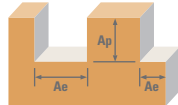
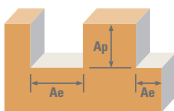


FRACTIONAL V-Carb



Series 55, 55CR, 55B Fractional	Hardness	Ae x DC	Ap x DC	Vc (sfm)	DC • in								
					1/8	1/4	3/8	1/2	5/8	3/4	1		
CARBON STEELS 1018, 1040, 1080, 1090, 10L50, 1140, 1212, 12L15, 1525, 1536	≤ 275 Bhn or ≤ 28 HRc	Profile 	≤ 0.25	≤ 1.5	385	RPM	11766	5883	3922	2941	2353	1961	1471
					(308-462)	Fz	0.0004	0.0009	0.0017	0.0023	0.0029	0.0028	0.0032
					630	RPM	19253	9626	6418	4813	3851	3209	2407
					(504-756)	Fz	0.0007	0.0018	0.0034	0.0046	0.0057	0.0055	0.0064
					630	RPM	19253	9626	6418	4813	3851	3209	2407
					(504-756)	Feed (ipm)	20.6	26.5	33.3	33.8	34.1	27.5	23.5
	≤ 375 Bhn or ≤ 40 HRc	HSM 	≤ 0.05	≤ 2	630	RPM	19253	9626	6418	4813	3851	3209	2407
					(504-756)	Fz	0.0007	0.0018	0.0034	0.0046	0.0057	0.0055	0.0064
					630	RPM	19253	9626	6418	4813	3851	3209	2407
					(504-756)	Feed (ipm)	67.4	86.6	109.1	110.7	109.7	88.2	77.0
					325	RPM	9932	4966	3311	2483	1986	1655	1242
					(260-390)	Fz	0.0003	0.0007	0.0013	0.0017	0.0022	0.0021	0.0024
≤ 375 Bhn or ≤ 40 HRc	HSM 	≤ 0.05	≤ 2	530	RPM	16197	8098	5399	4049	3239	2699	2025	
				(424-636)	Fz	0.0005	0.0014	0.0026	0.0034	0.0043	0.0041	0.0048	
				530	RPM	16197	8098	5399	4049	3239	2699	2025	
				(424-636)	Feed (ipm)	42.1	56.7	70.2	68.8	69.6	55.3	48.6	
				175	RPM	5348	2674	1783	1337	1070	891	669	
				(140-210)	Fz	0.0002	0.0005	0.0010	0.0013	0.0016	0.0017	0.0018	
≤ 375 Bhn or ≤ 40 HRc	HSM 	≤ 0.05	≤ 2	290	RPM	8862	4431	2954	2216	1772	1477	1108	
				(232-348)	Fz	0.0004	0.0010	0.0019	0.0025	0.0032	0.0033	0.0035	
				290	RPM	8862	4431	2954	2216	1772	1477	1108	
				(232-348)	Feed (ipm)	17.7	22.2	28.1	27.7	28.4	24.4	19.4	
				370	RPM	11307	5654	3769	2827	2261	1885	1413	
				(296-444)	Fz	0.0003	0.0007	0.0013	0.0017	0.0022	0.0023	0.0024	
≤ 275 Bhn or ≤ 28 HRc	HSM 	≤ 0.05	≤ 2	560	RPM	17114	8557	5705	4278	3423	2852	2139	
				(448-672)	Fz	0.0005	0.0014	0.0026	0.0034	0.0043	0.0044	0.0048	
				560	RPM	17114	8557	5705	4278	3423	2852	2139	
				(448-672)	Feed (ipm)	44.5	59.9	74.2	72.7	73.6	62.7	51.3	
				255	RPM	7793	3896	2598	1948	1559	1299	974	
				(204-306)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023	
≤ 275 Bhn or ≤ 28 HRc	HSM 	≤ 0.05	≤ 2	385	RPM	11766	5883	3922	2941	2353	1961	1471	
				(308-462)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0041	0.0045	
				385	RPM	11766	5883	3922	2941	2353	1961	1471	
				(308-462)	Feed (ipm)	28.2	38.2	47.1	47.1	47.1	40.2	33.1	
				235	RPM	7182	3591	2394	1795	1436	1197	898	
				(188-282)	Fz	0.0002	0.0006	0.0010	0.0014	0.0017	0.0018	0.0019	
≤ 325 Bhn or ≤ 35 HRc	HSM 	≤ 0.05	≤ 2	355	RPM	10849	5424	3616	2712	2170	1808	1356	
				(284-426)	Fz	0.0004	0.0011	0.0021	0.0028	0.0034	0.0036	0.0039	
				355	RPM	10849	5424	3616	2712	2170	1808	1356	
				(284-426)	Feed (ipm)	22.2	29.8	38.0	38.0	36.9	32.5	26.4	
				235	RPM	7182	3591	2394	1795	1436	1197	898	
				(188-282)	Fz	0.0002	0.0006	0.0010	0.0014	0.0017	0.0018	0.0019	

