



# **NS240R LONG FLUTE FINISHER**

## **SOLID CARBIDE LONG FLUTE END MILL FOR ONE PASS FINISHING**

The Niagara NS240R long flute finisher is a new geometry for optimized performance in general machining. The NS240R allows one pass machining in square shoulder milling applications, thus reducing cycle time. These end mills are designed especially to produce high tolerance straight walls in deep pockets and to provide excellent surface quality.

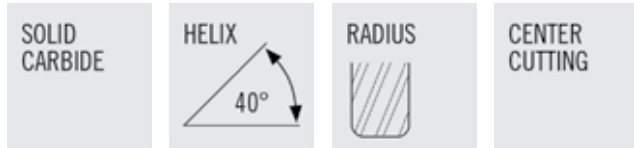
The Niagara long flute finishers are offered with a 5xD depth of cut as standard, ranging in diameters from 1/4" to 1 1/4" with various radii available.

The NS240R is effective in most materials but excels in stainless steel and titanium. A typical application for this end mill is in the manufacture of aerospace structural parts made from titanium and aluminum.



**Niagara Cutter**

# ELITE HIGH PERFORMANCE- NS240R

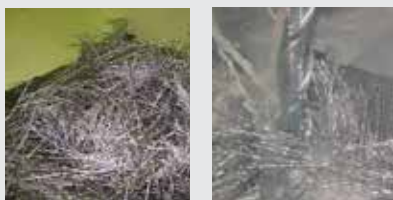


- Standard with Radius
- High wear resistant AlTiN coating
- Designed for peripheral finish milling of aerospace parts requiring long axial engagement in materials such as titanium, stainless steels, and super alloys.
- Rigid design to minimize tool deflection

EDP	DESCRIPTION	FLUTE DIA	SHANK DIA	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	COATING	RADIUS
N00291	NS240R-0.250-D1-R010.0-Z2	1/4	1/4	1-1/4	3	2	AlTiN	0.010
N00292	NS240R-0.313-D1-R010.0-Z2	5/16	5/16	1-1/2	3-1/2	2	AlTiN	0.010
N00293	NS240R-0.375-D1-R010.0-Z2	3/8	3/8	1-7/8	4	2	AlTiN	0.010
N00294	NS240R-0.500-D1-R010.0-Z2	1/2	1/2	2-1/2	5	2	AlTiN	0.010
N00295	NS240R-0.625-D1-R015.0-Z2	5/8	5/8	3-1/8	6	2	AlTiN	0.015
N00296	NS240R-0.750-D1-R015.0-Z2	3/4	3/4	3-3/4	7	2	AlTiN	0.015
N00297	NS240R-0.750-D1-R120.0-Z2	3/4	3/4	3-3/4	7	2	AlTiN	0.120
N00298	NS240R-0.750-D1-R250.0-Z2	3/4	3/4	3-3/4	7	2	AlTiN	0.250
N00299	NS240R-1.000-D1-R015.0-Z2	1	1	5	8	2	AlTiN	0.015
N00300	NS240R-1.000-D1-R120.0-Z2	1	1	5	8	2	AlTiN	0.120
N00301	NS240R-1.000-D1-R250.0-Z2	1	1	5	8	2	AlTiN	0.250
N00302	NS240R-1.250-D1-R015.0-Z2	1-1/4	1-1/4	6-1/4	9-1/2	2	AlTiN	0.015
N00303	NS240R-1.250-D1-R120.0-Z2	1-1/4	1-1/4	6-1/4	9-1/2	2	AlTiN	0.120
N00304	NS240R-1.250-D1-R250.0-Z2	1-1/4	1-1/4	6-1/4	9-1/2	2	AlTiN	0.250

## NS240R APPLICATION EXAMPLE

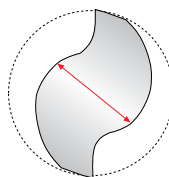
Material	Titanium	
Spindle	BT50	
Cutter	NS240R	
Diameter	1 1/4"	
Cutting data	$v_c$	165 sf/min
	$n$	497 rev/min
	$f_z$	.012"
	$v_f$	12 ipm
	$a_e$	.012"
	$a_p$	5.5"
	$h_m$	.0011"
	$Q$	.50 in <sup>3</sup> /min
	$R_a$	0.51 $\mu$ m



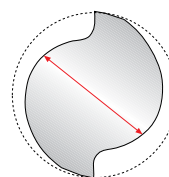
## FEATURES

- NS240R stabilized edge design - gives improved surface quality
- Increased core diameter - for more stability
- Defined back taper from cutting length - to compensate tool deflection
- Polished AlTiN coating - gives increased tool life

## INCREASED CORE DIAMETER



Typical two flute core diameter



NS240R core diameter

## ADVANTAGES

- Optimized for finishing
- Vibration free machining
- High surface quality
- Correct workpiece dimensions in one pass
- High process stability
- Aerospace corner radii available on some diameters

The enlarged core diameter provides better cutter stability and less tool deflection during machining.

