

## GEN3SYS® XT Pro | Imperial (inch)

ISO	Material	Hardness (BHN)	Speed (SFM)	Feed Rate (IPR) by Diameter													
				11 series 0.4331 - 0.4723	12 series 0.4724 - 0.5117	13 series 0.5118 - 0.5511	14 series 0.5512 - 0.5905	15 series 0.5906 - 0.6298	16 series 0.6299 - 0.6692	17 series 0.6693 - 0.7086	18 series 0.7087 - 0.7873	20 series 0.7874 - 0.8660	22 series 0.8661 - 0.9448	24 series 0.9449 - 1.0235	26 series 1.0236 - 1.1416	29 series 1.1417 - 1.2597	32 series 1.2598 - 1.3780
P	Free Machining Steel 1118, 1215, 12L14, etc.	100 - 150	550	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026
		150 - 200	475	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.020	0.021	0.022	0.023	0.024
		200 - 250	425	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	Low Carbon Steel 1010, 1020, 1025, 1522, 1144, etc.	85 - 125	520	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026
		125 - 175	450	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.019	0.020	0.021	0.022	0.023	0.024
		175 - 225	410	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022	0.023
		225 - 275	350	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.016	0.017	0.018	0.019	0.020	0.021
	Medium Carbon Steel 1030, 1040, 1050, 1527, 1140, 1151, etc.	125 - 175	450	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025
		175 - 225	410	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	0.024
		225 - 275	350	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
	Alloy Steel 4140, 5140, 8640, etc.	125 - 175	415	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025
		175 - 225	380	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	0.024
		225 - 275	340	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023
		275 - 325	310	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.020
	High Strength Alloy 4340, 4330V, 300M, etc.	225 - 300	250	0.008	0.009	0.010	0.011	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020
		300 - 350	225	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019
		350 - 400	200	0.005	0.006	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018
	Structural Steel A36, A285, A516, etc.	100 - 150	410	0.010	0.011	0.012	0.013	0.013	0.015	0.015	0.017	0.019	0.021	0.022	0.023	0.024	0.025
150 - 250		330	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	0.023	
250 - 350		305	0.007	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.021	0.022	
Tool Steel H-13, H-21, A-4, O-2, S-3, etc.	150 - 200	265	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	
	200 - 250	205	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	
S	High Temp Alloy Hastelloy B, Inconel 600, etc.	140 - 220	130	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013	0.014
		220 - 310	100	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012	0.013
	Titanium Alloy	140 - 220	140	0.005	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.013	0.014
		220 - 310	110	0.004	0.005	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.010	0.011	0.011	0.012	0.012
Aerospace Alloy S82	185 - 275	165	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	
	275 - 350	135	0.003	0.003	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.011	
M	Stainless Steel 400 Series 416, 420, etc.	185 - 275	240	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.016	0.017
		275 - 350	180	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.010	0.011	0.012	0.013	0.014	0.015
	Stainless Steel 300 Series 304, 316, 17-4PH, etc.	135 - 185	220	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.011
		185 - 275	160	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	0.009	0.009	0.010
	Super Duplex Stainless Steel	135 - 185	125	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010
185 - 275	100	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.005	0.005	0.006	0.006	0.007	0.007	0.008	0.008	
H	Wear Plate Hardox, AR400, T-1, etc.	400	160	0.005	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.011	0.011	0.012	0.012
		500	130	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.009	0.010	0.010	0.010	0.010	0.011	0.011
		600	90	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.010	0.010	0.010
	Hardened Steel	300 - 400	170	0.005	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.010	0.010	0.010	0.010	0.011	0.011
400 - 500		130	0.004	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.009	0.010	0.010	0.010	0.010	
K	SG / Nodular Cast Iron	120 - 150	550	0.010	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.020	0.022	0.022	0.024	0.025	0.026
		150 - 200	520	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.019	0.020	0.020	0.022	0.022	0.024	0.024
		200 - 220	465	0.008	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.020	0.022	0.022	0.023
		220 - 260	405	0.008	0.009	0.010	0.011	0.012	0.013	0.015	0.017	0.018	0.019	0.020	0.020	0.022	0.022
		260 - 320	365	0.008	0.008	0.009	0.010	0.011	0.012	0.014	0.015	0.017	0.018	0.019	0.020	0.020	0.021
	Grey / White Iron	120 - 150	575	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.021	0.022	0.023	0.024	0.025	0.026	0.027
		150 - 200	550	0.011	0.012	0.013	0.014	0.015	0.016	0.018	0.020	0.021	0.022	0.023	0.024	0.025	0.026
		200 - 220	495	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.020	0.020	0.021	0.022	0.023	0.024	0.025
220 - 260	425	0.009	0.010	0.011	0.012	0.013	0.014	0.016	0.018	0.019	0.020	0.021	0.022	0.023	0.024		
260 - 320	380	0.009	0.010	0.011	0.012	0.013	0.014	0.015	0.017	0.018	0.019	0.020	0.021	0.022	0.023		
N	Cast Aluminum	30	1150	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023	0.024	0.025
		180	860	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.021	0.022	0.023	0.023
	Wrought Aluminum	30	1600	0.013	0.015	0.016	0.017	0.018	0.019	0.020	0.022	0.023	0.024	0.026	0.027	0.029	0.030
		180	1150	0.012	0.014	0.015	0.016	0.017	0.018	0.019	0.021	0.022	0.023	0.025	0.026	0.028	0.029
	Aluminum Bronze	100 - 200	415	0.010	0.011	0.012	0.012	0.013	0.014	0.015	0.015	0.016	0.017	0.018	0.019	0.019	0.019
		200 - 250	335	0.008	0.009	0.010	0.011	0.012	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.018	0.019
	Brass	100	755	0.010	0.012	0.013	0.014	0.015	0.016	0.017	0.019	0.020	0.022	0.023	0.024	0.026	0.026
Copper	60	490	0.003	0.003	0.003	0.004	0.005	0.006	0.006	0.007	0.008	0.008	0.008	0.010	0.010	0.011	

## 7xD Adjustment Example (0.80 Adjustment)

Data • Adjustment Value	Speed/Feed (7xD)
200 SFM • 0.80	= 160 SFM
0.008 IPR • 0.80	= 0.0064 IPR

## 10xD Adjustment Example (0.70 Adjustment)

Speed • Adjustment Value	Speed/Feed (10xD)
200 SFM • 0.70	= 140 SFM
0.008 IPR • 0.70	= 0.0056 IPR

## Coolant Recommendations

Series	Stub, 3xD, 5xD		7xD		10xD	
	Pressure PSI	Flow Rate GPM	Pressure PSI	Flow Rate GPM	Pressure PSI	Flow Rate GPM
11	450	5	600	8	800	10
12	450	5				