1200 DRILL MILL - IMPERIAL



1200 Series 4-Flute Drill Mill - 90°

The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyizing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

	Low Si Aluminum (<10%) (1100-1500) SFM (ft/min)					Brass & Copper (400-600) SFM (ft/min)					Cast Iron (250-400) SFM (ft/min)				
	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	full	full	(.35)xD	(.115)xD	(.010015)	full	full	(.35)xD	(.115)xD	(.010015)	full	full	(.35)xD	(.115)xD	(.010015)
1/8"	.0010	.0012	.0010	.0012	.0010	.0009	.0011	.0007	.0011	.0007	.0010	.0012	.0008	.0012	.0008
1/4"	.0030	.0034	.0030	.0034	.0030	.0013	.0014	.0009	.0015	.0009	.0014	.0015	.0010	.0015	.0010
3/8"	.0045	.0048	.0045	.0048	.0045	.0021	.0020	.0012	.0021	.0012	.0022	.0022	.0013	.0022	.0013
1/2"	.0060	.0063	.0060	.0063	.0060	.0025	.0028	.0025	.0028	.0025	.0025	.0030	.0025	.0030	.0025
3/4"	.0080	.0085	.0080	.0085	.0080	.0030	.0035	.0028	.0035	.0028	.0028	.0035	.0030	.0035	.0030
1"	.0100	.0114	.0100	.0114	.0100	.0040	.0045	.0035	.0040	.0035	.0035	.0045	.0040	.0045	.0040
	Hardened Steels > 48 RC (80-130) SFM (ft/min)				Steels (230-350) SFM (ft/min)				Stainless Steels (130-260) SFM (tt/min)						
								, 350) Sill (iq)	,			(
	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish
Axial Depth	Slotting < (1xD)	Plunge Ramp < (1xD)	Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)	Slotting < (1xD)	Plunge Ramp < (1xD)	Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)	Slotting < (1xD)	Plunge Ramp < (1xD)	Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)
Axial Depth Radial Width	Slotting < (1xD) full	Plunge Ramp < (1xD) full	Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.010015)	Slotting < (1xD) full	Plunge Ramp < (1xD) full	Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.010015)	Slotting < (1xD) full	Plunge Ramp < (1xD) full	Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.010015)
Axial Depth Radial Width 1/8"	Slotting < (1xD) full .0008	Plunge Ramp < (1xD) full .0009	Rough Profile 1.5xD (.35)xD .0008	HEM 1xD (.115)xD .0009	Finish < (1xD) (.010015) .0008	Slotting < (1xD) full .0006	Plunge Ramp < (1xD) full .0008	Rough Profile 1.5xD (.35)xD .0006	HEM 1xD (.115)xD .0008	Finish < (1xD) (.010015) .0006	Slotting < (1xD) full .0006	Plunge Ramp < (1xD) full .0008	Rough Profile 1.5xD (.35)xD .0006	HEM 1xD (.115)xD .0008	Finish < (1xD) (.010015) .0006
Axial Depth Radial Width 1/8" 1/4"	Slotting < (1xD) full .0008 .0015	Plunge Ramp < (1xD) full .0009 .0016	Rough Profile 1.5xD (.35)xD .0008 .0015	HEM 1xD (.115)xD .0009 .0016	Finish < (1xD) (.010015) .0008 .0015	Slotting < (1xD) full .0006 .0014	Plunge Ramp < (1xD) full .0008 .0014	Rough Profile 1.5xD (.35)xD .0006 .0014	HEM 1xD (.115)xD .0008 .0014	Finish < (1xD) (.010015) .0006 .0014	Slotting < (1xD) full .0006 .0014	Plunge Ramp < (1xD) full .0008 .0014	Rough Profile 1.5xD (.35)xD .0006 .0014	HEM 1xD (.115)xD .0008 .0014	Finish < (1xD) (.010015) .0006 .0014
Axial Depth Radial Width 1/8" 1/4" 3/8"	Slotting < (1xD) full .0008 .0015 .0020	Plunge Ramp < (1xD) full .0009 .0016 .0022	Rough Profile 1.5xD (.35)xD .0008 .0015 .0020	HEM 1xD (.115)xD .0009 .0016 .0022	Finish < (1xD) (.010015) .0008 .0015 .0020	Slotting < (1xD) full .0006 .0014 .0022	Plunge Ramp < (1xD) full .0008 .0014 .0022	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022	HEM 1xD (.115)xD .0008 .0014 .0022	Finish < (1xD) (.010015) .0006 .0014 .0022	Slotting < (1xD) full .0006 .0014 .0022	Plunge Ramp < (1xD) full .0008 .0014 .0022	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022	HEM 1xD (.115)xD .0008 .0014 .0022	Finish < (1xD) (.010015) .0006 .0014 .0022
Axial Depth Radial Width 1/8" 1/4" 3/8" 1/2"	Slotting < (1xD) full .0008 .0015 .0020 .0025	Plunge Ramp < (1xD) full .0009 .0016 .0022 .0025	Rough Profile 1.5xD (.35)xD .0008 .0015 .0020 .0025	HEM 1xD (.115)xD .0009 .0016 .0022 .0025	Finish < (1xD) (.010015) .0008 .0015 .0020 .0025	Slotting < (1xD) full .0006 .0014 .0022 .0025	Plunge Ramp < (1xD) full .0008 .0014 .0022 .0025	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022 .0025	HEM 1xD (.115)xD .0008 .0014 .0022 .0025	Finish < (1xD) (.010015) .0006 .0014 .0022 .0025	Slotting < (1xD) full .0006 .0014 .0022 .0023	Plunge Ramp < (1xD) full .0008 .0014 .0022 .0023	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022 .0023	HEM 1xD (.115)xD .0008 .0014 .0022 .0023	Finish < (1xD) (.010015) .0006 .0014 .0022 .0023
Axial Depth Radial Width 1/8" 1/4" 3/8" 1/2" 3/4"	Slotting < (1xD) full .0008 .0015 .0020 .0025 .0028	Plunge Ramp < (1xD) full .0009 .0016 .0022 .0025 .0030	Rough Profile 1.5xD (.35)xD .0008 .0015 .0020 .0025 .0028	HEM 1xD (.115)xD .0009 .0016 .0022 .0025 .0030	Finish < (1xD) (.010015) .0008 .0015 .0020 .0025 .0028	Slotting < (1xD) full .0006 .0014 .0022 .0025 .0028	Plunge Ramp < (1xD) full .0008 .0014 .0022 .0025 .0028	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022 .0025 .0028	HEM 1xD (.115)xD .0008 .0014 .0022 .0025 .0028	Finish < (1xD) (.010015) .0006 .0014 .0022 .0025 .0028	Slotting < (1xD) full .0006 .0014 .0022 .0023 .0025	Plunge Ramp < (1xD) full .0008 .0014 .0022 .0023 .0025	Rough Profile 1.5xD (.35)xD .0006 .0014 .0022 .0023 .0025	HEM 1xD (.115)xD .0008 .0014 .0022 .0023 .0025	Finish < (1xD) (.010015) .0006 .0014 .0022 .0023 .0025

