

# SPEED & FEED GUIDE



Optimum Performance

## Series 2205, 2213

538 5 FLUTE

Material	Axial ↓	Radial →	SFM	1/8		1/4		3/8		1/2		5/8		3/4		
				RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	RPM	IPM	
<b>P</b>	<b>Carbon Steel</b> 10XX, 11XX, 12XX, 13XX	1 x D	1 x D	<b>220</b>	6723	17	3362	17	2241	20	1681	21	1345	20	1121	19
		1.25 x D	.3 x D	<b>264</b>	8068	24	4034	24	2689	29	2017	30	1614	29	1345	27
		1.5 X D	.1 x D	<b>343</b>	10488	52	5244	52	3496	63	2622	66	2098	63	1748	58
	<b>Alloy Steel</b> 4140, 8620	1 x D	1 x D	<b>180</b>	5501	16	2750	20	1834	16	1375	16	1100	16	917	14
		1.25 x D	.3 x D	<b>225</b>	6876	24	3438	29	2292	24	1719	25	1375	24	1146	22
		1.5 X D	.1 x D	<b>270</b>	8251	47	4126	59	2750	47	2063	49	1650	47	1375	43
	<b>Tool Steel</b> A2 ,A3, D2, H11, H13	1 x D	.5 x D	<b>180</b>	5501	13	2750	13	1834	16	1375	16	1100	16	917	14
		1.25 x D	.3 x D	<b>225</b>	6876	20	3438	20	2292	24	1719	25	1375	24	1146	22
		1.5 X D	.1 x D	<b>270</b>	8251	39	4126	39	2750	47	2063	49	1650	47	1375	43
<b>M</b>	<b>SS</b> 300 & 400 Series 303, 304, 316, 420, 416	.75 x D	1 x D	<b>140</b>	4278	9	2139	9	1426	10	1070	11	856	11	713	10
		1.25 x D	.3 x D	<b>185</b>	5654	14	2827	14	1885	17	1413	17	1131	17	942	15
		1.5 x D	.1 x D	<b>230</b>	7039	29	3519	29	2346	34	1760	36	1408	35	1173	32
	<b>Precipitation SS</b> 15-5, 16-6, 17-4, 17-5	0.5	1 x D	<b>115</b>	3514	7	1757	7	1171	8	879	9	703	8	586	8
		1.25 x D	.3 x D	<b>180</b>	5501	13	2750	13	1834	15	1375	16	1100	15	917	14
		1.5 x D	.1 x D	<b>250</b>	7640	30	3820	30	2547	35	1910	37	1528	36	1273	33
<b>K</b>	<b>Cast Iron - Grey</b> GG-10 to GG-40	1 x D	1 x D	<b>100</b>	3056	7	1528	7	1019	8	764	9	611	8	509	8
		1.25 x D	.3 x D	<b>125</b>	3820	10	1910	10	1273	12	955	13	764	13	637	11
		1.5 X D	.1 x D	<b>163</b>	4966	22	2483	22	1655	27	1242	28	993	27	828	25
	<b>Cast Iron- Ductile</b> GGG-40, to GGG-70	.75 x D	1 x D	<b>155</b>	4737	10	2368	10	1579	12	1184	13	947	12	789	11
		1.25 x D	.3 x D	<b>180</b>	5501	14	2750	14	1834	17	1375	18	1100	17	917	16
		1.5 x D	.1 x D	<b>216</b>	6601	28	3300	28	2200	34	1650	36	1320	34	1100	31
<b>S</b>	<b>High Temp Alloys Inconel</b> 718, Hastalloy, Waspalloy, A286, CoCr	.25 x D	.4 x D	<b>70</b>	2139	4	1070	4	713	5	535	5	428	5	357	4
		1.25 x D	.2 x D	<b>80</b>	2445	5	1222	5	815	6	611	7	489	7	407	6
		1.5 x D	.07 x D	<b>125</b>	3820	14	1910	14	1273	17	955	18	764	17	637	16
	<b>Titanium Alloy</b> Ti-6Al4V Grades (5-38)	0.5	1 x D	<b>180</b>	5501	10	2750	10	1834	12	1375	12	1100	12	917	11
		1.25 x D	.3 x D	<b>225</b>	6876	14	3438	14	2292	17	1719	18	1375	17	1146	16
		1.5 x D	.1 x D	<b>360</b>	11002	38	5501	38	3667	46	2750	48	2200	46	1834	43

