Application Data for High Performance 323, 355, and 365 Series ULTRATOOL® End Mills

The milling data presented below is for the **323**, **355**, and **365** Series of Ultra end mills. When using SmoothCoat & SmoothEdge surface treatments, Surface Feet or Meters Per Minute can be increased from the stated levels by at least 25%.
Do not use a radial DOC exceeding more than 25% of diameter for Series 355 only.

Peripheral Milling data based on axial depth ≤ 100% of tool diameter & radial depth of ≤ 25% of tool diameter.

Slot Milling data based on axial depth of cut = 50% of tool diameter.

End Mill Specifications:
Diameter: +.000 / -.002
Shank Diameter: +.0000 / -.0003
LOC: +.060 / -.000
OAL: ± .060
Helix: ± 2°

Milling; Fractional

Material	SFPM	SFPM	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
Steel	**Peripheral**	**Slotting**	**Feed Per Tooth (FPT)**									
1018 / 1020	300 to 600	200 to 400	.0007	.0012	.0015	.0018	.0020	.0025	.0030	.0035	.0040	.0045
4140 / 4340 / P20	250 to 500	200 to 350	.00065	.0010	.0012	.0015	.0018	.0022	.0025	.0030	.0035	.0040
Stainless Steel												
303 / 304 / 316	250 to 400	200 to 350	.0006	.0008	.0010	.0012	.0018	.0022	.0025	.0030	.0035	.0038
410 / 420 / 440C	200 to 300	150 to 250	.0006	.0008	.0010	.0012	.0018	.0022	.0025	.0030	.0035	.0038
15-5/17-4 ≤ 32HRc	200 to 350	150 to 300	.0006	.0008	.0010	.0012	.0018	.0022	.0025	.0030	.0035	.0038
15-5/17-4 ≥ 32HRc	150 to 250	150 to 250	.0004	.0006	.0008	.0010	.0015	.0020	.0020	.0025	.0030	.0035
Tool Steel												
A2/D2/H13 ≤ 32HRc	200 to 300	150 to 250	.0005	.0008	.0010	.0012	.0018	.0022	.0025	.0030	.0035	.0035
A2/D2/H13 ≥ 32HRc	150 to 250	100 to 200	.0004	.0006	.0008	.0010	.0015	.0020	.0020	.0025	.0030	.0035
Titanium												
6Al-4V	150 to 300	125 to 225	.0005	.0008	.0010	.0010	.0012	.0020	.0025	.0025	.0030	.0040
High Temp Alloys												
Inconel 625	100 to 150	75 to 125	.0005	.0007	.0010	.0012	.0012	.0018	.0020	.0020	.0025	.0030
Inconel 718	70 to 150	50 to 100	.0005	.0007	.0008	.0009	.0012	.0018	.0020	.0020	.0030	.0040
Cast Iron												
Gray Iron ≤ 32HRc	150 to 400	150 to 300	.0005	.0007	.0010	.0012	.0015	.0018	.0020	.0030	.0040	.0045

Application Data for Series 323, 355, and 365 High Performance End Mills (continued); Peel Milling

Recommendations are based upon a **radial cut depth of 10%** of the end mill's diameter and **axial cut depth of 50-85%** of the tool's LOC.

Peel milling can be performed wet or dry (with AT coating); please consult **technical@toolalliance.com** for specific application data.

See it run now!
Scan the Quick Code and watch the Series 365 milling various materials on the Tool Alliance YouTube channel.

Series 323, 355 and 365 Peel Milling
Surface Feet Per Minute (**SFPM**) and Feed Per Tooth (**FPT**) recommendations by tool diameter and material:

Material	SFPM	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"	1"
Steel	**Peripheral**	**Feed Per Tooth (FPT)**									
1018 / 1020	400 to 600	.001-.003	.001-.004	.0015-.005	.002-.008	.002-.008	.003-.010	.003-.010	.003-.010	.004-.012	.004-.012
4140 / 4340 / P20	350 to 500	.001-.002	.001-.003	.001-.004	.0015-.006	.0015-.006	.002-.007	.002-.007	.002-.007	.0025-.008	.0025-.008
Stainless Steel											
303 / 304 / 316	300 to 500	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
410 / 420 / 440C	250 to 400	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
15-5/17-4 ≤ 32HRc	300 to 500	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
15-5/17-4 ≥ 32HRc	200 to 300	.0005-.002	.0005-.002	.001-.003	.0015-.005	.0015-.005	.002-.006	.002-.006	.002-.006	.003-.008	.003-.008
Tool Steel											
A2/D2/H13 ≤ 32HRc	250 to 350	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
A2/D2/H13 ≥ 32HRc	200 to 300	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
Titanium											
6Al-4V	250 to 300	.001-.002	.001-.003	.0015-.004	.002-.006	.002-.006	.003-.008	.003-.008	.003-.008	.003-.010	.003-.010
High Temp Alloys											
Inconel 625	125 to 200	.0005-.002	.0005-.002	.001-.003	.0015-.005	.0015-.005	.002-.006	.002-.006	.002-.006	.003-.008	.003-.008
Inconel 718	100 to 150	.0005-.002	.0005-.002	.001-.003	.0015-.005	.0015-.005	.002-.006	.002-.006	.002-.006	.003-.008	.003-.008
Cast Iron											
Gray Iron ≤ 32HRc	250 to 500	.001-.002	.001-.003	.001-.004	.0015-.006	.0015-.006	.002-.007	.002-.007	.002-.007	.0025-.008	.0025-.008