Lice general milling speeds and Lice general milling speeds and	RILL MILL USES			CHAMFERING		SIDE MILLING		
Included Angle See defined mining spects and feeds. Use tool diameter at top of part to determine chip load. Get the banefits of our 3 series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end mills with additions reduction in machine carousel point and denth is 1/8" (alculate requirements. Designed for all series end	Recommended For	Included Angle 90 °		Use general milling speeds and feeds. Use tool diameter at top of part to determine chip load. (i.e., if using 1/4" diameter, 90° point and denth is 1/8", calculate		Use general milling speeds and feeds. All the benefits of our 3200 series end mills with additional reduction in machine carousel requirements. Designed for all		
Chamfering Yes Chamferiy Yes Chamfering Yes Chamfering Yes Chamfering Yes Chamfer	ChamferingYesSide MillingYesDrillingNon-Ferrous OnlySpottingLimited			the chip load based on 1/8"		tool room applications limiting tool changes and increasing productivity.		
Side Milling Yes Value and increasing productivity.				improved ascetics, increase SFM				
Drilling Non-Ferrous Only // and reduce feed rate.			- Y/ /	and reduce feed rate.	- Y A			
Spotting Limited								

1200 DRILL MILL - METRIC



1200 Series 4-Flute Drill Mill - 90°

The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyizing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

