




Guideline for grooving HRSA materials





BIDEMICS / Ceramic grooving inserts provide high speed capability to your process. Whisker ceramic is the most versatile option in this category. NTK also offers BIDEMICS and SIALON grades for more productivity and stability.

	JX1	JX3	SX3	SX7	SX5	WA1
						
Speed	●				●	●
Feed			●	●	●	
Versatility	●		●	●	●	●
Toughness			●	●	●	
	Can run at up to 1500 SFM. Double the speed of whisker		Double the feed of whisker		Best for Scale and interruption	Versatile grade

● : 1st choice ● : 2nd choice

Application	Grade	Work material	Cutting speed					Feed					Depth of cut					Coolant
			600	800	1000	1200	1400	1600	.004	.008	.012	.016	.020	.020	.040	.060	.080	
<div>Grooving</div> <div></div>	JX1 JX3	Overall	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>1200 (600-1600) SFM</div>					<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>.003 (.002-.004) IPR</div>	<div>When using SX7 / SX5, increase feed rates 100% vs. Whisker Ceramics</div>					<div>WET</div> <div></div>				
	SX5	Waspaloy	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>700 (600-800) SFM</div>	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>.006 (.003-.007) IPR</div>														
	SX3 SX7	Overall	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>750 (600-900) SFM</div>	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>.0045 (.003-.006) IPR</div>														
	WA1	Overall	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>800 (600-1100) SFM</div>	<div><div></div><div></div><div></div><div></div><div></div><div></div></div> <div>.003 (.002-.004) IPR</div>														

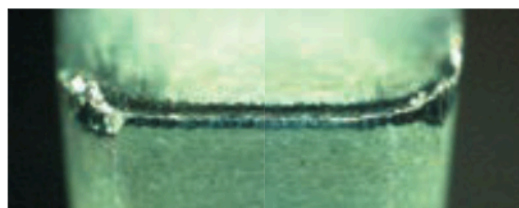
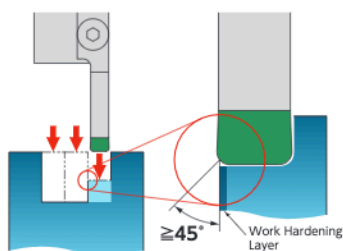
When using SX7/SX5,
increase feed rates 100%
vs. Whisker Ceramics

Application	Grade	Work material	Cutting speed					Feed					Depth of cut					Coolant
			100	150	200	250	300	350	.001	.002	.005	.010	.015	.020	.040	.060	.080	
	DM4 QM3 ZM3	HRSA											<div>Width: .118-.157" Feed .002 -.006"</div> <div>Width: .157-.197" Feed .004 -.008"</div> <div>Width: > .197" Feed .006 -.014"</div>					
			75-225 SFM					.002-.014 IPR										

Width: .118-.157" Feed .002 - .006"
Width: .157-.197" Feed .004 - .008"
Width: > .197" Feed .006 - .014"

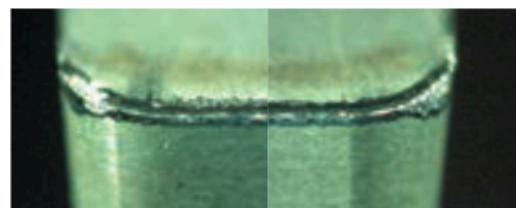
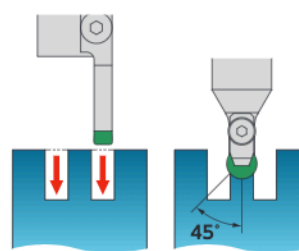
When applying JX1/JX3, increase speed to over 1000 SFM
When applying SX3/SX7/SX5, increase feed rates 100% vs. Whisker Ceramics

Application Information



When machining a grooved area with multiple passes, the insert radius engages a potentially work hardened area during the last remaining plunge. This programming procedure sets up the potential of corner radius chipping or notching.

Change to



The grooving insert is plunged down both outside walls thus maintaining a good finish. The remaining material can be removed by using a stronger insert shape such as a RCGX style.