

SwiftCARB Speeds & Feeds for RampMill Tools MDC Coated

XD4 Series			ISO		XD4 Series Feeds and Speeds -MDC Coated-					P								
			Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8622															
Diameter		#FL	TEA-50			TEA-40		TEA-30		MAX AXIAL DOC	50°		40°		30°		When ramping, reduce program to	
			Chip Thickness at TEA						Surface Feet Per Min			Min		Mid		Max		RPM = 80% Feed = 50%
3/16"	0.187	4	0.0015	0.0018	0.0021	0.375	540	656	771									
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	596	724	851									
5/16"	0.312	4	0.0022	0.0027	0.0032	0.625	633	769	904									
3/8"	0.375	4	0.0025	0.0031	0.0036	0.750	670	814	958									
7/16"	0.437	4	0.0028	0.0034	0.0040	0.875	689	837	1011									
1/2"	0.500	4	0.0032	0.0038	0.0045	1.000	708	859	1011									
5/8"	0.625	4	0.0039	0.0047	0.0055	1.250	708	859	1011									
3/4"	0.750	4	0.0042	0.0051	0.0060	1.500	708	859	1011									
7/8"	0.875	4	0.0046	0.0055	0.0065	1.750	708	859	1011									
1"	1.000	4	0.0049	0.0060	0.0070	2.000	708	859	1011									
Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only																		

XD4 Series			ISO		XD4 Series Feeds and Speeds -MDC Coated-						P	
			Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340									
Diameter		#FL	TEA-55	TEA-45	TEA-35	MAX AXIAL DOC	55°	45°	35°	When ramping, reduce program to		
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 80%	Feed = 50%	
			Min	Mid	Max							
3/16"	0.187	4	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only		
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	410	497	585			
5/16"	0.312	4	0.0023	0.0028	0.0033	0.625	447	543	638			
3/8"	0.375	4	0.0027	0.0033	0.0039	0.750	484	588	692			
7/16"	0.437	4	0.0029	0.0035	0.0041	0.875	503	610	718			
1/2"	0.500	4	0.0031	0.0037	0.0044	1.000	521	633	745			
5/8"	0.625	4	0.0036	0.0044	0.0052	1.250	521	633	745			
3/4"	0.750	4	0.0039	0.0048	0.0056	1.500	521	633	745			
7/8"	0.875	4	0.0042	0.0051	0.0060	1.750	521	633	745			
1"	1.000	4	0.0044	0.0054	0.0063	2.000	521	633	745			

XD4 Series			ISO		XD4 Series Feeds and Speeds -MDC Coated-							P	
			Die & Mold Steels P20, A-2, D-2, M2, M42, T15										
Diameter		#FL	Chip Thickness			MAX AXIAL DOC	Surface Feet Per Min			When ramping, reduce program to			
			at TEA							RPM = 80%	Feed = 40%		
			TEA-45	TEA-35	TEA-28		45°	35°	28°				
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only			
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	335	407	479				
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	363	441	519				
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	382	464	545				
7/16"	0.437	4	0.0023	0.0028	0.0033	0.875	391	475	559				
1/2"	0.500	4	0.0025	0.0031	0.0036	1.000	410	497	585				
5/8"	0.625	4	0.0027	0.0032	0.0038	1.250	410	497	585				
3/4"	0.750	4	0.0029	0.0036	0.0042	1.500	410	497	585				
7/8"	0.875	4	0.0031	0.0037	0.0044	1.750	410	497	585				
1"	1.000	4	0.0032	0.0039	0.0046	2.000	410	497	585				

XD4 Series			ISO		XD4 Series Feeds and Speeds -MDC Coated-							K	
			Nodular Cast Iron, Grey Cast Iron, Malleable Cast Iron										
Diameter		#FL	TEA-45	TEA-35	TEA-28	MAX AXIAL DOC	45°	35°	28°	When ramping, reduce program to RPM = 80% Feed = 50%			
			Chip Thickness at TEA				Surface Feet Per Min						
							Min	Mid	Max				
3/16"	0.187	4	0.0015	0.0018	0.0021	0.375	466	565	665	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only			
1/4"	0.250	4	0.0018	0.0022	0.0026	0.500	484	588	692				
5/16"	0.312	4	0.0022	0.0027	0.0032	0.625	503	610	718				
3/8"	0.375	4	0.0025	0.0031	0.0036	0.750	521	633	745				
7/16"	0.437	4	0.0028	0.0034	0.0040	0.875	531	644	758				
1/2"	0.500	4	0.0032	0.0038	0.0045	1.000	559	678	798				
5/8"	0.625	4	0.0039	0.0047	0.0055	1.250	559	678	798				
3/4"	0.750	4	0.0042	0.0051	0.0060	1.500	559	678	798				
7/8"	0.875	4	0.0046	0.0055	0.0065	1.750	559	678	798				
1"	1.000	4	0.0049	0.0060	0.0070	2.000	559	678	798				