	Low Si Aluminum (<10%) (335-457) SMM (m/min)					Brass & Copper (121-182) SMM (m/min)					Cast Iron (76-121)SMM (m/min)				
	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish
Axial Depth	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)	< (1xD)	< (1xD)	1.5xD	1xD	< (1xD)
Radial Width	full	full	(.35)xD	(.115)xD	(.2540)	full	full	(.35)xD	(.115)xD	(.2540)	full	full	(.35)xD	(.115)xD	(.2540)
3	.0254	.0305	.0254	.0305	.0254	.0229	.0279	.0178	.0279	.0178	.0254	.0305	.0203	.0305	.0203
6	.0762	.0864	.0762	.0864	.0762	.0330	.0356	.0229	.0381	.0229	.0356	.0381	.0254	.0381	.0254
10	.1143	.1219	.1143	.1219	.1143	.0533	.0508	.0305	.0533	.0305	.0559	.0559	.0330	.0559	.0330
12	.1524	.1600	.1524	.1600	.1524	.0635	.0711	.0635	.0711	.0635	.0635	.0762	.0635	.0762	.0635
20	.2032	.2159	.2032	.2159	.2032	.0762	.0889	.0711	.0889	.0711	.0711	.0889	.0762	.0889	.0762
25	.2540	.2896	.2540	.2896	.2540	.1016	.1143	.0889	.1016	.0889	.0889	.1143	.1016	.1143	.1016
	Hardened Steels > 48 RC (24-39) SMM (m/min)				Steels Stainless Steels (70-106) SMM (m/min) (39-85) SMM (m/m					S nin)					
		(24-	55) 5111 (11/1				(70-	100) 311111 (111/1	mm)			(59	-85) SMM (m/n	IIII <i>)</i>	
	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	Plunge Ramp	Rough Profile	HEM	Finish	Slotting	(39 Plunge Ramp	-85) SMM (m/n Rough Profile	HEM	Finish
Axial Depth	Slotting < (1xD)	(24- Plunge Ramp < (1xD)	Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)	Slotting < (1xD)	Plunge Ramp < (1xD)	Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)	Slotting < (1xD)	(39 Plunge Ramp < (1xD)	-85) SMM (m/n Rough Profile 1.5xD	HEM 1xD	Finish < (1xD)
Axial Depth Radial Width	Slotting < (1xD) full	Plunge Ramp < (1xD) full	Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.2540)	Slotting < (1xD) full	Plunge Ramp < (1xD) full	Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.2540)	Slotting < (1xD) full	(39 Plunge Ramp < (1xD) full	-85) SMM (m/n Rough Profile 1.5xD (.35)xD	HEM 1xD (.115)xD	Finish < (1xD) (.2540)
Axial Depth Radial Width 3	Slotting < (1xD) full .0203	Plunge Ramp < (1xD) full .0229	Rough Profile 1.5xD (.35)xD .0203	HEM 1xD (.115)xD .0229	Finish < (1xD) (.2540) .0203	Slotting < (1xD) full .0152	Plunge Ramp < (1xD) full .0203	Rough Profile 1.5xD (.35)xD .0152	HEM 1xD (.115)xD .0203	Finish < (1xD) (.2540) .0152	Slotting < (1xD) full .0152	Plunge Ramp < (1xD) full .0203	-85) SMM (m/n Rough Profile 1.5xD (.35)xD .0152	HEM 1xD (.115)xD .0203	Finish < (1xD) (.2540) .0152
Axial Depth Radial Width 3 6	Slotting < (1xD) full .0203 .0381	(24- Plunge Ramp < (1xD) full .0229 .0406	Rough Profile 1.5xD (.35)xD .0203 .0381	HEM 1xD (.115)xD .0229 .0406	Finish < (1xD) (.2540) .0203 .0381	Slotting < (1xD) full .0152 .0356	Plunge Ramp < (1xD) full .0203 .0356	Rough Profile 1.5xD (.35)xD .0152 .0356	HEM 1xD (.115)xD .0203 .0356	Finish < (1xD) (.2540) .0152 .0356	Slotting < (1xD) full .0152 .0356	(39 Plunge Ramp < (1xD) full .0203 .0356	-85) SMM (m/m Profile 1.5xD (.35)xD .0152 .0356	HEM 1xD (.115)xD .0203 .0356	Finish < (1xD) (.2540) .0152 .0356
