HP Endmill Speeds and Feeds for Material Applications

Endmills	V4 Stub and Standard	V4 Long	V5 Stub and Standard	V5 Long	Roughers	Roughers	HY5 Stub and Standard	HY5 Long	F45 Standard	F45 Standard	AlumaZip	TwisterMill
Series	PowerA 400, 402	PowerA 401	PowerA 408, 410	PowerA 409	Uncoated 433	PowerA 433	PowerA 456, 458	PowerA 457	Uncoated 459	PowerA 411	Uncoated 428	Uncoated 452
Material Group	Surface Feet Per Minute											
1.1	500-800	330-450	500-800	330-450	260-395	500-700	500-1,400	325-900				
1.2	500-800	330-450	500-800	330-450	260-395	500-700	500-1,400	325-900				
1.3	400-525	225-330	400-525	225-330	200-260	400-550	330-1,000	220-650				
1.4	400-525	225-330	400-525	225-330	200-260	400-550	330-1,000	220-650	220-650	330-1,000		
1.5	250-400	165-225	330-700	165-225	130-200	250-400	330-650	220-425	220-425	330-650		
1.6	130-250	100-165	330-700	100-165	65-130	125-260	330-650	220-425	220-425	330-650		
1.7	130-250	100-165	330-700	100-165			330-650	220-425	220-425	330-650		
1.8	130-250	100-165	330-700	100-165			330-650	220-425	220-425	330-650		
1.9												
2.1	250-800	165-330	250-800	165-330	130-260	250-550	250-800	160-520	160-520	250-800		165-330
2.2	200-600	125-200	200-600	125-200	100-160	200-325	200-600	130-400	130-400	200-600		135-200
2.3	165-300	100-165	165-300	100-165	80-130	160-260	100-300	65-200	65-200	100-300		80-180
2.4	145-200	110-160	145-200	110-160								
3.1	210-700	225-400	210-700	225-400	160-260	320-550	200-650	130-425				
3.2	180-550	200-330	180-550	200-330	130-230	260-450	165-575	100-380				
3.3	150-450	165-225	150-450	165-225	115-160	230-325	135-460	90-300				
3.4	110-330	125-200	110-330	125-200	80-130	160-260	100-300	65-200				
4.1	200-400	200-330	330-1,000	200-330	200-330	400-650	330-1,000	220-650	220-650	330-1,000		260-425
4.2	125-330	165-225	250-800	165-225	130-200	260-400	260-800	130-520	130-520	260-800		165-260
4.3	130-200	100-125	130-400	100-125	65-100	130-200	130-400	85-260	85-260	130-400		80-135
5.1	330-700	225-400	330-1,000	225-400	200-330	400-650	330-1,000	220-650	220-650	330-1,000		260-425
5.2	250-800	125-225	250-800	125-225	100-200	300-400	260-800	170-520	170-520	260-800		130-260
5.3	130-400	100-200	130-400	100-200	65-160	130-325	130-400	85-260	85-260	130-400		80-230
6.1					330-660							
6.2					425-560							650-850
6.3					425-560							650-850
6.4					65-160							135-260
7.1					160-1,500						1,200-3,000	
7.2					200-1,500						1,200-3,000	
7.3					130-260						1,000 -2,500	
7.4					115-160						330-1,500	
8.1					260-520						650-2,000	
8.2					230-425						300-900	
8.3					230-425							
9.1												

Endmills	HyperMill	Mold Mills Standard Length	Mold Mills Standard Length	Mold Mills Standard Length	Mold Mills Long Length	Mold Mills Long Length	Mold Mills Long Length	AxMill 2 Flute Standard Length	AxMill 2 Flute Long Length	AxMill 2 Flute Stub Length	AxMill 3 Flute Standard Length	AxMill 3 Flute Long Length	AxMill 3 Flute Stub Length
Series	Uncoated 428	Uncoated 440	PowerA 440	PowerN 440	Uncoated 440	PowerA 440	PowerN 440	Uncoated 414	Uncoated 415	Uncoated 416	Uncoated 420	Uncoated 421	Uncoated 422
Material Group	Surface Feet Per Minute												
1.1		165-230	330-460	460-650	100-140	200-275	280-390						
1.2		165-230	330-460	460-650	100-140	200-275	280-390						
1.3		115-165	230-330	325-460	70-100	140-200	200-280						
1.4		115-165	230-330	325-460	70-100	140-200	200-280						
1.5		85-115	165-230	230-325	50-70	100-140	140-200						
1.6		50-100	100-200	140-280	40-75	60-120	85-170						
1.7		50-100	100-200	140-280	40-75	60-120	85-170						
1.8		50-100	100-200	140-280	40-75	60-120	85-170						
1.9		50-100	130-250	140-280									
2.1		85-165	165-330	230-460	60-120	100-200	140-280						
2.2		70-100	135-200	190-280	50-75	80-120	115-170						
2.3		50-85	100-165	140-230	40-70	60-100	85-140						
2.4		85-150	165-300	230-460	60-110	100-180	140-250						
3.1		100-165	200-330	280-460	75-120	120-200	170-280						
3.2		85-115	165-230	190-280	60-85	100-140	140-200						
3.3		70-100	135-200	190-280	50-75	80-120	115-170						
3.4		115-200	230-400	325-560	70-145	140-240	200-340						
4.1		85-115	165-230	230-325	60-85	100-140	140-200						
4.2		50-70	100-135	140-190	40-50	60-80	85-115						
4.3		115-200	230-400	325-560	70-145	140-240	200-340						
5.1		70-115	135-230	190-325	50-70	80-140	115-200						
5.2		50-100	100-200	140-280	40-75	60-120	85-170						
5.3		200-400	400-800	560-1,100	145-290	240-480	340-670						
6.1		325-400	650-800	900-1,100	235-290	390-480	550-675	800-1,000	800-1,000	800-1,000	800-1,000	800-1,000	800-1,000
6.2		325-400	650-800	900-1,100	235-290	390-480	550-675	600-900	600-900	600-900	600-900	600-900	600-900
6.3		70-115	135-230	190-325	50-70	80-140	115-200	425-560	425-560	425-560	425-560	425-560	425-560
6.4								65-160	65-160	65-160	65-160	65-160	65-160
7.1	1,200-3,000							1,200-2,500	1,200-2,500	1,200-2,500	1,200-2,500	1,200-2,500	1,200-2,500
7.2	1,200-3,000							600-1,200	600-1,200	600-1,200	600-1,200	600-1,200	600-1,200
7.3	1,000 -2,500							500-800	500-800	500-800	500-800	500-800	500-800
7.4	330-1,500							300-600	300-600	300-600	300-600	300-600	300-600
8.1	650-2,000							650-2,000	650-2,000	650-2,000	650-2,000	650-2,000	650-2,000
8.2	300-900							300-900	300-900	300-900	300-900	300-900	300-900
8.3								230-425	230-425	230-425	230-425	230-425	230-425
9.1													