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## PYSTL<sub>series</sub>

### More About the Series 2205

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### Series 2205 538 | 5FL | Square & Radius | PYSTL

Diameter	Shank Dia.	LOC	OAL	Radius	EDP
1/8	1/8	1/4	1-1/2	-	311348
1/8	1/8	1/4	1-1/2	0.010	311351
1/8	1/8	1/4	1-1/2	0.020	311353
1/8	1/8	1/4	1-1/2	0.030	311356
1/8	1/8	1/2	2	-	311358
1/8	1/8	1/2	2	0.010	311360
1/8	1/8	1/2	2	0.020	311362
1/8	1/8	1/2	2	0.030	311364
1/8	1/8	3/4	2-1/2	-	311367
1/8	1/8	3/4	2-1/2	0.010	311369
1/8	1/8	3/4	2-1/2	0.020	311371
3/16	3/16	5/16	2	-	311373
3/16	3/16	5/16	2	0.010	311375
3/16	3/16	5/16	2	0.020	311378
3/16	3/16	9/16	2	-	311381
3/16	3/16	9/16	2	0.010	311384
3/16	3/16	9/16	2	0.020	311388
3/16	3/16	9/16	2	0.030	311392
3/16	3/16	3/4	2-1/2	-	311395
3/16	3/16	3/4	2-1/2	0.010	311398
3/16	3/16	3/4	2-1/2	0.020	311401
3/16	3/16	3/4	2-1/2	0.030	311403
1/4	1/4	3/8	2	-	311405
1/4	1/4	3/8	2	0.010	311408
1/4	1/4	3/8	2	0.020	311410
1/4	1/4	3/8	2	0.030	311413
1/4	1/4	3/8	2	0.060	311417
1/4	1/4	1/2	2-1/2	-	311421
1/4	1/4	1/2	2-1/2	0.010	311423
1/4	1/4	1/2	2-1/2	0.020	311425
1/4	1/4	1/2	2-1/2	0.030	311427
1/4	1/4	1/2	2-1/2	0.060	311430
1/4	1/4	3/4	2-1/2	-	311432
1/4	1/4	3/4	2-1/2	0.010	311434
1/4	1/4	3/4	2-1/2	0.020	311438
1/4	1/4	3/4	2-1/2	0.030	311440
1/4	1/4	3/4	2-1/2	0.060	311444
1/4	1/4	1	3	-	311446
1/4	1/4	1	3	0.010	311448
1/4	1/4	1	3	0.020	311452



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Diameter	Shank Dia.	LOC	OAL	Radius	EDP
1/4	1/4	1	3	0.030	311454
1/4	1/4	1	3	0.060	311458
1/4	1/4	1-1/4	3	-	311461
1/4	1/4	1-1/4	3	0.010	311464
1/4	1/4	1-1/4	3	0.020	311467
1/4	1/4	1-1/4	3	0.030	311469
1/4	1/4	1-1/4	3	0.060	311473
5/16	5/16	7/16	2	-	311477
5/16	5/16	7/16	2	0.010	311480
5/16	5/16	7/16	2	0.020	311484
5/16	5/16	7/16	2	0.030	311486
5/16	5/16	7/16	2	0.060	311489
5/16	5/16	13/16	2-1/2	-	311491
5/16	5/16	13/16	2-1/2	0.010	311495
5/16	5/16	13/16	2-1/2	0.020	311499
5/16	5/16	13/16	2-1/2	0.030	311501
5/16	5/16	13/16	2-1/2	0.060	311503
5/16	5/16	1	3	-	311505
5/16	5/16	1	3	0.010	311509
5/16	5/16	1	3	0.020	311512
5/16	5/16	1	3	0.030	311514
5/16	5/16	1	3	0.060	311518
3/8	3/8	1/2	2	-	311522
3/8	3/8	1/2	2	0.010	311524
3/8	3/8	1/2	2	0.020	311528
3/8	3/8	1/2	2	0.030	311531
3/8	3/8	1/2	2	0.060	311535
3/8	3/8	1/2	2	0.090	311537
3/8	3/8	1	2-1/2	-	311540
3/8	3/8	1	2-1/2	0.010	311543
3/8	3/8	1	2-1/2	0.020	311547
3/8	3/8	1	2-1/2	0.030	311550
3/8	3/8	1	2-1/2	0.060	311553
3/8	3/8	1	2-1/2	0.090	311556
3/8	3/8	1-1/4	3	-	311558
3/8	3/8	1-1/4	3	0.010	311562
3/8	3/8	1-1/4	3	0.020	311566
3/8	3/8	1-1/4	3	0.030	311568
3/8	3/8	1-1/4	3	0.060	311570
3/8	3/8	1-1/4	3	0.090	311574