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XD4 Series			ISO					XD4 Series Feeds and Speeds -MDC Coated-					M	
			Stainless Steel (Precipitation) 15-5PH, 17-4PH											
Diameter		#FL	TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to				
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 80%	Feed = 40%			
							Min	Mid	Max					
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	329	400	470	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only				
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	350	425	500					
5/16"	0.312	4	0.0021	0.0026	0.0030	0.625	370	450	529					
3/8"	0.375	4	0.0024	0.0029	0.0034	0.750	390	473	557					
7/16"	0.437	4	0.0027	0.0032	0.0038	0.875	400	486	572					
1/2"	0.500	4	0.0029	0.0036	0.0042	1.000	410	498	586					
5/8"	0.625	4	0.0034	0.0041	0.0048	1.250	410	498	586					
3/4"	0.750	4	0.0036	0.0044	0.0052	1.500	410	498	586					
7/8"	0.875	4	0.0038	0.0046	0.0054	1.750	410	498	586					
1"	1.000	4	0.0039	0.0048	0.0056	2.000	410	498	586					

XD4 Series			ISO					XD4 Series Feeds and Speeds -MDC Coated-					M	
			Stainless Steels (Austenitic) 303, 304, 304L, 312, 316, 316L											
Diameter		#FL	TEA-30	TEA-27	TEA-24	MAX AXIAL DOC	30°	27°	24°	When ramping, reduce program to				
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 70%	Feed = 30%			
							Min	Mid	Max					
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	223	271	319	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only				
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	246	298	351					
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	268	326	383					
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	290	353	415					
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	302	366	431					
1/2"	0.500	4	0.0025	0.0031	0.0036	1.000	313	380	447					
5/8"	0.625	4	0.0027	0.0032	0.0038	1.250	313	380	447					
3/4"	0.750	4	0.0029	0.0036	0.0042	1.500	313	380	447					
7/8"	0.875	4	0.0031	0.0037	0.0044	1.750	313	380	447					
1"	1.000	4	0.0032	0.0039	0.0046	2.000	313	380	447					

XD4 Series				ISO					XD4 Series Feeds and Speeds -MDC Coated-					S		
							High Temp Alloys, Titanium Alloys Ti-6AL4V									
			TEA-32	TEA-28	TEA-24	MAX AXIAL DOC	32°	28°	24°	When ramping, reduce program to						
Diameter			Chip Thickness at TEA				Surface Feet Per Min			RPM = 70%	Feed = 30%					
							Min	Mid	Max							
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	156	190	223	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only						
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	179	217	255							
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	201	244	287							
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	223	271	319							
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	235	285	335							
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	246	298	351							
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	246	298	351							
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	246	298	351							
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	246	298	351							
1"	1.000	4	0.0027	0.0032	0.0038	2.000	246	298	351							

XD4 Series			ISO XD4 Series Feeds and Speeds -MDC Coated-										S	
			High Temp Alloys (Nickel & Cobalt Based) Monel 400, Hastelloy, Nimonic 75, Inconel 625, 718											
			TEA-30	TEA-26	TEA-22	MAX AXIAL DOC	30°	26°	22°	When ramping, reduce program to				
Diameter		#FL	Chip Thickness at TEA				Surface Feet Per Min			RPM = 70% Feed = 30%				
							Min	Mid	Max					
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	39	47	56	Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only				
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	45	54	64					
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	56	68	80					
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	56	68	80					
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	56	68	80					
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	67	81	96					
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	67	81	96					
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	67	81	96					
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	67	81	96					
1"	1.000	4	0.0027	0.0032	0.0038	2.000	67	81	96					