Axial Depth Radial Width 3 6 10	Slotting < (1xD) full .0203 .0381 .0508	(24- Plunge Ramp < (1xD) full .0229 .0406 .0559	Rough Profile 1.5xD (.35)xD .0203 .0381 .0508	HEM 1xD (.115)xD .0229 .0406 .0559	Finish < (1xD) (.2540) .0203 .0381 .0508	Slotting < (1xD) full .0152 .0356 .0559	Plunge Ramp < (1xD) full .0203 .0356 .0559	Rough Profile 1.5xD (.35)xD .0152 .0356 .0559	HEM 1xD (.115)xD .0203 .0356 .0559	Finish < (1xD) (.2540) .0152 .0356 .0559	Slotting < (1xD) full .0152 .0356 .0559	(39) Plunge Ramp < (1xD) full .0203 .0356 .0559	-85) SMM (m/m Profile 1.5xD (.35)xD .0152 .0356 .0559	HEM 1xD (.115)xD .0203 .0356 .0559	Finish < (1xD) (.2540) .0152 .0356 .0559
Axial Depth Radial Width 3 6 10 12	Slotting < (1xD) full .0203 .0381 .0508 .0635	(24- Plunge Ramp < (1xD) full .0229 .0406 .0559 .0635	Rough Profile 1.5xD (.35)xD .0203 .0381 .0508 .0635	HEM 1xD (.115)xD .0229 .0406 .0559 .0635	Finish < (1xD) (.2540) .0203 .0381 .0508 .0635	Slotting < (1xD) full .0152 .0356 .0559 .0635	Plunge Ramp < (1xD) full .0203 .0356 .0559 .0635	Rough Profile 1.5xD (.35)xD .0152 .0356 .0559 .0635	HEM 1xD (.115)xD .0203 .0356 .0559 .0635	Finish < (1xD) (.2540) .0152 .0356 .0559 .0635	Slotting < (1xD) full .0152 .0356 .0559 .0584	(39) Plunge Ramp < (1xD) full .0203 .0356 .0559 .0584	-85) SMM (m/m Profile 1.5xD (.35)xD .0152 .0356 .0559 .0584	HEM 1xD (.115)xD .0203 .0356 .0559 .0584	Finish < (1xD) (.2540) .0152 .0356 .0559 .0584
Axial Depth Radial Width 3 6 10 12 20	Slotting < (1xD) full .0203 .0381 .0508 .0635 .0711	 Plunge Ramp < (1xD) full .0229 .0406 .0559 .0635 .0762 	Rough Profile 1.5xD (.35)xD .0203 .0381 .0508 .0635 .0711	HEM 1xD (.115)xD .0229 .0406 .0559 .0635 .0762	Finish < (1xD) (.2540) .0203 .0381 .0508 .0635 .0711	Slotting < (1xD) full .0152 .0356 .0559 .0635 .0711	Plunge Ramp < (1xD) full .0203 .0356 .0559 .0635 .0711	Rough Profile 1.5xD (.35)xD .0152 .0356 .0559 .0635 .0711	HEM 1xD (.115)xD .0203 .0356 .0559 .0635 .0711	Finish < (1xD) (.2540) .0152 .0356 .0559 .0635 .0711	Slotting < (1xD) full .0152 .0356 .0559 .0584 .0635	 (39) Plunge Ramp < (1xD) full .0203 .0356 .0559 .0584 .0635 	-85) SMM (m/m Profile 1.5xD (.35)xD .0152 .0356 .0559 .0584 .0635	HEM 1xD (.115)xD .0203 .0356 .0559 .0584 .0635	Finish < (1xD) (.2540) .0152 .0356 .0559 .0584 .0635

DRILL MILL USES	5		CHAMFERING		SIDE MILLING
Recommended For	Included Angle 90 °		Use general milling speeds and feeds. Use tool diameter at top of part to determine chip load. (i.e.; if using 1/4" diameter, 90° point and denth is 1/8". calculate		Use general milling speeds and feeds. All the benefits of our 3200 series end mills with additional reduction in machine carousel requirements. Designed for all
Chamfering	Chamfering Yes Side Milling Yes Drilling Non-Ferrous Only		the chip load based on 1/8"		tool room applications limiting
Side Milling			improved ascetics, increase SFM		productivity.
Drilling			and reduce feed rate.	- Y/ /k	
Spotting Limited				S	