# PYSTL<sub>series</sub>

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Diameter	Shank Dia.	LOC	OAL	Radius	EDP
3/8	3/8	1-1/2	3	-	311576
3/8	3/8	1-1/2	3	0.010	311578
3/8	3/8	1-1/2	3	0.020	311582
3/8	3/8	1-1/2	3	0.030	311586
3/8	3/8	1-1/2	3	0.060	311588
3/8	3/8	1-1/2	3	0.090	311590
1/2	1/2	5/8	2-1/2	-	311594
1/2	1/2	5/8	2-1/2	0.020	311597
1/2	1/2	5/8	2-1/2	0.030	311601
1/2	1/2	5/8	2-1/2	0.060	311604
1/2	1/2	5/8	2-1/2	0.090	311606
1/2	1/2	5/8	2-1/2	0.120	311610
1/2	1/2	1	3	-	311613
1/2	1/2	1	3	0.020	311615
1/2	1/2	1	3	0.030	311619
1/2	1/2	1	3	0.060	311622
1/2	1/2	1	3	0.090	311626
1/2	1/2	1	3	0.120	311630
1/2	1/2	1-1/4	3	-	311634
1/2	1/2	1-1/4	3	0.020	311637
1/2	1/2	1-1/4	3	0.030	311640
1/2	1/2	1-1/4	3	0.060	311642
1/2	1/2	1-1/4	3	0.090	311644
1/2	1/2	1-1/4	3	0.120	311648
1/2	1/2	1-5/8	4	-	311652
1/2	1/2	1-5/8	4	0.020	311654
1/2	1/2	1-5/8	4	0.030	311658
1/2	1/2	1-5/8	4	0.060	311660
1/2	1/2	1-5/8	4	0.090	311664
1/2	1/2	1-5/8	4	0.120	311666
1/2	1/2	2	4	-	311670
1/2	1/2	2	4	0.020	311674
1/2	1/2	2	4	0.030	311678
1/2	1/2	2	4	0.060	311681
1/2	1/2	2	4	0.090	311683
1/2	1/2	2	4	0.120	311687
5/8	5/8	3/4	3	-	311691
5/8	5/8	3/4	3	0.030	311695
5/8	5/8	3/4	3	0.060	311699
5/8	5/8	3/4	3	0.090	311703



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Diameter	Shank Dia.	LOC	OAL	Radius	EDP
5/8	5/8	3/4	3	0.120	311705
5/8	5/8	1-1/4	3-1/2	-	311708
5/8	5/8	1-1/4	3-1/2	0.030	311712
5/8	5/8	1-1/4	3-1/2	0.060	311715
5/8	5/8	1-1/4	3-1/2	0.090	311719
5/8	5/8	1-1/4	3-1/2	0.120	311723
5/8	5/8	1-5/8	3-1/2	-	311725
5/8	5/8	1-5/8	3-1/2	0.030	311727
5/8	5/8	1-5/8	3-1/2	0.060	311730
5/8	5/8	1-5/8	3-1/2	0.090	311734
5/8	5/8	1-5/8	3-1/2	0.120	311737
5/8	5/8	2-1/8	4	-	311741
5/8	5/8	2-1/8	4	0.030	311743
5/8	5/8	2-1/8	4	0.060	311745
5/8	5/8	2-1/8	4	0.090	311748
5/8	5/8	2-1/8	4	0.120	311750
5/8	5/8	2-1/2	5	-	311754
5/8	5/8	2-1/2	5	0.030	311756
5/8	5/8	2-1/2	5	0.060	311759
5/8	5/8	2-1/2	5	0.090	311761
5/8	5/8	2-1/2	5	0.120	311764
3/4	3/4	1	3	-	311767
3/4	3/4	1	3	0.030	311771
3/4	3/4	1	3	0.060	311773
3/4	3/4	1	3	0.090	311776
3/4	3/4	1	3	0.120	311778
3/4	3/4	1	3	0.250	311780
3/4	3/4	1-5/8	4	-	311782
3/4	3/4	1-5/8	4	0.030	311785
3/4	3/4	1-5/8	4	0.060	311787
3/4	3/4	1-5/8	4	0.090	311789
3/4	3/4	1-5/8	4	0.120	311793
3/4	3/4	1-5/8	4	0.250	311796
3/4	3/4	2-1/4	5	-	311800
3/4	3/4	2-1/4	5	0.030	311804
3/4	3/4	2-1/4	5	0.060	311808
3/4	3/4	2-1/4	5	0.090	311810
3/4	3/4	2-1/4	5	0.120	311812
3/4	3/4	2-1/4	5	0.250	311814
3/4	3/4	2-3/4	5	-	311818