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XD4 Series			ISO							XD4 Series Feeds and Speeds -MDC Coated-			H
			Hardened Steels (55-60HRC)										
Diameter		#FL	TEA-30	TEA-26	TEA-22	MAX AXIAL DOC	30°	26°	22°	When ramping, reduce program to			
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 70%	Feed = 30%		
							Min	Mid	Max				
3/16"	0.187	4	0.0011	0.0014	0.0016	0.375	101	122	144				
1/4"	0.250	4	0.0017	0.0020	0.0024	0.500	112	136	160				
5/16"	0.312	4	0.0020	0.0024	0.0028	0.625	123	150	176				
3/8"	0.375	4	0.0021	0.0026	0.0030	0.750	134	163	192				
7/16"	0.437	4	0.0022	0.0027	0.0032	0.875	134	163	192				
1/2"	0.500	4	0.0024	0.0029	0.0034	1.000	146	177	208				
5/8"	0.625	4	0.0025	0.0030	0.0035	1.250	146	177	208				
3/4"	0.750	4	0.0025	0.0031	0.0036	1.500	146	177	208				
7/8"	0.875	4	0.0027	0.0032	0.0038	1.750	146	177	208				
1"	1.000	4	0.0027	0.0032	0.0038	2.000	146	177	208				
Helical Ramp Angle 3 - 5° Over 3° for Coolant-Through Only													

XT5 Series			ISO					XT5 Series Feeds and Speeds -MDC Coated-					P	
			Non-Alloy Steel, Cast Steel, Free Cutting Steel 1018, 1020, A36, 8620											
Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to				
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 80%	Feed = 50%			
			Min	Mid	Max									
3/16"	0.187	5	0.0015	0.0018	0.0021	0.375	540	656	771	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only				
1/4"	0.250	5	0.0018	0.0022	0.0026	0.500	596	724	851					
5/16"	0.312	5	0.0022	0.0027	0.0032	0.625	633	769	904					
3/8"	0.375	5	0.0025	0.0031	0.0036	0.750	670	814	958					
7/16"	0.437	5	0.0028	0.0034	0.0040	0.875	689	837	984					
1/2"	0.500	5	0.0032	0.0038	0.0045	1.000	708	859	1011					
5/8"	0.625	5	0.0039	0.0047	0.0055	1.250	708	859	1011					
3/4"	0.750	5	0.0042	0.0051	0.0060	1.500	708	859	1011					
7/8"	0.875	5	0.0046	0.0055	0.0065	1.750	708	859	1011					
1"	1.000	5	0.0049	0.0060	0.0070	2.000	708	859	1011					

XT5 Series			ISO XT5 Series Feeds and Speeds -MDC Coated-										P
			Low Alloy Steel, Cast Steel 4130, 4140, 8620, 4330, 4340										
Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to			
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 80%	Feed = 50%		
							Min	Mid	Max				
3/16"	0.187	5	0.0013	0.0015	0.0018	0.375	372	452	532	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only			
1/4"	0.250	5	0.0018	0.0022	0.0026	0.500	410	497	585				
5/16"	0.312	5	0.0023	0.0028	0.0033	0.625	447	543	638				
3/8"	0.375	5	0.0027	0.0033	0.0039	0.750	484	588	692				
7/16"	0.437	5	0.0029	0.0035	0.0041	0.875	503	610	718				
1/2"	0.500	5	0.0031	0.0037	0.0044	1.000	521	633	745				
5/8"	0.625	5	0.0036	0.0044	0.0052	1.250	521	633	745				
3/4"	0.750	5	0.0039	0.0048	0.0056	1.500	521	633	745				
7/8"	0.875	5	0.0042	0.0051	0.0060	1.750	521	633	745				
1"	1.000	5	0.0044	0.0054	0.0063	2.000	521	633	745				

XT5 Series			ISO		XT5 Series Feeds and Speeds -MDC Coated-							P	
			Die & Mold Steels P20, A-2, D-2, M2, M42, T15										
Diameter		#FL	TEA-50	TEA-40	TEA-30	MAX AXIAL DOC	50°	40°	30°	When ramping, reduce program to			
			Chip Thickness at TEA				Surface Feet Per Min			RPM = 80%	Feed = 40%		
							Min	Mid	Max				
3/16"	0.187	5	0.0011	0.0014	0.0016	0.375	317	384	452	Helical Ramp Angle 5 - 8° Over 5° for Coolant-Through Only			
1/4"	0.250	5	0.0017	0.0020	0.0024	0.500	335	407	479				
5/16"	0.312	5	0.0020	0.0024	0.0028	0.625	363	441	519				
3/8"	0.375	5	0.0021	0.0026	0.0030	0.750	382	464	545				
7/16"	0.437	5	0.0023	0.0028	0.0033	0.875	391	475	559				
1/2"	0.500	5	0.0025	0.0031	0.0036	1.000	410	497	585				
5/8"	0.625	5	0.0027	0.0032	0.0038	1.250	410	497	585				
3/4"	0.750	5	0.0029	0.0036	0.0042	1.500	410	497	585				
7/8"	0.875	5	0.0031	0.0037	0.0044	1.750	410	497	585				
1"	1.000	5	0.0032	0.0039	0.0046	2.000	410	497	585				