continued on next page



Series	Hardness	Profile	Ae x DC	Ap x DC	Vc (sfm)	DC • in							
						1/8	1/4	3/8	1/2	5/8	3/4	1	
Series 55, 55CR, 55B Fractional CAST IRONS (LOW & MEDIUM ALLOY) Gray, Malleable, Ductile CAST IRONS (HIGH ALLOY) Gray, Malleable, Ductile HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 601, 617, 625, Incoloy, Monel 400 HIGH TEMP ALLOYS (NICKEL, COBALT, IRON BASE) Inconel 718, X-750, Incoloy, Waspaloy, Hastelloy, Rene TITANIUM ALLOYS Pure Titanium, Ti6Al4V, Ti6Al2Sn4Zr2Mo, Ti4Al4Mo2Sn0.5Si TITANIUM ALLOYS (DIFFICULT) Ti10V2Fe3Al, Ti5Al5V5Mo3Cr, Ti7Al4Mo, Ti3Al8V6Cr4Zr4Mo, Ti6Al6V6Sn, Ti15V3 Cr3Sn3Al	≤ 220 Bhn or ≤ 19 HRc		≤ 0.25	≤ 1.5	470	RPM	14363	7182	4788	3591	2873	2394	1795
					(376-564)	Fz	0.0004	0.0009	0.0017	0.0023	0.0029	0.0030	0.0032
						Feed (ipm)	25.1	32.3	40.7	41.3	41.7	35.9	28.7
			≤ 0.05	≤ 2	705	RPM	21545	10772	7182	5386	4309	3591	2693
					(564-846)	Fz	0.0007	0.0018	0.0034	0.0046	0.0057	0.0059	0.0064
						Feed (ipm)	75.4	97.0	122.1	123.9	122.8	105.9	86.2
	≤ 260 Bhn or ≤ 26 HRc		≤ 0.25	≤ 1.5	360	RPM	11002	5501	3667	2750	2200	1834	1375
					(288-432)	Fz	0.0003	0.0007	0.0013	0.0017	0.0022	0.0023	0.0024
						Feed (ipm)	14.3	19.3	23.8	23.4	24.2	21.1	16.5
			≤ 0.05	≤ 2	540	RPM	16502	8251	5501	4126	3300	2750	2063
					(432-648)	Fz	0.0005	0.0014	0.0026	0.0034	0.0043	0.0044	0.0048
						Feed (ipm)	42.9	57.8	71.5	70.1	71.0	60.5	49.5
≤ 300 Bhn or ≤ 32 HRc		≤ 0.25	≤ 1.5	70	RPM	2139	1070	713	535	428	357	267	
				(56-84)	Fz	0.0002	0.0006	0.0010	0.0014	0.0017	0.0018	0.0019	
					Feed (ipm)	2.2	3.2	3.6	3.7	3.6	3.2	2.5	
		≤ 0.05	≤ 2	107	RPM	3270	1635	1090	817	654	545	409	
				(86-128)	Fz	0.0004	0.0011	0.0021	0.0028	0.0034	0.0036	0.0039	
					Feed (ipm)	6.7	9.0	11.4	11.4	11.1	9.8	8.0	
≤ 400 Bhn or ≤ 43 HRc		≤ 0.25	≤ 1.5	55	RPM	1681	840	560	420	336	280	210	
				(44-66)	Fz	0.0002	0.0004	0.0008	0.0010	0.0013	0.0014	0.0015	
					Feed (ipm)	1.3	1.7	2.2	2.1	2.2	2.0	1.6	
		≤ 0.05	≤ 2	85	RPM	2598	1299	866	649	520	433	325	
				(68-102)	Fz	0.0003	0.0008	0.0015	0.0021	0.0026	0.0027	0.0029	
					Feed (ipm)	4.0	5.2	6.5	6.8	6.8	5.8	4.7	
≤ 350 Bhn or ≤ 38 HRc		≤ 0.25	≤ 1.5	235	RPM	7182	3591	2394	1795	1436	1197	898	
				(188-282)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023	
					Feed (ipm)	7.2	10.8	14.4	14.4	14.4	12.6	10.3	
		≤ 0.05	≤ 2	390	RPM	11918	5959	3973	2980	2384	1986	1490	
				(312-468)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0041	0.0045	
					Feed (ipm)	29.8	38.7	47.7	47.7	47.7	40.7	33.5	
≤ 420 Bhn or ≤ 45 HRc		≤ 0.25	≤ 1.5	85	RPM	2598	1299	866	649	520	433	325	
				(68-102)	Fz	0.0002	0.0006	0.0012	0.0016	0.0020	0.0021	0.0023	
					Feed (ipm)	2.6	3.9	5.2	5.2	5.2	4.5	3.7	
		≤ 0.05	≤ 2	140	RPM	4278	2139	1426	1070	856	713	535	
				(112-168)	Fz	0.0005	0.0013	0.0024	0.0032	0.0040	0.0042	0.0045	
					Feed (ipm)	10.7	13.9	17.1	17.1	17.1	15.0	12.0	

Bhn (Brinell) HRc (Rockwell C) HSM (High Speed Machining)
 $rpm = Vc \times 3.82 / DC$
 $ipm = Fz \times 5 \times rpm$
 reduce speed and feed for materials harder than listed
 reduce feed and Ae when finish milling (.02 x DC maximum)
 reduce Ap to 1 x DC (maximum) when profile milling with long or extra long flute length tools
 feed rates listed have chip thinning adjustments included where applicable
 refer to the SGS Tool Wizard® for complete technical information (www.kyocera-sgtool.com)