		10mm								
		12mm								
		16mm								
		4.0								
	SX9	6	150	600	1000	0.03	1.4	—	DRY 	
							1/2"			
							5/8"			
							8mm			
							10mm			
							12mm			
							16mm			
							2.4			
SX9	8	150	600	1000	0.03	2.9	—			
						3/4"				
						16mm				
						3.0				

● **Recommended cutting conditions for Cast Iron**

Application	Grade	$\phi D_c$	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	1/2"	4/6/8	150	600	1000	0.1	2.4	—	DRY 
		5/8"								
		3/4"								
		12mm								
		16mm								
Side Milling 	SX9	1/2"	4/6/8	150	600	1000	0.1	9.5	2.1	DRY 
		5/8"								
		3/4"								
		12mm								
		16mm								
Slotting 	SX9	1/2"	4/6/8	150	600	1000	0.1	2.4	—	DRY 
		5/8"								
		3/4"								
		12mm								
		16mm								
20mm										

**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.

**When cutting HRSA materials**

- Continue to machine even if you see BUE, removing BUE may cause chipping or breakage to the edge.
- High speed machining work hardens the material. For this reason, leave at least 0.3mm of material for a finishing process.

# Endmills

## RCE for HRSA Materials

### RCE-H4 (4-flute with Neck)

○ No center cutting edge

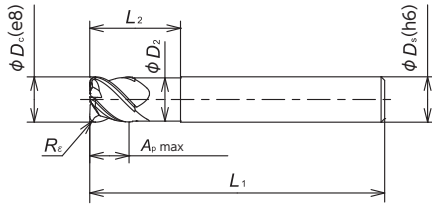


Slotting

Pocketing

Ramping

Z=4



#### Tolerances

$\phi D_c / \phi D_s$	e8	h6
8mm, 10mm, 3/8"	-0.024/-0.047	+0/-0.009
12mm, 1/2"	-0.032/-0.059	+0/-0.011

Heat Resistant Alloy S ● : 1st Choice ● : 2nd choice

Item Number	Grade	Flute	$\phi D_c$		$\phi D_s$		$\phi D_2$		$R_c$		$A_p \text{ max}$		$L_1$		$L_2$	
			(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
RCEM 080H4R100S	●	4	8.0	—	8.0	—	7.6	—	1.0	—	6.0	—	60	—	16	—
100H4R125S	●		10.0	—	10.0	—	9.6	—	1.25	—	7.5	—	65	—	20	—
120H4R150S	●		12.0	—	12.0	—	11.6	—	1.5	—	9.0	—	70	—	24	—
RCEI 375H4R047S	●		9.525	3/8	9.525	3/8	9.125	.359	1.19	.047	7.14	9/32	63.5	2.5	19.05	3/4
500H4R068S	●	12.7	1/2	12.7	1/2	12.3	.484	1.73	.068	9.525	3/8	69.9	2.75	25.4	1	

### RCE-J6 (6-flute)

○ No center cutting edge



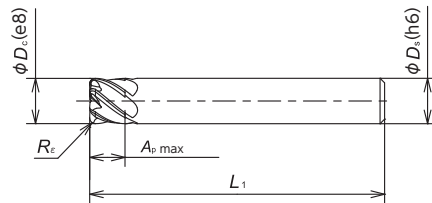
Face Milling

Side Milling

Profiling

Ramping

Z=6



#### Tolerances

$\phi D_c / \phi D_s$	e8	h6
8mm, 10mm, 3/8"	-0.024/-0.047	+0/-0.009
12mm, 1/2"	-0.032/-0.059	+0/-0.011

Heat Resistant Alloy S ● : 1st Choice ● : 2nd choice

Item Number	Grade	Flute	$\phi D_c$		$\phi D_s$		$\phi D_2$		$R_c$		$A_p \text{ max}$		$L_1$		$L_2$	
			(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
RCEM 080J6R100S	●	6	8.0	—	8.0	—	—	—	1.0	—	6	—	60	—	—	—
100J6R125S	●		10.0	—	10.0	—	—	—	1.25	—	7.5	—	65	—	—	—
120J6R150S	●		12.0	—	12.0	—	—	—	1.5	—	9	—	70	—	—	—
RCEI 375J6R047S	●		9.525	3/8	9.525	3/8	—	—	1.19	.047	7.14	9/32	63.5	2.5	—	—
500J6R068S	●	12.7	1/2	12.7	1/2	—	—	1.73	.068	9.525	3/8	69.9	2.75	—	—	