**CUTTING DATA**

SIDE MILLING - FINISHING												
SMG	ap x Dc	ae x Dc	vf [sf / min]									
				1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4	
E / M / A 1 - 2	5	0.02	660	RPM	10080	8070	6720	5040	4030	3360	2520	2020
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			590 - 720	Feedrate [in/min]	50.4	50.4	50.4	50.4	50.4	50.4	50.4	50.4
E / M / A 3 - 4	5	0.02	590	RPM	9020	7210	6010	4510	3610	3010	2250	1800
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			520 - 660	Feedrate [in/min]	45.1	45.1	45.1	45.1	45.1	45.2	45.0	45.0
E / M / A 5 - 6	5	0.02	520	RPM	7950	6360	5300	3970	3180	2650	1990	1590
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			460 - 590	Feedrate [in/min]	39.8	39.8	39.8	39.7	39.8	39.8	39.8	39.8
E / M / A 8 - 9	5	0.02	330	RPM	5040	4030	3360	2520	2020	1680	1260	1010
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			260 - 390	Feedrate [in/min]	25.2	25.2	25.2	25.2	25.3	25.2	25.2	25.3
E / M / A 10 - 11	5	0.02	260	RPM	3970	3180	2650	1990	1590	1320	990	790
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			200 - 330	Feedrate [in/min]	19.9	19.9	19.9	19.9	19.9	19.8	19.8	19.8
E 12 - 13	5	0.02	390	RPM	5960	4770	3970	2980	2380	1990	1490	1190
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			330 - 460	Feedrate [in/min]	29.8	29.8	29.8	29.8	29.8	29.9	29.8	29.8
E 14 - 15	5	0.02	330	RPM	5040	4030	3360	2520	2020	1680	1260	1010
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			260 - 390	Feedrate [in/min]	25.2	25.2	25.2	25.2	25.3	25.2	25.2	25.3
E / M / A 16	5	0.02	2620	RPM	40030	32030	26690	20020	16010	13340	10010	8010
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			2300 - 2950	Feedrate [in/min]	200.2	200.2	200.2	200.2	200.1	200.1	200.2	200.3
E / M / A 17	5	0.02	2620	RPM	40030	32030	26690	20020	16010	13340	10010	8010
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			2300 - 2950	Feedrate [in/min]	200.2	200.2	200.2	200.2	200.1	200.1	200.2	200.3
E / M / A 18	5	0.02	1310	RPM	20020	16010	13340	10010	8010	6670	5000	4000
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			1150 - 1480	Feedrate [in/min]	100.1	100.1	100.1	100.1	100.1	100.1	100.0	100.0
E / M / A 19	5	0.02	160	RPM	2440	1960	1630	1220	980	810	610	490
				CPT	0.0018	0.0022	0.0026	0.0035	0.0044	0.0053	0.0070	0.0088
			130 - 200	Feedrate [in/min]	8.5	8.6	8.6	8.5	8.6	8.5	8.5	8.6
E / M / A 20	5	0.02	160	RPM	2440	1960	1630	1220	980	810	610	490
				CPT	0.0018	0.0022	0.0026	0.0035	0.0044	0.0053	0.0070	0.0088
			130 - 200	Feedrate [in/min]	8.5	8.6	8.6	8.5	8.6	8.5	8.5	8.6
E / M / A 21	5	0.02	130	RPM	1990	1590	1320	990	790	660	500	400
				CPT	0.0018	0.0022	0.0026	0.0035	0.0044	0.0053	0.0070	0.0088
			100 - 160	Feedrate [in/min]	7.0	7.0	6.9	6.9	6.9	6.9	7.0	7.0
E / M / A 22	5	0.02	330	RPM	5040	4030	3360	2520	2020	1680	1260	1010
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			260 - 390	Feedrate [in/min]	25.2	25.2	25.2	25.2	25.3	25.2	25.2	25.3
A / D GRAPHITE	5	0.02	3280	RPM	50120	40090	33410	25060	20050	16710	12530	10020
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			2950 - 3610	Feedrate [in/min]	250.6	250.6	250.6	250.6	250.6	250.7	250.6	250.5
A / D PLASTIC (SOFT)	5	0.02	3280	RPM	50120	40090	33410	25060	20050	16710	12530	10020
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			2950 - 3610	Feedrate [in/min]	250.6	250.6	250.6	250.6	250.6	250.7	250.6	250.5
A / D PLASTIC (HARD)	5	0.02	1970	RPM	30100	24080	20070	15050	12040	10030	7530	6020
				CPT	0.0025	0.0031	0.0038	0.0050	0.0063	0.0075	0.0100	0.0125
			1640 - 2300	Feedrate [in/min]	150.5	150.5	150.5	150.5	150.5	150.5	150.6	150.5



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For customer service, call:  
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