# PYSTL<sub>series</sub>

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Diameter	Shank Dia.	LOC	OAL	Radius	EDP
3/4	3/4	2-3/4	5	0.030	311820
3/4	3/4	2-3/4	5	0.060	311824
3/4	3/4	2-3/4	5	0.090	311826
3/4	3/4	2-3/4	5	0.120	311828
3/4	3/4	2-3/4	5	0.250	311831
3/4	3/4	3-1/4	6	-	311833
3/4	3/4	3-1/4	6	0.030	311837
3/4	3/4	3-1/4	6	0.060	311839
3/4	3/4	3-1/4	6	0.090	311842
3/4	3/4	3-1/4	6	0.120	311846
3/4	3/4	3-1/4	6	0.250	311848
1	1	1-1/4	4	-	311852
1	1	1-1/4	4	0.030	311855
1	1	1-1/4	4	0.060	311857
1	1	1-1/4	4	0.090	311860
1	1	1-1/4	4	0.120	311864
1	1	1-1/4	4	0.250	311868
1	1	2	4	-	311872
1	1	2	4	0.030	311876
1	1	2	4	0.060	311878
1	1	2	4	0.090	311881
1	1	2	4	0.120	311884
1	1	2	4	0.250	311888
1	1	2-5/8	5	-	311890
1	1	2-5/8	5	0.030	311893
1	1	2-5/8	5	0.060	311896
1	1	2-5/8	5	0.090	311900
1	1	2-5/8	5	0.120	311902
1	1	2-5/8	5	0.250	311905
1	1	3-1/4	6	-	311909
1	1	3-1/4	6	0.030	311913
1	1	3-1/4	6	0.060	311915
1	1	3-1/4	6	0.090	311918
1	1	3-1/4	6	0.120	311920
1	1	3-1/4	6	0.250	311924
1	1	4-1/4	7	-	311927
1	1	4-1/4	7	0.030	311931
1	1	4-1/4	7	0.060	311933
1	1	4-1/4	7	0.090	311935
1	1	4-1/4	7	0.120	311937



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1	1	4-1/4	7	0.250	<b>311940</b>
1-1/4	1-1/4	1-1/2	4-1/2	-	<b>311943</b>
1-1/4	1-1/4	1-1/2	4-1/2	0.030	<b>311947</b>
1-1/4	1-1/4	1-1/2	4-1/2	0.060	<b>311949</b>
1-1/4	1-1/4	1-1/2	4-1/2	0.090	<b>311951</b>
1-1/4	1-1/4	1-1/2	4-1/2	0.120	<b>311955</b>
1-1/4	1-1/4	1-1/2	4-1/2	0.250	<b>311957</b>
1-1/4	1-1/4	2	4-1/2	-	<b>311961</b>
1-1/4	1-1/4	2	4-1/2	0.030	<b>311964</b>
1-1/4	1-1/4	2	4-1/2	0.060	<b>311966</b>
1-1/4	1-1/4	2	4-1/2	0.090	<b>311968</b>
1-1/4	1-1/4	2	4-1/2	0.120	<b>311971</b>
1-1/4	1-1/4	2	4-1/2	0.250	<b>311975</b>
1-1/4	1-1/4	2-5/8	6	-	<b>311977</b>
1-1/4	1-1/4	2-5/8	6	0.030	<b>311979</b>
1-1/4	1-1/4	2-5/8	6	0.060	<b>311983</b>
1-1/4	1-1/4	2-5/8	6	0.090	<b>311985</b>
1-1/4	1-1/4	2-5/8	6	0.120	<b>311987</b>
1-1/4	1-1/4	2-5/8	6	0.250	<b>311991</b>
1-1/4	1-1/4	4-1/2	7	-	<b>311993</b>
1-1/4	1-1/4	4-1/2	7	0.030	<b>311995</b>
1-1/4	1-1/4	4-1/2	7	0.060	<b>311998</b>
1-1/4	1-1/4	4-1/2	7	0.090	<b>312001</b>
1-1/4	1-1/4	4-1/2	7	0.120	<b>312003</b>
1-1/4	1-1/4	4-1/2	7	0.250	<b>312005</b>

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