## RCS for Cast Iron / HRSA Materials

### RCS-H4

○ No center cutting edge



Slotting



Pocketing



Ramping



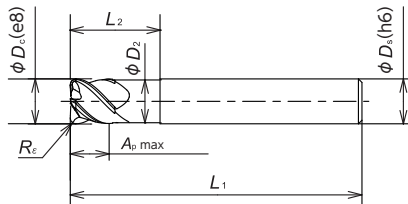
Z=4



35°



1.5°



#### Tolerances

$\phi D_c / \phi D_s$	e8	h6
12mm, 16mm, 1/2", 5/8"	-0.032/-0.059	+0/-0.011

Cast Iron	K	●
Heat Resistant Alloy	S	●

● : 1st Choice   ● : 2nd choice

Item Number	Grade	Flute	$\phi D_c$		$\phi D_s$		$\phi D_2$		$R_e$		$A_p \text{ max}$		$L_1$		$L_2$	
			(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
RCSM 120H4R150S	●	4	12.0	—	12.0	—	11.6	—	1.5	—	9.0	—	70	—	24	—
160H4R200S	●		16.0	—	16.0	—	15.5	—	2.0	—	12.0	—	75	—	32	—
RCSI 500H4R068S	●		12.7	1/2	12.7	1/2	12.3	.484	1.73	.068	9.525	3/8	69.85	2.75	25.4	1
625H4R078S	●		15.875	5/8	15.875	5/8	15.375	.609	1.98	.078	11.91	.469	76.2	3	31.75	1.25

### RCS-J6 / RCS-J8

○ No center cutting edge



Face Milling



Side Milling



Profiling



Ramping



Z=6



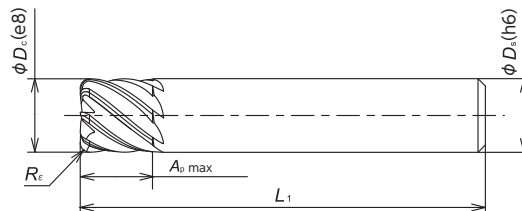
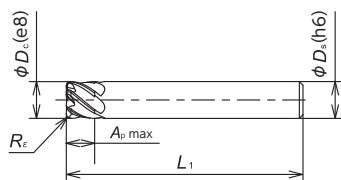
Z=8



40°



1.5°



#### Tolerances

$\phi D_c / \phi D_s$	e8	h6
12mm, 16mm, 1/2", 5/8"	-0.032/-0.059	+0/-0.011
20mm, 3/4"	-0.040/-0.073	+0/-0.013

Cast Iron	K	●
Heat Resistant Alloy	S	●

● : 1st Choice   ● : 2nd choice

Item Number	Grade	Flute	$\phi D_c$		$\phi D_s$		$\phi D_2$		$R_e$		$A_p \text{ max}$		$L_1$		$L_2$	
			(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)	(mm)	(Inch)
RCSM 120J6R150S	●	6	12.0	—	12.0	—	—	—	1.5	—	9.0	—	70	—	—	—
160J6R200S	●		16.0	—	16.0	—	—	—	2.0	—	12.0	—	75	—	—	—
RCSI 500J6R068S	●		12.7	1/2	12.7	1/2	—	—	1.73	.068	9.525	3/8	69.85	2.75	—	—
625J6R078S	●		15.875	5/8	15.875	5/8	—	—	1.98	.078	11.91	.469	76.2	3	—	—
RCSM 200J8R250S	●	8	20.0	—	20.0	—	—	—	2.5	—	15.0	—	110	—	—	—
RCSI 750J8R094S	●		19.05	3/4	19.05	3/4	—	—	2.38	.094	14.29	.562	107.95	4.25	—	—