NTK

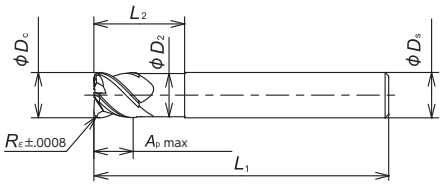
Ceramic Endmill (RCE) for HRSA Materials

Aircraft Part: Frame Inconel 718		
End Mill:	Comp. Carbide	RCEI500H4R068S SX9
Speed	140 SFM	1900 SFM
Feed	0.001 IPT	SAME
DOC	0.050”	SAME
Coolant	dry	dry
Tool Life	1 Part	3 Parts
	3 times to tool life and better cycle time	

Aircraft Part: Fuel Manifold Inconel 625		
End Mill:	Comp. Ceramic	RCEI500J6R068S SX9
Speed	1855 SFM	1965 SFM
Feed	0.0012 IPT	SAME
DOC	0.300”	SAME
Coolant	dry	dry
Tool Life	1 Part	3 Parts
	3 times to tool life and better cycle time	

RCE-H4 (4-flute with Neck)

○No center cutting edge

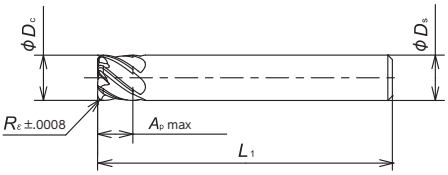


Slotting Pocketing Ramping Z=4

Heat Resistant Alloy	S	●														
Item Number	Grade SX9	Flute	φ D_c (Inch)	(mm)	φ D_s (Inch)	(mm)	φ D_2 (Inch)	(mm)	R_ε (Inch)	(mm)	A_p max (Inch)	(mm)	L_1 (Inch)	(mm)	L_2 (Inch)	(mm)
RCEI375H4R047S	●	4	3/8		3/8		.359		.047		9/32		2.50		3/4	
RCEI500H4R068S	●	4	1/2		1/2		.484		.068		3/8		2.75		1	
RCEM080H4R100S	●	4	.315	8	.315	8	.299	7.6	.039	1.0	.236	6	2.362	60	0.630	16
RCEM100H4R125S	●	4	.394	10	.394	10	.378	9.6	.049	1.25	.295	7.5	2.559	65	0.787	20
RCEM120H4R150S	●	4	.472	12	.472	12	.457	11.6	.059	1.5	.354	9	2.756	70	0.945	24

RCE-J6 (6-flute)

○No center cutting edge



Face Milling Side Milling Profiling Ramping Z=6

Heat Resistant Alloy	S	●									
Item Number	Grade SX9	Flute	φ D_c (Inch)	(mm)	φ D_s (Inch)	(mm)	R_ε (Inch)	(mm)	A_p max (Inch)	(mm)	L_1 (Inch)	(mm)
RCEI375J6R047S	●	6	3/8		3/8		.047		9/32		2.50	
RCEI500J6R068S	●	6	1/2		1/2		.068		3/8		2.75	
RCEM080J6R100S	●	6	.315	8	.315	8	.039	1.0	.236	6	2.362	60
RCEM100J6R125S	●	6	.394	10	.394	10	.049	1.25	.295	7.5	2.559	65
RCEM120J6R150S	●	6	.472	12	.472	12	.059	1.5	.354	9	2.756	70

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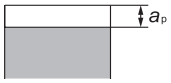
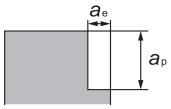
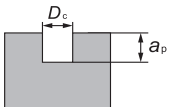
Recommended Cutting Conditions for HRSA Materials

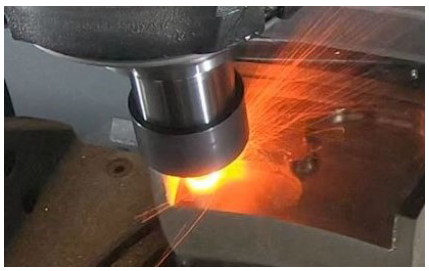
Application	Grade	ϕ D_c	Flute	Cutting Speed (SFM) 500 2000 3500	Feed (IPT)	Depth of cut (a_p —inch)	Width of cut (a_e —inch)	Coolant
Face Milling 	SX9	3/8"	4/6/8		.0012	.056	—	DRY
		1/2"				.075		
		5/8"				.094		
		3/4"				.113		
		8mm				.047		
		10mm				.059		
		12mm				.071		
		16mm				.094		
		20mm				.118		
Side Milling 	SX9	3/8"	4/6/8		.0012	.187	.037	DRY
		1/2"				.250	.050	
		5/8"				.313	.063	
		3/4"				.375	.075	
		8mm				.157	.031	
		10mm				.197	.039	
		12mm				.236	.047	
		16mm				.315	.063	
		20mm				.394	.079	
Slotting	SX9	3/8"	4		.0012	.094	—	DRY
		1/2"				.125		
		5/8"				.156		
		8mm				.079		
		10mm				.098		
		12mm				.118		
		16mm				.157		
	SX9	3/8"	6		.0012	.056	—	DRY
		1/2"				.075		
		5/8"				.094		
		8mm				.047		
		10mm				.059		
		12mm				.071		
		16mm				.094		
		3/4"	8		.0012	.113	—	
		16mm				.118		

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 980 SFM 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.



Material: Rene 65		
Ceramic End Mill: RCEI500J6R068S SX9		
	Test 1	Test 2
Speed	2300 SFM	1610 SFM
Feed	.0046 IPT	.0008 IPT
DOC	0.027”	0.200”
Coolant	dry	dry
Tool Life	24 Minutes	6 Minutes

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